SoCalGas

INSIGNIA ENVIRONMENTAL

ANGELES LINK PHASE 1
ENVIRONMENTAL ANALYSIS
FINAL REPORT – DECEMBER 2024

SoCalGas commissioned this Environmental Analysis study from Insignia Environmental.
The analysis was conducted, and this report was prepared, collaboratively.

EXECUTIVE SUMMARY

On December 15, 2022, the California Public Utilities Commission (CPUC) adopted Decision (D.) 22-12-055 authorizing the establishment of Southern California Gas Company's (SoCalGas's) Memorandum Account to track costs for advancing the first phase (Phase 1) of Angeles Link (Angeles Link). Angeles Link is proposed as a non-discriminatory pipeline system dedicated to public use that would transport clean renewable hydrogen from regional third-party production and storage sites to end users in Central and Southern California, including the Los Angeles Basin. This Environmental Analysis provides a desktop analysis of the potential environmental impacts of Angeles Link, as well as a comparison of potential impacts of identified alternatives, as further described herein. This high-level assessment does not account for Angeles Link or the alternatives' potential benefits, including those benefits from the use of clean energy delivered by Angeles Link or alternatives.

PURPOSE OF ANALYSIS

The purpose of this Environmental Analysis is to study and evaluate the potential environmental impacts of Angeles Link and alternatives to the Evaluated Segments, such as a localized hydrogen hub or electrification option, consistent with Ordering Paragraph 5(e) of D.22-12-055. In addition, the Environmental Analysis, together with the High-Level Feasibility Assessment and Permitting Analysis (High-Level Permitting Analysis) (SoCalGas and Rincon 2024) prepared as a separate Angeles Link Phase 1 analysis, evaluates potential environmental impacts of possible pipeline routes and configurations and demonstrates how Angeles Link would comply with California environmental law and public policies consistent with Ordering Paragraph 6(i) and 6(n) of D.22-12-055, respectively. This analysis provides a summary of relevant laws, regulations and policies applicable to the environmental topic areas evaluated herein. As Angeles Link progresses, a proposed project and project alternatives will be further evaluated in compliance with relevant laws and policies including the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

The Environmental Analysis does not evaluate every environmental impact that could occur, but rather attempts to identify known environmental resources that could be impacted during construction. Similarly, this analysis looks at anticipated operation and maintenance (O&M) activities to determine potential impacts to specified environmental factors. The Environmental Analysis relies on general assumptions related to the construction and O&M activities of underground pipeline systems and appurtenant facilities (e.g., valve stations, pressure-limiting stations, and compressor stations) because details of exact construction methods and O&M activities were not known at this early stage of design.[1]

[1] At this feasibility stage, the identified conceptual pipeline routes are preliminary in nature, and the potential environmental impacts may change once the Angeles Link pipeline routes and alignment are finalized.

PROJECT OVERVIEW

Angeles Link is proposed as a non-discriminatory, open access pipeline system that is dedicated to public use. The Angeles Link would transport clean renewable hydrogen from regional third-party production and storage[2] sites to end users in Central and Southern California, including the Los Angeles Basin (inclusive of the Ports of Los Angeles and Long Beach). The Angeles Link would convey clean renewable hydrogen at a pressure ranging from approximately 200 to 1,200 pounds per square inch gauge (psig), would include pipeline diameters up to 36 inches, and would be sized to convey approximately 0.5 to 1.5 million metric tons (MMT) per year (MMTPY) of clean renewable hydrogen per year over time. Aboveground structures would include valve stations spaced at regular intervals, test leads, and one or more compressor stations.

SoCalGas is part of the Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES),[3] which is a public-private partnership to create a sustainable, statewide, clean hydrogen hub in California utilizing local renewable resources. In July 2024, ARCHES and the U.S. Department of Energy announced the signing of a $12.6 billion agreement to build the California hydrogen hub, including the up to $1.2 billion in federal funding that was announced last year when California was selected as a national hub.[4] Two initial conceptual pipeline routes identified for Angeles Link were also within ARCHES. As described further herein, based on the separate Phase 1 analysis included in the Preliminary Routing/Configuration Analysis (Routing Study) (SoCalGas and Burns and McDonnell 2024a), Angeles Link is proposed to extend across approximately 450 miles.

RELATIONSHIP TO OTHER STUDIES

SoCalGas prepared a portfolio of studies to assess the feasibility of Angeles Link. The desktop analysis summarized in this report relies on the conceptual pipeline routes identified in the Routing Study and the alternatives identified in the Project Options and Alternatives Study (Alternatives Study) (SoCalGas and Wood Mackenzie 2024).

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[2] Clean hydrogen production and aboveground and underground storage is not currently part of Angeles Link. As Angeles Link is further designed, and in alignment with the development of system requirements, the role of storage to support regional hydrogen producers and end users should be considered. Distributed storage equipment located at third-party production and end user sites, along with line packing, which refers to storing and then withdrawing gas supplies from the pipeline, can provide storage capacity while larger scale storage technologies are developed overtime to support regional hydrogen hub requirements.

[3] ARCHES was co-founded by the Governor's Office of Business and Economic Development, the University of California, a statewide labor coalition organized by the State Building and Construction Trades Council of California, and the Renewables 100 Policy Institute (ARCHES 2024a).

[4] California's renewable hydrogen hub officially launched on June 17, 2024 (ARCHES 2024b).

Routing Study

Angeles Link is proposed to extend across approximately 450 miles. SoCalGas initially identified multiple conceptual pipeline routes for Angeles Link. When combined, these conceptual pipeline routes traverse approximately 1,300 miles of California. This Environmental Analysis reviews the environmental resources that occur along all 1,300 miles of conceptual pipeline routes (hereafter referred to as the "Evaluated Segments") at a desktop level.

At this stage in the Angeles Link feasibility analysis, the Evaluated Segments are directional in nature. The Evaluated Segments do not illustrate the specific routes where Angeles Link may be constructed, as specific routes and street-level alignments will be further studied and refined in future phases of Angeles Link. However, while still directional in nature, for purposes of evaluating the potential environmental impacts of Angeles Link, the Environmental Analysis reviewed specific routes drawn on a map for the informational purposes of this study and report.

Based on the Routing Study, SoCalGas identified four preferred route configurations and an additional scenario (Route Variation 1) for Angeles Link that would generally connect potential ARCHES production and offtake sites; connect two SoCalGas segments within ARCHES to support the California H2Hub; connect potential producers and end users as identified by the Production Planning and Assessment (Production Study) (SoCalGas and Burns and McDonnell 2024b) and Demand Study (SoCalGas 2024a), which includes 1.5 MMTPY of throughput; account for certain engineering, environmental, and social features along the pipeline route; and traverse various land types including, but not limited to, urban areas, rural lands, and mountainous terrain.[5] As described further in the Routing Study, those four preferred pipeline route configurations would each extend across approximately 450 miles.

Project Options and Alternatives Study

The Alternatives Study identified a range of alternatives to Angeles Link that may meet Angeles Link's underlying purpose, and further refined the list of alternatives to be carried forward for further evaluation in the desktop analysis based on alternatives that met specific criteria. The alternatives identified for further assessment were grouped into two broad categories: hydrogen delivery alternatives and non-hydrogen delivery alternatives. The hydrogen delivery alternatives carried forward from the Alternatives Study and identified for further evaluation in this study include delivery by truck of hydrogen in liquid form, delivery by truck of hydrogen in gaseous form, shipping of hydrogen in liquid form, shipping of hydrogen converted into methanol, power transmission and distribution (T&D) with in-basin hydrogen production, and a localized

[5] The Routing Study also identified a fifth scenario referred to as the Route Variation 1, which was added to minimize traversing disadvantaged communities in the Los Angeles Basin. The fifth scenario is not analyzed in this study, as that scenario was identified late in the Phase 1 analyses. The fifth scenario will be explored in more detail in Phase 2.

hub. The non-hydrogen alternatives identified for further evaluation in this study include systemwide electrification and carbon capture and storage (CCS).[6]

EVALUATION APPROACH

To evaluate the potential environmental impacts of Angeles Link and the identified alternatives, this analysis used the CEQA Guidelines Appendix G checklist as a framework and focused on the following environmental factors: air quality and greenhouse gas (GHG) emissions; biological resources; cultural resources and tribal cultural resources (TCRs); energy; hazards and hazardous materials; hydrology and water quality; and land use and planning.[7] These resource areas were selected based on the environmental factors that could be evaluated given the preliminary design of the Evaluated Segments (e.g., no final alignment or construction methods) and based on the environmental factors for which the Evaluated Segments are more likely to have impacts. The conceptual pipeline routes were divided into 13 study areas based upon geographic location and potential environmental resources present. The alternatives were evaluated based on high level assumptions for construction and O&M activities typically associated with the type of alternative.

Given the feasibility stage of the design of Angeles Link and the identified alternatives, the analysis in this report does not 1) determine if the potential impacts in each resource area are significant from the CEQA/ NEPA perspective[8] nor address the magnitude of the potential impacts because the details of Angeles Link have not been developed; 2) capture all resource areas that would be evaluated in a CEQA/NEPA document; 3) compare the magnitude of impacts between Angeles Link and the alternatives; or 4) account for Angeles Link's or the alternatives' benefits, including those benefits from the use of the clean energy delivered by Angeles Link or the alternatives. A complete environmental review of Angeles Link would be conducted pursuant to CEQA/NEPA, as applicable, by the public agencies considering applications for discretionary permits during a future phase of Angeles Link. That environmental review would also include an

[6] For a full description of the alternatives and methodology used to identify the alternatives to be carried forward for environmental analysis, see the separate Angeles Link Phase 1 Alternatives Study.

[7] An evaluation of aesthetics, agriculture/forestry resources, geology/soils, mineral resources, noise, population/housing, public services, recreation, transportation, utilities/service systems, and wildfire was not conducted given the level of details for Angeles Link available at this time and the more detailed environmental review that would occur in future phases of Angeles Link.

[8] NEPA regulations require a project with significant impacts to prepare an Environmental Impact Statement (EIS) rather than an Environmental Assessment, (See 40 CFR § 1501.3 and 40 CFR § 1501.4). "Significant impacts" under CEQA are defined through a combination of statutory language and guidelines, including 14 CCR § 15064 and 14 CCR § 15382 (defining a "significant effect on the environment" as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project.)

analysis of the potential environmental impacts of identified alternatives as set forth under CEQA/NEPA requirements.

KEY FINDINGS

Pipeline construction, operation, and maintenance could result in potential impacts associated with air quality and GHG emissions, biological resources, cultural resources and TCRs, energy, hazards and hazardous materials, and land use and planning; however, most of the impacts identified would be short-term and temporary and could likely be minimized through established best management practices and/or avoidance and minimization measures (AMMs). Permanent impacts would occur from aboveground facilities (e.g., valve stations, compressor stations). Valve stations would require a relatively small footprint, but would be located at regular intervals along the pipeline. Compressor stations would require a larger footprint, but fewer would be required to support the system. As with any linear infrastructure project, the potential for impacts to sensitive resources and the magnitude of those impacts is directly related to the design and location. Small changes in the design and location can avoid or even introduce new potential impacts. As a result, it was not possible to draw conclusions with regard to the magnitude of potential impacts in this study; however, based on typical pipeline construction methods and O&M procedures used for natural gas pipelines, potential impacts or conflicts with current laws and policies that would preclude further design were not identified at this stage of the feasibility analysis.

Both temporary and permanent impacts during construction are anticipated. Once more details of Angeles Link are refined, future technical reports, such as wetland and waters assessments, biological resources reports, cultural resources reports, Phase I Environmental Site Assessments, noise studies, and air quality analyses, among other specialized studies, would provide further analysis of Angeles Link's potential impacts on local resources. The information in those technical reports, along with more specific information on the project's methods of construction (including the location of facilities), would provide the basis for future environmental analysis. In addition, the CEQA and/or NEPA processes, which are intended to disclose potential environmental impacts, would also consider potential measures to avoid or minimize potential impacts. This study identified potential avoidance and minimization measures that could be implemented, but it is anticipated that once Angeles Link is further developed, additional measures would be identified during the CEQA and/or NEPA processes.

Air Quality and Greenhouse Gas Emissions

During construction, there will be vehicle and equipment emissions that could exceed state and federal thresholds depending on the construction schedule and sequencing. However, any emissions exceedance would likely be short-term and temporary and could likely be reduced with minimization measures. During the operational phase, equipment and vehicle use for maintenance of the pipelines would be limited to routine patrols and repairs and therefore impacts to air quality and GHG emissions would also be limited with respect to pipeline maintenance. Air quality impacts could occur during the operational phase from one or more compressor stations needed to transport the

gas through the pipeline system, depending on the energy source used for the compressor stations.

Biological Resources

Biological resources throughout Central and Southern California could potentially be impacted during construction of the Evaluated Segments from clearing, grading, and other conventional pipeline construction activities that cause either a direct or indirect impact to species and their habitat. Sensitive flora and/or fauna were identified in all of the study areas. However, potential impacts that were identified in this study could likely be minimized or avoided through routing, construction methodology, or other avoidance and minimization measures. In general, biological resources are more prevalent in open space/rural areas whereas urban areas may have fewer resources. However, the pipeline would be below ground and areas that would be disturbed during construction could be allowed to return to preconstruction conditions. Some aboveground appurtenances (e.g., valve stations, compressor stations) could permanently remove habitat, but these footprints would be relatively small and could potentially be sited in previously disturbed areas or otherwise avoid sensitive habitat.

Cultural Resources and Tribal Cultural Resources (TCR)

Cultural resources have been documented in all of the study areas and within 0.25 mile of the Evaluated Segments. Additionally, all study areas also identified potentially eligible resources that would be present within 200 feet of the segments. If these resources are within the temporary workspaces required during construction, they could be impacted. However, it cannot be determined whether cultural resources would be impacted during construction until the workspace limits and location have been identified. Additionally, pedestrian surveys are necessary to confirm whether known resources (e.g., artifacts) previously recorded are still there, previously unidentified resources exist, and the extent and exact location of any resource that may intersect the pipeline or appurtenant facilities. Nonetheless, with routing, trenchless construction techniques, and standard avoidance and minimization measures, the potential to impact cultural resources could be avoided or reduced. Cultural resources could also be impacted during ground disturbing activities during O&M of the Evaluated Segments. However, SoCalGas's standard O&M practices require work to be stopped and redirected in the event of unanticipated cultural find until the find could be further evaluated, which would reduce impacts to cultural resources.

TCRs could be identified during the CEQA lead agency's consultation with tribes pursuant to Assembly Bill (AB) 52 and consistent with CEQA requirements, which could not take place at this early stage. However, TCRs may include sacred places or ceremony sites with cultural value to a California Native American tribe and construction and O&M activities could have a potential to impact these sites if any were near the Evaluated Segments.

Energy

Construction activities typically associated with installation of pipeline and appurtenant facilities require the use of fossil fuels (e.g., diesel or gasoline) to power construction equipment and vehicles. The same equipment would likely be used to construct Angeles Link. Energy consumption during construction would likely represent a small amount of the total local energy use within each county and would be expected to be within the supply and infrastructure service capabilities of the local energy providers. The use of energy for construction would be necessary, efficient, and conservative in nature. The O&M activities for the pipeline would involve routine inspections and preventive maintenance to support service reliability; however, equipment and energy use during O&M activities for the pipelines is anticipated to be minimal and therefore have minimal impact on the total energy consumption within each of the counties that the Evaluated Segments could cross. Operation of the compressor stations that may support the pipeline system may have impacts related to energy use.

Construction activities during the installation of pipeline and appurtenant facilities may temporarily interfere with existing and planned renewable energy projects by requiring energy resources and space for construction; however, the pipeline would occur underground and many of the temporarily impacted areas could be returned to the prior condition and use. In addition, the siting of compressor stations could consider existing or planned renewable energy projects before finalizing the design.

Hazards and Hazardous Materials

Construction of a pipeline system involves the use of hazardous substances to fuel, lubricate, and operate heavy equipment and tools. While these substances have the potential to be released in the environment, they would likely be used in relatively small quantities. Existing hazardous waste sites were identified in most of the study areas, but whether the sites could impact workers is unknown as the potential for adverse effects from these sites depends on the exact location of the contamination in relation to Angeles Link's work areas. However, it is expected that standard avoidance and minimization measures could reduce potential impacts from existing contaminated sites.

Schools and day-care centers were identified within 0.5 mile of most of the Evaluated Segments. The location of these buildings would need to be considered in future routing and engineering efforts. Airports were also identified within two miles of most of the Evaluated Segments. However, because the pipeline would be underground, potential conflicts with airports would not be anticipated after construction. Some coordination may be required during construction to help maintain airport operations. The construction and O&M of the Evaluated Segments could have potential impacts to emergency or evacuation plans. Therefore, coordination with each responsible agency would be necessary to enable emergency routes to remain open during construction and O&M activities. In addition, coordination will be necessary in order to share information with emergency responders about the hydrogen pipeline system during the operational phase.

The transportation of hydrogen gas carries an inherent risk of upset that could result from an inadvertent strike or dig-in by a third party, a leak, or other release of hydrogen. The hydrogen pipeline would be subject to similar safety considerations as a natural gas pipeline, as well as additional hydrogen-specific safety considerations for which hydrogen safety measures may need to be developed. This analysis determines that there is a potential impact from a reasonably foreseeable upset. The Safety Study and the Pipeline Sizing and Design Criteria Study prepared as separate Angeles Link Phase 1 analyses provide more information on properties of hydrogen, as well as safety measures and design considerations for hydrogen pipelines.

As with any construction project in a wildland area, Angeles Link would have a potential impact to ignite a wildland fire in portions of Evaluated Segments where the fire potential is very high. During the operational phase, potential wildfire risk would generally be related to potential ignition from routine vehicle patrols and periodic repairs on the pipeline.

Hydrology and Water Quality

Hydrological features are ubiquitous in California and exist in many locations. All Evaluated Segments would cross some named and unnamed waterbodies. Depending upon the routing, design, and construction methods used during pipeline installation, there may be temporary impacts to these waterbodies and to water quality; however, many of these potential impacts could be reduced through implementation of avoidance and minimization measures and thereby protect the hydrological features and water quality. O&M activities would typically involve routine inspections and preventive maintenance to maintain service reliability, as well as repairs or upgrades over the life of the pipeline. O&M activities for the pipeline would be anticipated to be similar to construction activities with respect to potential impacts on surface waters and water quality, but would occur infrequently and at discrete locations.

All segments would also cross various groundwater basins. Construction and installation of the pipeline may lead to encountering shallow groundwater during construction; however, grading and trenching associated with the pipeline is anticipated to be relatively shallow in depth, and generally above the known elevation of groundwater resources for areas where the pipeline would be installed. O&M activities would require the use of minimal amounts of water for pipeline appurtenances (e.g., valve stations, compressor stations) and testing, but non-groundwater sources would likely be used for this and therefore the O&M activities would likely not impact groundwater supplies.

Additionally, most segments of the Evaluated Segments could cross existing floodplains. Construction activities may temporarily increase the localized risk of flooding, but following construction, it is anticipated that all areas could be returned to their original grade and elevation. O&M activities may increase the localized risk of flooding if the areas above the underground pipelines are not properly graded.

Land Use and Planning

The Evaluated Segments would cross a number of different land uses and lands managed by federal, state, and local agencies, as well as private properties. Angeles Link's pipeline would be installed underground and would not divide a community. Appurtenant facilities, including compressor stations, could also be sited so as not to divide a community.

Depending on where the segments and appurtenant facilities are located, there could be a potential impact related to conflicts with certain applicable land uses, plans, policies, or regulations. As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant local land use plan, policy, or regulation. However, SoCalGas would consult with local agencies regarding land use matters during the siting of such pipeline and appurtenant facilities. This report highlights several land uses, plans, policies, or regulations that could be assessed for consistency with Angeles Link.

Alternatives

This evaluation considers and evaluates project alternatives, including a localized hydrogen hub or other decarbonization options such as electrification, and their environmental impacts consistent with OP 5(e) in the CPUC Phase 1 Decision. The hydrogen delivery alternatives and non-hydrogen alternatives identified for further analysis in the Alternatives Study were reviewed as part of this study and evaluated for the same environmental factors as the Evaluated Segments. Because this analysis did not look at the magnitude of impacts, it was not possible to draw conclusions or rank which alternatives would have the least environmental impacts. Table ES-1 Alternatives Evaluation summarizes the potential environmental impacts of the alternatives based on the assessment criteria.

STAKEHOLDER ENGAGEMENT

The input and feedback from stakeholders, including the Planning Advisory Group (PAG) and Community Based Organization Stakeholder Group (CBOSG) have been informative to the development of the Angeles Link Phase 1 studies. The feedback received through the development of the Environmental Analysis that is addressed in this final report related to various topics, including: (i) the level of detail provided in the report's maps; (ii) the assumption of a 200-foot-wide pipeline corridor area of disturbance for most environmental factors; (iii) safety considerations for hydrogen that may differ from safety considerations for natural gas; and (iv) how potential AMMs may not be specific to unique characteristics of each study area. A summary of how feedback on these topics was incorporated into this Final Report is provided in Chapter 5 – Stakeholder Feedback. In addition, detailed responses to all feedback received are

provided in the Angeles Link quarterly reports submitted to the CPUC and published on SoCalGas's website.[9]

[9] SoCalGas posts its quarterly reports including stakeholder feedback received in its original form and associated responses (SoCalGas 2024b) and submits the reports to the CPUC.

Table ES-1: Alternatives Evaluation

Assessment Criteria	High-Level Assessment
Air Quality and Greenhouse Gas Emissions Conflict with or obstruct implementation of an applicable air quality plan; result in a cumulatively considerable net increase of criteria pollutants; expose sensitive receptors to pollutant concentrations; generate GHG emissions, either directly or indirectly, including conflicts with applicable plans, policies, or regulations for reducing GHG emissions.	• Angeles Link and alternatives are expected to have construction and operational impacts to air quality. • For example, for various alternatives, impacts may occur from construction and operation activities, including pipeline and electric transmission line construction, vehicle miles traveled from truck trips, nautical miles traveled from ships, and from construction of liquefaction and regassification facilities. • Angeles Link and alternatives are expected to have construction and operational impacts related to GHG emissions. • For example, for various alternatives potential impacts are expected to occur from pipeline and electric transmission line construction, vehicle miles traveled from trucks, nautical miles traveled from ships, and construction of liquefaction and regassification facilities.
Biological Resources Direct or indirect impacts to candidate, sensitive, or special status species or modification of their habitat, impacts to any riparian habitat, wetlands, or other sensitive natural community; interference with movement of native resident or migratory fish or wildlife species or with established wildlife corridors; conflict with local policies protecting biological resources, provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved habitat conservation plan.	• Angeles Link and alternatives are expected to have construction and operational impacts to biological resources. • For example, for various alternatives, impacts may occur, including for pipeline and electric transmission line construction, vehicle miles traveled from truck trips, and nautical miles traveled from ships. • For certain construction activities, potential impacts may occur in previously disturbed areas. • Potential impacts during operational phases of certain facilities, such as underground pipelines or electric transmission lines during periodic O&M activities.

Assessment Criteria	High-Level Assessment
Cultural and Tribal Resources Cause substantial adverse change(s) in the significance of historical and/or archaeological resources, or disturbance of human remains; cause a substantial adverse change in the significance of a tribal cultural resource.	• Angeles Link and alternatives are expected to have construction and operational impacts to cultural resources. • For example, for various alternatives, impacts may occur from pipeline and electric transmission line construction. • For certain construction activities, potential impacts may occur in previously disturbed areas. • Potential impacts may occur during periodic operational and maintenance phases of certain facilities, such as underground pipelines or electric transmission lines. • Angeles Link and alternatives may have construction and operational impacts to tribal cultural resources. • For example, for various alternatives, potential impacts may occur in previously disturbed areas, from pipeline and electric transmission line construction, construction of liquefaction and regassification facilities. • Potential impacts during periodic operational and maintenance phases of certain facilities such as underground pipelines or electric transmission lines may occur.
Energy Wasteful, inefficient, or unnecessary consumption of energy resources; conflict with state or local plans for renewable energy or energy efficiency.	• Angeles Link and alternatives are not expected to result in the wasteful, inefficient, or unnecessary consumption of energy. • Potential impacts from alternatives, such as trucking and shipping, may require energy consumption through diesel fuel. However, over time trucks and ships may transition to electric, hydrogen fuel-cells, or lower carbon intensive fuels. • For Angeles Link and some alternatives, operations and maintenance could result in energy consumption. • Angeles Link and certain alternatives may temporarily conflict with state or local plans for renewable energy or energy efficiency during construction. For example, potential conflicts could occur during construction of pipelines,

Assessment Criteria	High-Level Assessment
	vehicle miles traveled from trucks, and nautical miles traveled from ships.
Hazards and Hazardous Materials Include hazardous materials transport, use, or disposal; cause accidental release of hazardous materials; located at a site containing known hazardous materials; located in close proximity to sensitive receptors; interfere with an evacuation plan; located near an airport; located in a fire hazard zone.	• Angeles Link and all of the alternatives are expected to include the transport, use, or disposal of hazardous materials during construction and operations and maintenance. • Angeles Link and all of the alternatives have potential for release of hazardous materials during construction. • Angeles Link and the hydrogen delivery alternatives have a potential for accidental release of hydrogen, which is flammable, during the operational phase. • Angeles Link and all of the alternatives could impact sensitive receptors if equipment and materials are located near sensitive receptors during construction and the operational phase. • Angeles Link and all of the alternatives have a potential to interfere with an emergency evacuation plan during construction. • Depending upon the location of the infrastructure, Angeles Link and the alternatives may be located in areas of existing contamination and/or wildfire hazard zones. • Depending upon the location of the infrastructure, Angeles Link and the alternatives may be located near airports, but Angeles Link and most of the alternatives would not have much aboveground infrastructure taller than 200 feet and could be located away from airports.

Assessment Criteria	High-Level Assessment
Hydrology and Water Quality Cause water quality degradation; groundwater supply decrease or recharge interference; location within flood hazard zones.	• Angeles Link and alternatives are expected to have construction and operational impacts related to hydrology and water quality. • For example, for various alternatives, potential impacts are expected to occur from pipeline construction and construction of liquefaction and regassification facilities. • Construction activities for Angeles Link and alternatives could cause short-term water quality impacts, and/or could potentially conflict with water quality control or ground water management plans. • Construction activities for several facilities, such as underground pipelines, could be constructed in floodplains and/or cause erosion.
Land Use Physically divide a community; conflict with existing plans, policies, or regulations.	• Angeles Link and alternatives could have construction and operational impacts, and associated impacts to communities, related to land use, such as electric transmission lines for the power transmission & distribution or electrification alternatives. • Depending on location of Angeles Link's or the alternatives' facilities, potential conflict could occur with existing land use plans, policies, or regulations.

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1 – INTRODUCTION

On December 15, 2022, the CPUC adopted D.22-12-055 authorizing the establishment of SoCalGas's Memorandum Account to track costs for advancing the first phase (Phase 1) of Angeles Link. Angeles Link is envisioned as a non-discriminatory pipeline system dedicated to public use to transport clean renewable hydrogen from regional third-party production and storage sites to end users in Central and Southern California, including the Los Angeles Basin.

This study was prepared pursuant to the following Ordering Paragraphs (OPs) in the Phase 1 Decision:

- 5(e): How did the planning process consider and evaluate project alternatives, including a localized hydrogen hub or other decarbonization options such as electrification, their costs and their environmental impacts.
- 6(i): Identification and comparison of possible routes and configurations.
- 6(n): Compliance with California environmental law and public policies.

In accordance with Ops 5(e), 6(i), and 6(n), this desktop analysis was conducted to identify and evaluate potential environmental impacts that could result from construction and O&M of a renewable hydrogen pipeline system and to provide a high-level comparison of the potential impacts of that system to the potential impacts of identified alternatives. The analysis relies on the potential pipeline segments identified in the Routing Study. Details regarding all potential appurtenance facilities (including potential compressor stations), the specific location of the Evaluated Segments, or the methods required to construct and operate the Evaluated Segments were not available at this early stage of feasibility analysis. As a result, conventional pipeline construction and O&M activities were assumed for this high-level desktop analysis. The assumptions are further described in Section 1.2 Project Description. The analysis also relied on the alternatives to Angeles Link as identified in the Alternatives Study prepared separately as part of the Angeles Link Phase 1 feasibility studies.

The desktop analysis was guided by the CEQA Appendix G checklist, but it is not a comprehensive CEQA analysis. It is anticipated that CEQA review would be conducted by the lead agency, which is assumed to be the CPUC, once SoCalGas applies for discretionary approvals. Angeles Link may also undergo full environmental review under the NEPA if Angeles Link requires a federal action.

To evaluate the potential environmental impacts of Angeles Link and the identified alternatives, this analysis used the CEQA Guidelines Appendix G checklist as a framework and focused on the following environmental factors: air quality and GHG emissions; biological resources; cultural resources and TCRs; energy; hazards and

hazardous materials; hydrology and water quality; and land use and planning.[10] These resource areas were selected based on the resources that could be evaluated given the preliminary design of the Evaluated Segments (e.g., no final alignment or construction methods) and based on the environmental factors for which the Evaluated Segments are more likely to have impacts.

AMMs related to potential construction and O&M impacts are also included. These measures include best management practices (BMPs) or previous industry-applied measures that could be implemented to avoid or reduce a potential impact. Many of the AMMs presented could be applied to all or most of the geographic settings of a potential pipeline and associated infrastructure, as these AMMs have been used to minimize impacts that may occur on utility-scale construction projects. Where regional or site-specific impacts could be identified (such as for a particular biological species or land use conflict), more targeted AMMs were included. The list of AMMs included is not intended to address every impact anticipated, but rather to provide some potential measures that could be implemented in future phases of Angeles Link. When a preferred pipeline route is identified, additional site-specific AMMs can be developed, including AMMs that may need to be tailored or enhanced to address specific geographic considerations such as densely populated areas. In addition, future CEQA/NEPA analysis is anticipated to identify mitigation measures beyond the AMMs that would further reduce potential environmental impacts.

1.1 APPROACH

SoCalGas prepared a portfolio of studies to assess the feasibility of Angeles Link. The analysis in this study relies on the conceptual pipeline routes identified in the Routing Study and the alternatives identified in the Alternatives Study. This study only evaluates Angeles Link, which is envisioned to be a non-discriminatory pipeline project as further described herein. It does not evaluate third-party production, third-party storage, or end users.

SoCalGas initially identified multiple conceptual pipeline routes for Angeles Link. When combined, these conceptual pipelines traverse approximately 1,300 miles. Based on the Routing Study, SoCalGas identified four preferred route configurations and an additional scenario (Route Variation 1) for Angeles Link that would generally connect potential ARCHES production and offtake sites; connect two SoCalGas segments within ARCHES to support the California H2Hub; connect potential producers and end users as identified by the Production and Demand studies, which includes 1.5 MMTPY of throughput; and account for certain engineering, environmental, and social features along the pipeline route. These route configurations traverse various land types

[10] An evaluation of aesthetics, agriculture/forestry resources, geology/soils, mineral resources, noise, population/housing, public services, recreation, transportation, utilities/service systems, and wildfire was not conducted given the level of project detail for Angeles Link available at this time and the more detailed environmental review that would occur in future phases of Angeles Link.

including, but not limited to, urban areas, rural lands, and mountainous terrain.[11] As described further in the Routing Study, those four preferred pipeline route configurations would comprise a system that totals approximately 450 miles of pipeline.

The Environmental Analysis reviewed the environmental resources that occur along all 1,300 miles of the initial corridors evaluated (inclusive of the four preferred route configurations) at a desktop level. The 1,300 miles of conceptual pipeline routes combined are hereafter referred to as the "Evaluated Segments" that were reviewed in this study. At this stage in the Angeles Link feasibility analysis, the Evaluated Segments are directional in nature. The conceptual routes do not illustrate the specific routes where Angeles Link may be constructed, as specific routes and street-level alignments will be further studied and refined in future phases of Angeles Link. However, while still directional in nature, for purposes of evaluating the potential environmental impacts of Angeles Link, the Environmental Analysis reviewed specific routes drawn on a map so that a geographic information system (GIS) could be used to gather data and facilitate the analysis to the extent possible.

The Routing Study also identifies three zones within Central and Southern California that each reflect different aspects of Angeles Link's contemplated hydrogen delivery system—the Connection Zone, Collection Zone, and Central Zone. The Connection Zone provides opportunities for connection to other hydrogen networks in-state and out-of-state. The Connection Zone includes potential pipeline segments generally located throughout Fresno, Kings, Kern, San Bernardino, Riverside, and Orange counties. The Connection Zone includes areas identified to access clean renewable hydrogen producers in the San Joaquin Valley via Interstate (I-) 5/State Route (SR-) 99, High Desert via I-15, Low Desert via I-10, and Southern Desert via I-40. The Collection Zone provides additional opportunities to collect gas from hydrogen suppliers and supports distribution to offtake to end users in the zone. The Collection Zone includes potential pipeline segments in Mojave, California and follows a path through Kern, Ventura, Los Angeles, Orange, Riverside, and San Bernardino counties. The Central Zone includes the area anticipated to be the highest area of potential offtake (in the Los Angeles Basin) given the concentration of demand from the hard-to-electrify sectors. The Central Zone includes potential pipeline segments located primarily within the southwestern portion of Los Angeles County. The zone is made up of potential pipeline routes extending out from the Collection Zone to the more industrial areas of the Los Angeles Basin, including the ports of Los Angeles and Long Beach.

The Alternatives Study identified a range of alternatives to Angeles Link to evaluate if those alternatives could potentially meet the underlying need for Angeles Link. The Alternatives Study then refined and narrowed the list of alternatives to be carried

[11] As described further in the Routing Study, the additional scenario, referred to as the Route Variation 1, was added to minimize traversing disadvantaged communities in the Los Angeles Basin. Route Variation 1 is not analyzed in this study, as that scenario was identified late in the Phase 1 analyses. Route Variation 1 will be explored in more detail in Phase 2.

forward for further evaluation in this study based on alternatives that met specific criteria. The alternatives identified for further assessment were grouped into two broad categories: hydrogen delivery alternatives and non-hydrogen delivery alternatives. The hydrogen delivery alternatives identified for further evaluation in this study include delivery by truck of hydrogen in liquid form, delivery by truck of hydrogen in gaseous form, shipping of hydrogen in liquid form, shipping of hydrogen converted into methanol, power transmission and distribution (T&D) with in-basin hydrogen production, and a localized hub. The non-hydrogen alternatives identified for further evaluation in this study include systemwide electrification and carbon capture and storage (CCS).[12]

For this Environmental Analysis, the Evaluated Segments were grouped into 13 study areas based on geography, common natural resources, and topographical features. Because at this early stage the location of production facilities, storage areas, appurtenances, and end users are not known, the pipeline segments will inevitably change as engineering progresses. Additionally, as engineering and stakeholder/agency input inform the design of the Evaluated Segments, the data collected for each study area will assist with future routing, feasibility, and constructability considerations. Table 1.1-1: Project Study Areas provides a list of study areas and the segments evaluated in each study area and provides a guide for where the potential impacts associated with the pipeline construction and O&M activities are discussed in Chapter 3 – Environmental Analysis. The study areas are depicted in Figure 1.1-1: Map of Evaluated Segments.

[12] For a full description of the alternatives and methodology used to identify the alternatives to be carried forward for environmental analysis, see the separate Angeles Link Phase 1 feasibility study Project Options & Alternatives Report.

Table 1.1-1: Project Study Areas

Hydrogen Delivery System Zone	Study Area	Segment(s)	Report Chapter
Connection	1A	C (part of ARCHES)	3.1
Collection	1B	B (part of ARCHES)	3.2
Central	2	A, S, T, U, V, and W	3.3
Collection	3A	D	3.4
Collection	3B	J	3.5
Collection	3C	G and I	3.6
Collection	3D	E, L, and M	3.7
Collection	3E	K	3.8
Collection	3F	Y	3.9
Connection	4A	R	3.10
Connection	4B	F	3.11
Connection	4C	H, O, P, and X	3.12
Connection	4D	N and Q	3.13

Figure 1.1-1:
Map of Evaluated Segments

Angeles Link Phase 1
Environmental Analysis

- Interstate
- State Highway
- County Boundary

Study Area

- 1A
- 1B
- 2
- 3A
- 3B
- 3C
- 3D
- 3E
- 3F
- 4A
- 4B
- 4C
- 4D

SoCalGas

INSIGNIA ENVIRONMENTAL

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1.2 PROJECT DESCRIPTION

Angeles Link is envisioned as a non-discriminatory open access pipeline system that is dedicated to public use. The Evaluated Segments would transport clean renewable hydrogen from regional third-party production and storage sites to end users in Central and Southern California, including the Los Angeles Basin (inclusive of the Ports of Los Angeles and Long Beach). This analysis assumes the Evaluated Segments would include the installation of entirely new pipelines and would not include the repurposing of existing pipeline as part of the transportation system. The preferred pipeline routes extend across approximately 450 miles and include pipeline segments within the California ARCHES[13] hydrogen hub (the San Joaquin Valley segment or Segment C in Study Area 1A and Lancaster segment or Segment B in Study Area 1B). The Evaluated Segments would convey clean renewable hydrogen at a pressure ranging from approximately 200 to 1,200 psig and include pipeline diameters up to 36 inches. Angeles Link will be sized to convey approximately 0.5 to 1.5 MMTPY of clean renewable hydrogen over time.

Additionally, Angeles Link would also include permanent appurtenances (e.g., valve stations, compressor stations) as part of the Evaluated Segments, but the locations or size of the appurtenances was not known at the time of this desktop analysis. Angeles Link may also be constructed in stages. The details of the exact construction methods were not known at this early stage of design and quantification of construction and O&M impacts would be conducted at a future phase of project development.[14] For this desktop analysis, the following assumptions were made:

- the pipelines would be located underground and impacts could occur within a 200-foot-wide corridor centered on the pipeline centerline, as some of these areas are likely to be needed for the permanent land rights for the pipeline, disturbed during construction of the pipeline as laydown areas, or needed for future O&M;

- operation activities are considered for a 30-year period for the purposes of the environmental impacts following pipeline construction;

- maintenance activities would be similar to current maintenance practices for natural gas pipelines and appurtenances;

[13] ARCHES is a statewide public-private partnership to build the framework for California's renewable, clean hydrogen hub. In July 2024, ARCHES and U.S. Department of Energy (DOE) announced the signing of a $12.6 billion agreement to build the California hydrogen hub, including the up to $1.2 billion in federal funding that was announced last year when California was selected as a national hub (ARCHES 2024).

[14] As Angeles Link is proposed to include the pipeline transportation system and appurtenant facilities, this high-level desktop analysis does not review potential impacts associated with clean renewable hydrogen production or storage facilities.

- construction would require a temporary workspace varying in width, but typically 100 feet wide, which would be larger than the permanent land rights for the pipeline that would be maintained for O&M and would typically measure between 10 and 50 feet wide;

- pipe would be installed using conventional cross country and urban construction techniques using trenching, backfilling, and restoration to preconstruction conditions;

- pipeline would convey clean renewable hydrogen at a pressure ranging from approximately 200 to 1,200 psig and include pipeline diameters that may be up to 36 inches and sized to convey approximately 0.5 to 1.5 MMTPY of clean renewable hydrogen;

- the Evaluated Segments could rely on two to three compressor stations depending on routing configuration, using approximately 50,000 horsepower (hp) reciprocating compressors per station potentially powered by electricity; and

- pipeline construction would largely result in only temporary impacts, with the exception of appurtenance facilities, including valves, test leads, and compressor stations.

1.2.1 Purpose of Angeles Link

Angeles Link is intended to fulfill several underlying purposes, including the following:

1. In alignment with California's decarbonization goals, CARB's 2022 Scoping Plan for Achieving Net Neutrality, identifies the scaling up of renewable hydrogen for the hard-to-electrify sectors as playing a key role in the State achieving carbon neutrality by 2045 or earlier.[15]

2. To support California's decarbonization goals in the mobility sector, including the Governor's Executive Order N-79-20,[16] which seeks to accelerate the deployment of zero-emission vehicles; CARB's implementation of the Advanced Clean Fleets regulation, which is a strategy to deploy medium- and heavy-duty zero-emission vehicles;[17] as well as the implementation of the March 15, 2021

[15] Details are provided in CARB's 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2024a).
[16] The details on California's decarbonization goals are laid out in the Governor's Executive Order N-79-20 (State of California 2020).
[17] CARB provides details on the implementation of the Advanced Clean Fleets regulation (CARB 2024b)

Advanced Clean Truck regulation,[18] which aims to accelerate a large-scale transition of zero-emission medium-and heavy-duty vehicles.

3. To optimize service to all potential end users in the project area by operating an open access, common carrier clean renewable hydrogen transportation system dedicated to public use.

4. To support improving California's air quality by displacing fossil fuels for certain hard-to- electrify uses, including the mobility sector.

5. To enhance energy system reliability, resiliency, and flexibility as California industries transition fuel usage to achieve the State's decarbonization goals.

6. To enable long duration clean energy storage that can further accelerate renewable development, minimize grid curtailments, and enhance energy system resiliency.

7. To provide a cost effective, transparent, and affordable open access clean renewable hydrogen transportation system at just and reasonable rates.

8. To provide efficient and safe clean renewable energy transportation in support of the State's decarbonization goals.

9. Over time and combined with other current and future clean energy projects and reliability efforts, to help reduce natural gas use served by the Aliso Canyon natural gas storage facility while continuing to provide reliable and affordable energy service to the region.

1.3 ALTERNATIVES

Chapter 4 – Alternatives Analysis compares the transport of hydrogen through pipelines to hydrogen delivery alternatives and non-hydrogen alternatives that were identified in the Alternatives Study for analysis in this study. The analysis includes an assessment of potential impacts based on assumptions for construction and operation activities typically associated with each alternative as well as a comparison to the potential impacts that were identified for the Evaluated Segments.

1.4 ANTICIPATED PERMITS, AUTHORIZATIONS, AND COMPLIANCE WITH ENVIRONMENTAL LAW AND PUBLIC POLICIES

This report provides further details on the potential permits and authorizations that could be required for Angeles Link. Chapter 2 – Methodology and Regulatory Setting of this report describes the federal, state and local laws and public policies that may apply to construction and/or operation of the Evaluated Segments, in accordance with the

[18] CARB provides details on the implementation of the Advanced Clean Truck regulations (CARB 2024c).

Angeles Link CPUC Phase 1 Decision. In addition, an assessment of the permitting approvals that may be required for Angeles Link was performed in High-Level Permitting Analysis. This report together with the High-Level Permitting Analysis demonstrates how Angeles Link would comply with California environmental law and public policies.

2 – METHODOLOGY AND REGULATORY SETTING

2.1 BACKGROUND

This report provides a summary of potential temporary and permanent impacts associated with the construction of the clean renewable hydrogen pipeline system, as well as the potential impacts due to O&M activities of that system. The methodology described in this chapter was applied to the Evaluated Segments and appurtenant facilities in Chapter 3 – Environmental Analysis and to the analysis of alternatives in Chapter 4 – Alternatives Analysis. The desktop analysis presented in this report does not include quantification or detailed impacts from construction and O&M activities, as Angeles Link's specific design and logistics were not known at the time of the analysis. Additionally, the desktop analysis was guided by the checklist provided in CEQA Guidelines – Appendix G to evaluate potential impacts in different environmental factors, but this analysis does not provide a comprehensive CEQA analysis. A complete CEQA and/or NEPA analysis would be conducted by the respective lead agencies, as applicable, at a future phase of Angeles Link.

This desktop analysis evaluated the potential environmental impacts associated with the 1,300 miles of conceptual pipeline routes that individually or together could make up a hydrogen pipeline system and will help inform which segments may be selected as part of the proposed Angeles Link. The Evaluated Segments are divided into 13 study areas. At this stage in the Angeles Link feasibility analysis, the Evaluated Segments are directional in nature. The conceptual pipeline routes do not illustrate the specific routes where Angeles Link may be constructed, as specific routes and street-level alignments will be further studied and refined in future phases of Angeles Link. However, while still directional in nature, for purposes of evaluating the potential environmental impacts of Angeles Link, the Environmental Analysis reviewed specific routes[19] drawn on a map for the informational purposes of the analysis.

Based on the Routing Study analysis, SoCalGas identified four potential preferred routes and an additional scenario (Route Variation 1) that share the general characterization including: connect potential ARCHES production and offtake sites; connect two SoCalGas segments within ARCHES to support the California H2Hub; connect potential regional producers and end users as identified by the Production and Demand studies, which includes 1.5 MMTPY of throughput; and account for certain engineering, environmental, social, and environmental justice features along the potential preferred routes; traverse various land types including, but not limited to, urban areas, rural lands, and mountainous terrain.[20] As described further in the Routing Study,

[19] Conceptual routes are based on routes identified in the Routing Study as of May 2024.

[20] As described further in the Routing Study, the additional scenario, referred to as the Route Variation 1, was added to reduce route mileage through communities considered to be disadvantaged. The Route Variation 1 is not analyzed in this study, as

the four preferred pipeline route configurations would each extend across approximately 450 miles.

The desktop analysis included seven environmental factors that were reviewed to evaluate the potential environmental impacts of Angeles Link and the identified alternatives, including air quality and GHG emissions, biological resources, cultural resources and TCRs, energy, hazards and hazardous materials, hydrology and water quality, and land use and planning. The approximately 1,300 miles of Evaluated Segments and appurtenant facilities were reviewed for potential impacts to resources for each environmental factor. Resources present within the 200-foot-wide corridor[21] centered on the pipeline segments were evaluated or a larger buffer was used for some resource types. An illustration of the 200-foot-wide corridor and buffers used for the desktop analysis are depicted in Figure 2.1-1: Typical Areas Used in the Desktop Analysis.

In addition to the 1,300 miles of Evaluated Segments, the methodology described in this chapter was applied to a high-level analysis of the potential impacts associated with the pipeline appurtenant facilities (i.e., valve stations, compressor stations) discussed in Chapter 3 – Environmental Analysis, Section 3.14 Non-Linear Facilities. While the methodology described in this chapter was generally applied to the analysis of appurtenant facilities, certain aspects of the methodology related to the environmental setting or framework questions related to potential impacts that are based on specific geographic locations could not be applied to the appurtenant facilities given that more information about those facilities is not known at this feasibility stage. More in-depth analysis of the potential impacts associated with the appurtenant facilities would be conducted as more details on the locations and design of those facilities are developed in future phases.

A summary of the regulatory setting highlighting the key laws, regulations, and policies related to each environmental factor is provided in the following sections. Future environmental review pursuant to CEQA and/or NEPA may identify additional laws, regulations, and policies that may apply once Angeles Link's details are further refined. The following subsections also summarize the methodology and assumptions used, as

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that scenario was identified late in the Phase 1 analyses. Alignment and alternative routing configurations for Angeles Link, including Route Variation 1, will be explored in more detail in Phase 2 to address siting elements and potential impacts at a more granular, street-level perspective.

[21] A 200-foot-wide corridor was used to reflect a conservative estimate of a pipeline construction area and work spaces. The area needed to construct a pipeline varies depending on pipeline diameter, available space, and topography and can range from as narrow as 40-feet-wide to 200-feet-wide in steep terrain or where additional temporary workspace is required. Using 200 feet for the construction represents a worse-case scenario, but also captures more resources that are in proximity to the preliminary conceptual pipeline routes.

well as the data used, to evaluate the existing conditions surrounding Angeles Link and potential environmental impacts for each environmental factor.

The magnitude, severity, and significance of potential impacts cannot be determined at this time because potential impacts are generally correlated to specific locations, construction methods, and construction timing, which have not yet been defined at this feasibility level of analysis. Consequently, the analysis identifies whether Angeles Link or the identified alternatives will result in a “potential impact” or “no impact” for each environmental factor. In general, typical impacts that would be anticipated to occur as a result of construction and O&M activities are detailed in Study Area 1A and/or Study Area 1B. Those impacts generally reflect typical impacts that would apply to Evaluated Segments in other study areas. Where Evaluated Segments may have different potential impacts based on their location, those impacts are otherwise noted in the applicable study area Impact Discussion section for the relevant environmental factors. When no impact is identified, no further description is included in this report.

Given the feasibility stage of the design of Angeles Link and the identified alternatives, the analysis summarized in this report does not 1) determine if a potential impact for each environmental factor is significant from the CEQA/ NEPA perspective nor address the magnitude of the potential impact; 2) capture all resource areas that would be evaluated in a CEQA/NEPA document; or 3) account for Angeles Link’s or the alternatives’ benefits, including those benefits from the use of the clean energy delivered by the project or alternative. Chapter 3 – Environmental Analysis includes potential AMMs that could be incorporated into the design and implementation of Angeles Link that could reduce overall impacts. The development of the potential AMMs presented in this document are described in more detail in Section 2.1.1 Potential Avoidance and Minimization Measures.

2.1.1 Potential Avoidance and Minimization Measures

As noted previously, the Evaluated Segments were divided into 13 study areas. Potential environmental impacts within the 13 study areas were evaluated according to seven environmental factors: air quality and GHG emissions, biological resources, cultural resources and TCRs, energy, hazards and hazardous materials, hydrology and water quality, and land use and planning. For the potential impacts identified, potential AMM(s) to reduce each impact were identified. Some environmental impacts, such as fugitive dust, are anticipated to occur in all study areas. Potential AMMs that were determined to apply universally were only included in Study Area 1A, Section 3.1.2.3 Potential Avoidance and/or Minimization Measures, with a reference to those potential AMMs included in the other study areas.

While a potential AMM listed in Study Area 1A may be applicable to all of the study areas, that AMM alone may not be adequate to minimize the potential impact in all

study areas.[22] As a result, when the locations of Angeles Link components are further refined, additional AMMs could be developed to address potential impacts that are able to be quantified based on established CEQA thresholds of significance, including potential AMMs that may need to be tailored or enhanced to address specific geographic considerations such as densely populated areas.

When impacts were identified in one study area and did not apply to other study areas, (e.g., impacts to endemic species or regional land use plans), region-specific AMMs were included for each study area.

[22] As stated herein, potential environmental impacts identified in this report have been determined to have a “potential impact” or “no impact” based on the methodology described in Section 2 – Methodology and Regulatory Setting and are not further quantified. The magnitude, severity, and significance of potential impacts cannot be determined at this time because potential impacts are generally correlated to specific locations, construction methods, and construction timing, which have not yet been defined at this feasibility level of analysis. However, AMMs have been identified where there is a “potential impact” that could be minimized by applying the AMMs. Level of impact significance and extent of potential minimization of an impact would be determined during a future phase of Angeles Link during the CEQA/NEPA environmental review process.

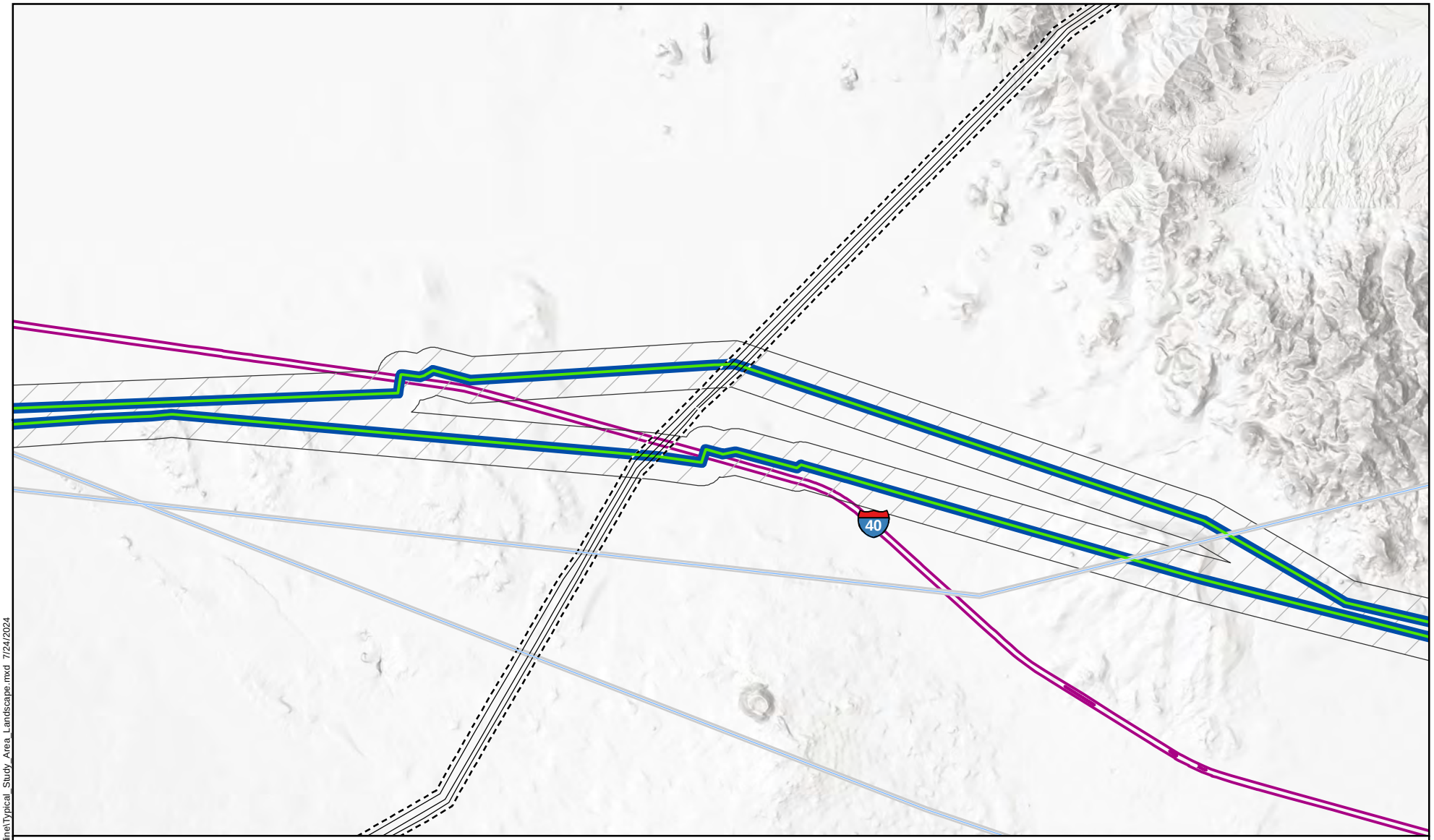

Figure 2.1-1: Typical Areas Used in Desktop Analysis

Angeles Link Phase 1
Environmental Analysis

- Existing Natural Gas Pipeline
- Existing Electrical Transmission Line
- Proposed Segment/Pipeline Centerline
- 200-Foot-Wide Pipeline Corridor
- Buffer Varies in Width by Resource Studied
- Existing 50-Foot-Wide Natural Gas Pipeline Maintenance Corridor
- Existing Transmission Line Maintenance Corridor
- Caltrans Interstate Maintenance Corridor

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2.2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

2.2.1 Regulatory Setting

The federal Clean Air Act (CAA) regulates air emissions from both stationary sources (e.g., power plants and gas compressor facilities) and mobile sources (e.g., motor vehicles). Under the CAA, the U.S. Environmental Protection Agency (EPA) regulates emissions of an extensive list of hazardous air pollutants and has set National Ambient Air Quality Standards (NAAQS) for the following six criteria air pollutants:

- ozone (O_3);
- particulate matter (PM), including:
  - inhalable PM (i.e., PM that is less than 10 microns in diameter [PM_{10}]),
  - fine PM (i.e., PM that is less than 2.5 microns in diameter [$PM_{2.5}$]);
- carbon monoxide (CO);
- nitrogen dioxide (NO_2);
- sulfur dioxide (SO_2); and
- lead.

Under the CAA, each state is required to develop and maintain a comprehensive State Implementation Plan (SIP) for each criteria air pollutant that exceeds NAAQS that includes a plan to attain NAAQS. Within California, the California Air Resources Board (CARB) as well as local air districts and agencies develop SIP elements, and CARB reviews the applicable SIP elements and forwards them to the U.S. EPA for approval.

CARB is a part of the California EPA, a state department that develops, implements, and enforces environmental laws that regulate air, water, and soil quality; pesticide use; and waste recycling and reduction within California. CARB also conducts research and defines the California Ambient Air Quality Standards (CAAQS), compiles emissions inventories, develops suggested control measures, and provides oversight of local programs. The Mulford-Carrell Air Resources Act divided California geographically into Air Pollution Control Districts and Air Quality Management Districts, also known as “air districts.” These districts are county or regional governing authorities that have primary responsibility for controlling air pollution from stationary sources and implementing the local SIP elements within their respective jurisdictions. Attachment A: Air Basins and Air Districts Maps depicts the proposed study areas and segments of Angeles Link in relation to California’s air basins and air districts.

The California Clean Air Act (CCAA) of 1988 requires non-attainment areas to achieve and maintain the CAAQS by the earliest practicable date and local air districts to develop plans for attaining the state’s ozone, carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2) limits. The CCAA also requires that air districts assess their progress toward attaining the air quality standards every 3 years.

AB 32, the California Global Warming Solutions Act of 2006, codified the state’s GHG emissions target by requiring that the state’s global warming emissions be reduced to 1990 levels by 2020. Since being adopted, CARB, the California Energy Commission

(CEC), CPUC, and the California Building Standards Commission have been developing regulations that help meet the goals of AB 32. The AB 32 Scoping Plan identifies specific measures to reduce GHG emissions to 1990 levels by 2020 and requires CARB and other state agencies to develop and enforce regulations and other initiatives for reducing GHGs. Specifically, the AB 32 Scoping Plan articulates a key role for local governments, recommending they establish GHG reduction goals for their municipal operations and the community that are consistent with those of the state.

Senate Bill (SB) 32 (2016) requires CARB to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 level by 2030, consistent with the target set forth in Executive Order B-30-15. CARB adopted California's 2017 Climate Change Scoping Plan (2017 Scoping Plan) in November 2017 to meet the GHG reduction requirement set forth in SB 32. It proposes continuing the major programs of the AB 32 Scoping Plan, including cap-and-trade regulation; the Low Carbon Fuel Standard; more efficient cars, trucks, and freight movement; Renewables Portfolio Standard (RPS); and reducing CH_4 emissions from agricultural and other wastes. The 2017 Scoping Plan also addresses for the first time the GHG emissions from natural and working lands in California.

2.2.2 Literature and Database Review

Sources of data for this desktop analysis included the following:

- California Air Basins (CARB 2019a), and
- California Districts (CARB 2019b).

2.2.3 Definitions

Discussions of air quality and GHGs contained in this report include the use of technical terminology. For the purposes of this desktop analysis, the subsections that follow define criteria air pollutants and GHGs.

2.2.3.1 Criteria Air Pollutants

O_3, PM_{10}, $PM_{2.5}$, CO, NO_2, SO_2, and lead are all criteria air pollutants that are regulated in California. Non-methane (CH_4) volatile organic compounds (VOCs), also referred to as reactive organic gases (ROGs), are also regulated as precursors to the formation of O_3. These criteria air pollutants are discussed in the subsections that follow.

Ozone

O_3 is a colorless gas that is not directly emitted as a pollutant but is formed when hydrocarbons and NO_x react in the presence of sunlight. Naturally occurring O_3 occurs within earth's atmosphere and helps protect the earth from ultraviolet radiation from the sun. However, ground-level O_3 formation can cause a variety of environmental and health problems. Low wind speeds or stagnant air mixed with warm temperatures typically provide optimum conditions for the formation of ground-level O_3, but this formation does not occur quickly; O_3 concentrations often peak downwind of the

emission source. Because it impacts a larger area rather than simply occurring around the emission source, O_3 is of regional concern.

Particulate Matter

PM, which is defined as particles suspended in a gas, is often a mixture of substances, including metals, nitrates, organic compounds, and complex mixtures (e.g., diesel exhaust and soil). PM can be traced to both naturally occurring and human-caused sources. The most common sources of natural PM are dust and fires, while the most common human-caused source is the combustion of fossil fuels. PM is often grouped into two categories—PM_{10} and $PM_{2.5}$.

Carbon Monoxide

CO is a colorless, odorless, and tasteless gas that is directly emitted as a byproduct of combustion. CO concentrations tend to be localized to the emission source, and the highest concentrations are associated with cold, stagnant weather conditions.

Nitrogen Dioxide

NO_2 is a form of NO_x, which is a generic name for the group of highly reactive gases that contain nitrogen and oxygen in varying amounts. Many types of NO_x are colorless and odorless. However, when combined with particles in the air, the common pollutant NO_2 can often be seen as a reddish-brown layer over many urban areas.

NO_2 forms when fuel is burned at high temperatures. Typical human-caused sources of NO_2 include motor vehicles; fossil-fueled electricity generation utilities; and other industrial, commercial, and residential sources that combust fuels. As discussed previously, O_3 is formed when NO_x and hydrocarbons react with sunlight, so NO_x can further exacerbate issues associated with ground-level O_3.

Sulfur Dioxide

SO_2 is a form of sulfur oxide (SO_x) that is formed when sulfur-containing materials are processed or burned. SO_x sources include industrial facilities (e.g., petroleum refineries, cement manufacturing, and metal-processing facilities), locomotives, large ships, and some non-road diesel equipment.

A wide variety of environmental impacts are associated with SO_2 because of the way it reacts with other substances in the air.

Volatile Organic Compounds

VOCs (or ROGs) are a group of chemicals that react with NO_x and hydrocarbons in the presence of heat and sunlight to form O_3. Examples of VOCs include gasoline fumes and oil-based paint fumes. This group of chemicals does not include CH_4 or other compounds determined by the U.S. EPA to have negligible photochemical reactivity.

2.2.3.2 Greenhouse Gases

Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), CH_4, and nitrous oxide (N_2O). These gases allow solar radiation (i.e., sunlight) into earth's atmosphere, but prevent radiative heat from escaping, thus warming earth's atmosphere.

GHG emissions from human activities, such as burning fossil fuels for electricity production or industrial uses, and vehicle use, have elevated the concentration of these gases in the atmosphere. Different GHGs have varying global warming potentials. Global warming potential is the effectiveness of a gas or aerosol to trap heat in the atmosphere. According to the U.S. EPA, global warming potential is a "measure of the total energy that a gas absorbs over a particular period of time (usually 100 years), compared to carbon dioxide" (U.S. EPA 2023a). A shorter period of time (20 years) can be utilized to reflect the impact of shorter-lived gases, such as CH_4. The reference gas for global warming potential is CO_2, which has a global warming potential of one. The other main GHGs that have been attributed to human activity are CH_4 and N_2O. These GHGs also have different atmospheric lifetimes, meaning they remain in the atmosphere for different amounts of time. Table 2.2-1: Global Warming Potentials of GHGs presents the global warming potential of common GHGs over a 20-year and 100-year time horizon. GHGs are typically calculated and reported based upon how much energy the emissions of one metric ton of the particular gas would absorb as compared to one metric ton of CO_2 and is also known as their carbon dioxide-equivalent emissions (CO_2e).

Table 2.2-1: Global Warming Potentials of GHGs

GHG	Global Warming Potential Over 20 Years	Global Warming Potential Over 100 Years
CO_2	1	1
CH_4	84	28
N_2O	264	265

Source: IPCC 2014

2.2.4 Environmental Setting

To characterize existing conditions within each study area, each applicable air district's network of air quality monitoring stations, current attainment status with applicable NAAQS and CAAQS, and any available SIPs were reviewed.

2.2.5 Impact Analysis

The potential impacts from the Evaluated Segments were identified by performing a qualitative assessment of potential impacts to air quality and from GHG emissions for the conceptual pipeline routes in each study area that could:

- conflict with or obstruct implementation of the applicable air quality plan;

- result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or state ambient air quality standard;

- expose sensitive receptors to substantial pollutant concentrations;

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;

- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.

The construction and O&M activities were classified as having either a potential impact or no impact associated with air quality and GHG emissions. Using the framework questions listed previously as a guide, a preliminary determination was made that there could be a potential impact to air quality and/or from GHG emissions in any of the following cases:

- an air basin has a status of non-attainment under applicable standards for ambient air quality;
- construction or O&M equipment could be powered by combustion-based engines or cause dust emissions; and
- the activities could result in leakage of hydrogen gas.

AMMs that could reduce potential impacts to air quality and GHG emissions were also identified.

Not all of the CEQA Appendix G checklist air quality and GHG emissions questions were evaluated in the desktop analysis because there was not enough publicly available data to assess the resources or the level of detail of the analysis would be too granular at this high-level feasibility stage. For example, for air quality, the desktop analysis did not assess whether the Evaluated Segments could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. It is anticipated that this CEQA Appendix G checklist question would be evaluated during the environmental review in a future phase.

2.3 BIOLOGICAL RESOURCES

2.3.1 Regulatory Setting

The federal Endangered Species Act (ESA) protects plants, aquatic organisms, and wildlife that are listed as endangered or threatened by the USFWS and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries). The ESA prohibits take of endangered wildlife without incidental take approval from USFWS or NOAA Fisheries. Section 7 of the ESA requires federal agencies to consult with USFWS and/or NOAA Fisheries for any federal undertaking that may adversely affect an ESA-listed species or critical habitat. For plants, this statute governs the removal and harm to any listed plant on federal land, as well as

removal in violation of state law on non-federal land. Through Section 10 of the ESA, private parties may develop a Habitat Conservation Plan (HCP) to address incidental take of federally listed species. Additionally, several federal land management agencies have developed resource management plans to ensure conservation of biological resources under their jurisdiction and to minimize potential impacts associated with undertakings on their land.

In California, the California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA), which generally parallels the main provisions of the ESA. Section 2080 of the California Fish and Game Code prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Additionally, some fully protected state species may not be taken or possessed at any time pursuant to the California Fish and Game Code. CEQA also requires consideration of the potential impacts of a project on the movement of native or migratory fish and on established native or migratory wildlife corridors and nursery sites.

Special federal protections are provided for bird species in the U.S. The federal Bald and Golden Eagle Protection Act (BGEPA) prohibits take of bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) and their parts, eggs, or nests without a permit issued by the USFWS. Other federal and state laws also apply to migratory bird species, bird species that have a high conservation priority, and native bird species in California; however, those species were not evaluated in this desktop analysis as they are not fully protected or listed as threatened or endangered by ESA or CESA and measures can be implemented to avoid or minimize, impacts to those species during Angeles Link activities. Potential impacts to bird species would be further evaluated during the CEQA/NEPA environmental review process, as applicable.

Within California, the California Fish and Game Commission also has the authority to designate native plants as “endangered” or “rare” and to protect them from take under the Native Plant Protection Act (NPPA), which is administered by CDFW. The NPPA stipulates that no person may take or possess any endangered or rare native plant, or any part or product thereof. CDFW also administers the Western Joshua Tree Conservation Act, which protects the western Joshua tree (*Yucca brevifolia*) from take and provides for the conservation of Joshua tree habitat.

Impacts to sensitive habitats and vegetation communities (e.g., riparian, wetlands) within California are regulated by several agencies, including the U.S. Army Corps of Engineers (USACE), CDFW, and the State Water Resources Control Board (SWRCB) (through the Regional Water Quality Control Boards [RWQCBs]). SWRCB regulatory authority is discussed in Section 2.7 Hydrology and Water Quality. An entity may be required to secure a lake and streambed alteration agreement from CDFW for particular activities, such as water diversions, alterations to a waterbody, or disposal of any debris, waste, or other material in regulated waterbodies. More information on this requirement is found in Section 2.7 Hydrology and Water Quality. The California Coastal Commission (CCC) has regulatory authority over activities conducted within the California Coastal Zone and an entity is required to secure a coastal development

permit from the CCC or a local jurisdiction with an approved Local Coastal Program (LCP) prior to conducting work within the California Coastal Zone. As part of this process, the CCC would evaluate potential impacts to biological resources.

The CDFW also administers the Natural Community Conservation Planning Act to conserve natural communities while also facilitating compatible land uses and allowing for the take of plants under an approved NCCP. CEQA also requires consideration of the potential impacts of a project on sensitive natural communities.

2.3.2 Literature and Database Review

2.3.2.1 Datasets

The following datasets were consulted for this desktop analysis:

- Areas of Conservation Emphasis (ACEs) (CDFW 2019a);
- Areas of Critical Environmental Concern (ACECs) (Bureau of Land Management [BLM] 2023);
- California Coastal Zone boundary (CCC 2023);
- California Natural Diversity Database (CNDDB) (CDFW 2023a);
- ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023a);
- Environmental Conservation Online System for Threatened and Endangered Species Dataset (USFWS 2023b);
- Essential Fish Habitat (EFH) Mapper (NOAA Fisheries 2023a);
- ESA Critical Habitat Mapper (NOAA Fisheries 2023b);
- HCP areas and NCCP areas (CDFW 2020, 2022);
- National Wetlands Inventory (NWI) (USFWS 2023c);
- Rare Plant Inventory (RPI) from (California Native Plant Society [CNPS] 2023);
- information on California plants for education, research, and conservation from the Calflora Database (Calflora 2023); and
- a natural community vegetation and land cover data layer compiled using the following data sources:
  - CAL FIRE Fire and Resource Assessment Program (FRAP) [CAL FIRE 2023],
  - Vegetation Classification and Mapping Program (VegCAMP) (CDFW 2023b), and
  - other data sets as necessary (e.g., BLM Desert Renewable Energy Conservation Plan [DRECP]).

2.3.2.2 Plans

The following plans were consulted for this desktop analysis.

Bureau of Land Management Resource Management Plans

BLM land use plans, also called resource management plans, establish goals and objectives to guide future land and resource management actions implemented by the

BLM. These plans may also designate ACECs where special management attention is needed to protect important historical, cultural, and scenic values, or fish and wildlife or other natural resources. Unique goals, objectives, management actions, and allowable uses may also be established for ACECs (BLM 2023a):

- Bakersfield Resource Management Plan: This plan provides guidance for the management of about 400,000 acres of public land and 1.2 million acres of federal mineral estate administered by the BLM located in an eight-county region of southern-central California (BLM 2014).

- Central Coast Resource Management Plan: This plan provides guidance for the management of approximately 793,000 acres of BLM-administered land located in Fresno, Monterey, and San Benito counties (BLM 2021a).

- Sierra Resource Management Plan: This plan provides guidance for the management of approximately 300,000 acres of BLM-administered land located in the Sierra/Mother Lode Field Office Planning Area (BLM 2021b).

- Southern Diablo Mountain Range and Central Coast of California Resource Management Plan: This plan provides guidance for the management of approximately 274,000 acres of public land administered by the BLM located in the seven-county planning area (BLM 2007).

- California Desert Conservation Area (CDCA) Plan: This plan provides guidance for the management of about 12 million acres of public land administered by the BLM within the 25-million-acre plan area and located in Inyo, Kern, San Bernardino, Riverside, Imperial, San Diego, and Los Angeles counties (BLM 2021c).

- South Coast Resource Management Plan: This plan provides guidance for the management of about 296,000 acres of public land administered by the BLM located in the five-county planning area in San Diego, Riverside, San Bernardino, Los Angeles, and Orange counties (BLM 2021d).

- Lake Havasu Resource Management Plan: This plan provides guidance for the management of about 1.3 million acres of public land administered by the BLM within the 2.1-million-acre planning area located in portions of Mohave, La Paz, Yavapai, and Maricopa counties in Arizona and in San Bernardino County in California (BLM 2021d).

- Coachella Valley Plan: The Coachella Valley Plan amends the 1980 CDCA Plan. The Proposed Plan and Final Environmental Impact Statement (EIS) provides for multiple use and sustainable development of the public lands while making progress towards healthy, properly functioning ecosystems, provides for the recovery of federal and state listed species, manages sensitive species to avoid future listing, provides recreational opportunities on public lands, makes available mineral and energy resources on public lands, and facilitates land management

consistency, management effectiveness, and cost efficiency across jurisdictional boundaries through collaboration with local governments of the Coachella Valley, state and other federal agencies, Indian tribes, and private entities. The planning area is approximately 1.2 million acres of which 28 percent (approximately 337,000 acres) is managed by BLM (BLM 2002).

- DRECP: This plan was coordinated between CEC, CDFW, BLM, and USFWS. The plan was developed to protect important ecological resources on 10.8 million acres of public land within the Mojave Desert and Colorado/Sonoran Desert area in southeastern California. The plan identifies areas in the desert that are appropriate for utility-scale development of renewables and provides for a streamlined permitting process, while also protecting areas for long-term conservation and management of covered species, as well as protection of natural resources, recreational areas, and scenic values (BLM 2016). The DRECP amended the CDCA Plan, Bishop Resource Management Plan, and the Bakersfield Resource Management Plan.

Habitat Conservation Plans and Natural Community Conservation Plans

HCPs and NCCPs are voluntary plans that often include private and public partners and can serve as the basis for allowing lawful covered activities that may result in incidental take of covered species and their habitat. These plans typically include measures to sustain and restore species and their habitat in designated areas within the planning area. HCPs typically include incidental take coverage from USFWS for federally listed, candidate, or at-risk species, while NCCPs typically include incidental take coverage from CDFW for covered species. Within the HCP or NCCP area, specific areas are often designated for conservation of species and habitat and/or mitigation for covered activities. The location of these conservation or mitigation areas could impact the pipeline route since construction of Angeles Link could conflict with the long-term goals and objectives of those areas. The HCPs and NCCP areas reviewed for this desktop analysis included those covered by the following plans:

- Aera Southwest San Joaquin Valley NCCP/HCP: This NCCP/HCP is currently in the planning stage to cover the San Joaquin Valley for Aera Energy, an oil producer in California. "…The Planning Area…in the Plan covers approximately 1,950,891 acres in Kern, Kings, and Fresno Counties" (CDFW 2022). This NCCP/HCP includes potential goals of allowing Aera Energy's covered activities while also contributing to the recovery of upland species in the San Joaquin Valley and utilizing significant portions of Aera Energy's land holding in the southwest San Joaquin Valley as conservation lands (CDFW 2020).

- Coachella Valley Multiple Species NCCP/HCP: This NCCP/HCP is currently in the implementation stage. It was amended in August 2016 to add an additional 770 acres "…to the Plan's Conservation Areas and an additional approximately 200 acres would be contributed by Local Permittees increasing the total Reserve Assembly to 746,100 acres" (CDFW 2022). This NCCP/HCP allows for multiple applicants to conduct covered activities under the plan.

- Orange County Transportation Authority (OCTA) NCCP/HCP: This NCCP/HCP is currently in the implementation stage. “The OCTA NCCP/HCP is…intended to complement existing conservation planning efforts of the County of Orange Central and Coastal NCCP/HCP … and the Orange County Southern Subregion HCP… and to complement other existing large blocks of protected land in the County…” The Plan includes “…[seven] Preserves [which] total…1,296 acres” (CDFW 2022).

- Town of Apple Valley Multi-Species Habitat Conservation Plan (MSHCP)/NCCP: This NCCP/HCP is currently under the preparation stage to cover the Town of Apple Valley, which is located in the “…southwestern portion of San Bernardino County” in California. “The Town intends for the MSHCP/NCCP to yield numerous benefits for the Town in addition to natural resource conservation, including greater regulatory efficiency, streamlining, and certainty” (CDFW 2022); and

- Western Riverside County Multiple Species NCCP/HCP: This NCCP/HCP is currently in the implementation stage. The plan “…encompasses 1.26 million acres and includes all unincorporated County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional limits of the Cities in western Riverside County….” In addition, “…the MSHCP will provide large contiguous blocks of habitat to more effectively ensure the survival of targeted endangered, threatened and rare species” (CDFW 2022).

2.3.3 Definitions

For the purposes of this desktop analysis the following definitions were used.

2.3.3.1 Protected Species

For the purposes of this analysis, the following are considered protected species:

- species listed as (or candidates/proposed for listing as) threatened or endangered under the ESA;
- bald eagles and golden eagles and any of their parts, eggs, or nests, as outlined under the BGEPA;
- species listed as (or candidates for listing as) threatened or endangered under the CESA;
- CDFW fully protected species defined under Fish and Game Code Sections 3511, 4700, 5050, and 5515; and
- Joshua trees protected under the Western Joshua Tree Conservation Act.

2.3.3.2 Sensitive Natural Communities

For the purposes of this analysis, the following are considered sensitive natural communities:

- sensitive natural communities are those defined on the CDFW list of Sensitive Natural Communities (CDFW 2023c);

- any riparian, wetlands, or vernal pool habitats that would be crossed by Angeles Link; and
- Environmentally Sensitive Habitat Areas (ESHAs) identified within the California Coastal Zone and as designated in any LCPs.

    - ESHAs within the California Coastal Zone are defined in PRC §30107.5 as "…any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."

2.3.3.3 Special Management Areas

For the purposes of this analysis, the following are considered special management areas:

- USFWS- or NOAA Fisheries-designated critical habitat;
- BLM-designated ACECs;
- plan areas of HCP/NCCPs; and
- EFH Mapper, where EFH "includes all types of aquatic habitat where fish spawn, breed, feed, or grow to maturity…" In addition, a subset of EFH, Habitat Areas of Particular Concern, is designated by each regional fishery management council and meets the following conditions:

    - major ecological functions,
    - sensitivity to decline,
    - stress from development, and
    - rare habitat (NOAA Fisheries 2022).

2.3.3.4 Potential to Occur

The potential to occur for protected wildlife species is defined as follows and based upon multiple data sources:

- Likely: if the segment centerline is within 0.25 mile of a CNDDB occurrence of the species, USFWS- or NOAA Fisheries-designated critical habitat for the species, or CDFW California Wildlife Habitat Relationship (CWHR) System predicted suitable habitat with moderate to high potential for the species.
- Unlikely: if the segment centerline is within 0.25 mile of the range[23] for the species but is not within 0.25 mile of a CNDDB occurrence of the species,

[23] Species range data were collected from sources including ECOS and CWHR. These data were not available for Joshua tree (*Yucca brevifolia*), Belding's savannah sparrow

USFWS- or NOAA Fisheries-designated critical habitat for the species, or CWHR predicted suitable habitat with a moderate to high potential for the species.

- Does not occur: if the segment centerline is 0.25 mile or greater from the known range of the species.

The potential to occur for protected plant species is defined as follows and based upon multiple data sources:

- Likely: if the segment centerline is within 0.25 mile of a CNDDB occurrence of the species, USFWS designated critical habitat for the species, or mapped vegetation alliance of the species (i.e., for Joshua tree).

- Unlikely: if the segment centerline is within 0.25 mile of the range of the species but is not within 0.25 mile of a CNDDB occurrence of the species, USFWS designated critical habitat for the species, or mapped vegetation alliance of the species (i.e., for Joshua tree).

- Does not occur: if the segment centerline is 0.25 mile or greater from the known range of the species.

2.3.3.5 Wildlife Corridors

For the purposes of this analysis, the following are considered wildlife corridors:

- perennial rivers, streams, or waterways that can be used by aquatic species; and

- the following CDFW-identified rankings of ACE habitat connectivity, which rank the level of connectivity and conservation urgency, with the highest ranks associated with essential corridors and linkages:

    - Rank 1 - Limited Connectivity Opportunity,

(*Passerculus sandwichensis beldingi*), green turtle (*Chelonia mydas*), Tracy's eriastrum (*Eriastrum tracyi*), razorback sucker (*Xyrauchen texanus*), Santa Ana sucker (*Catostomus santaanae*), unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), or Temblor legless lizard (*Anniella alexanderae*). For Joshua tree, the range of Joshua tree in California as interpreted by the CDFW was used (CDFW 2024). For Belding's savannah sparrow, NWI features with a code of E2USN, E2EM1N, and E2EM1P plus a one-mile buffer was used as a proxy for the species' suitable habitat of salt marshes. For Tracy's eriastrum, the CNPS RPI was queried for U.S. quadrangles with records of this species overlapping Angeles Link (CNPS 2023). For razorback sucker, the Colorado River was used as the range. For Santa Ana sucker, the Santa Ana River and Santa Clarita River were used as the range. For the unarmored threespine stickleback, the Santa Clarita River was used as the range. For the Temblor legless lizard, the range was digitized from the petition for listing of the species (Center for Biological Diversity [CBD] 2021).

- Rank 2 - Large Natural Habitat Areas,
- Rank 3 - Connections with Implementation Flexibility,
- Rank 4 - Conservation Planning Linkages, and
- Rank 5 - Irreplaceable and Essential Corridors.

2.3.4 Environmental Setting

2.3.4.1 Vegetation Communities

Vegetation community data were used to estimate the amount of existing habitat types that would be crossed by the pipeline and that would occur within the 200-foot-wide pipeline corridor. Vegetation communities were described using the CWHR classification system (CDFW 2023d), which classifies vegetation communities according to 59 habitat classifications and vegetation descriptions. The CWHR system was developed with the goal of providing credibility to wildlife analysis and resource management decisions and identifying habitat types important to wildlife. This system generally approximates the association level of vegetation classification, and the habitats are grouped according to vegetative dominance or key characteristics important to wildlife (Mayer and Laudenslayer 1988). The CWHR classification system can be translated to other common vegetation classification systems such as the Manual of California Vegetation or the National Vegetation Classification System.

An initial estimate of the amount of habitat that could occur within the 200-foot-wide corridor around the segment centerlines was calculated based upon the CAL FIRE FRAP (CAL FIRE 2023) and VegCAMP (CDFW 2023b) vegetation community data, and sensitive natural communities were further identified.

2.3.4.2 Protected Species

Protected species occurring within 0.25 mile of where the pipeline would be located were evaluated for their potential to occur near the project. The 0.25-mile buffer on either side of the segment centerline was used to select element occurrences from the CNDDB to develop a protected species list for each study area and segment for this desktop analysis. However, for bald eagles and golden eagles, a one-mile buffer was used. Only CNDDB element occurrences more recent than 30 years (i.e., any records occurring after January 1, 1993) were considered for this desktop analysis. This analysis considered threatened, endangered, and/or fully protected species, or species that were proposed for listing or were candidates for listing prior to January 2024.

2.3.4.3 Special Management Areas

Special Management Areas, including critical habitat, ACECs, and HCP/NCCP areas were evaluated to understand the length and area that the pipeline and 200-foot-wide corridor could cross within each of these Special Management Areas.

2.3.4.4 Wildlife Corridors

An initial assessment of potential impacts from the Evaluated Segments on any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors was assessed by evaluating the CDFW ACE ranked habitat

connectivity hexagons. The assessment includes the length of ACE polygon rankings that would be crossed by the segment. The ACE dataset summarizes terrestrial connectivity for mapped corridors and linkages and the adjacent areas of large, contiguous, natural areas. The connectivity hexagons each have an area of 2.5 square miles and are ranked from 1 to 5 based upon the conservation importance of connectivity, with 1 representing the lowest-value areas with limited connectivity opportunities and 5 representing the highest-value areas that are irreplaceable and essential wildlife corridors (CDFW 2019b). Streams and waterways were also generally assumed to provide corridors for aquatic species.

2.3.5 Impact Analysis

To assess potential impacts to biological resources, this desktop analysis used existing, publicly available geographic information system (GIS) data to identify or estimate the biological resources that would be crossed by the pipeline segments and 200-foot-wide corridor, including protected species, sensitive natural communities, special management areas, and wildlife corridors, as defined in Section 2.3.3 Definitions.

The potential impacts associated with the Evaluated Segments were identified by performing a qualitative assessment of potential impacts to biological resources for the Evaluated Segments in each study area that could:

- 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 CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- have a substantial adverse effect on federally or state-protected wetlands (including, but not limited to, marsh, vernal pool, or coastal) through direct removal, filling, hydrological interruption, or other means;
- 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; or
- conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, state, or federal conservation plans.

The construction and O&M activities were classified as having either a potential impact or no impact associated with biological resources. Using the framework questions listed previously as a guide, a preliminary determination was made that there could be a potential impact to biological resources in any of the following cases:

- a protected species was likely to occur within the 0.25-mile buffer of the Evaluated Segment(s);

- a sensitive natural community, such as a riparian or wetland vegetation community, was present within the 200-foot-wide corridor and likely to be considered a sensitive natural community;

- Rank 1-5 habitat connectivity areas or waterways that may provide habitat for protected species could be crossed by the Evaluated Segment(s) within the 200-foot-wide corridor; and

- HCPs, NCCPs, and/or other special management area boundaries were crossed by the Evaluated Segment(s).

AMMs that could reduce impacts to biological resources were also identified for any potential impacts.

Additional field verification for the presence or absence of protected species would be a component of future environmental analysis. Further research regarding the HCP/NCCPs will need to be performed to confirm their status and applicability to Angeles Link and any restrictions on new pipeline construction through designated conservation, mitigation, or preserve areas, or other applicable policies. Lastly, as the ACE wildlife connectivity polygons cover a large area, further field surveys or additional research will need to be conducted to identify the particular locations of wildlife corridors or geographic areas serving as part of the wildlife corridor.

Not all of the CEQA Appendix G checklist biological resources questions were evaluated in the desktop analysis because there was not enough publicly available data to assess the resources or the level of detail of the analysis would be too granular at this high-level feasibility stage. For example, the desktop analysis did not assess whether the Evaluated Segments could conflict with local policies or ordinances protecting biological resources, such as tree preservation policies or ordinances. It is anticipated that this CEQA Appendix G checklist question would be evaluated during the environmental review in a future phase.

2.4 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

2.4.1 Regulatory Setting

Cultural resources are protected by the federal National Historic Preservation Act (NHPA), which requires that any federal agencies consider the effects of their undertakings on historical properties that are eligible for listing on the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to consult with the State Historic Preservation Officer (SHPO) regarding any potential impacts to historical properties within that state. Criteria for determining eligibility for listing are generally based upon the places, structures, or objects having appropriate integrity and being associated with significant patterns in history, the lives of significant persons, distinct characteristics, or importance to prehistory or history.

CEQA requires an assessment of potential impacts to cultural resources and implementation of feasible mitigation measures to minimize significant impacts. In

California, cultural resources and their preservation are managed by the California Office of Historic Preservation (OHP) and California SHPO. Additionally, the State Historical Resources Commission determines eligibility for listing a historical resource on the California Register of Historical Resources (CRHR) if it is associated with broad patterns of local or regional history or the cultural heritage of California and/or the U.S.; is associated with important persons from the past; has distinctive characteristics; or is important to local, state, or national prehistory or history.

A number of federal protections exist for TCRs. The American Indian Religious Freedom Act of 1978 protects Native American religious sites and practices, and the Native American Graves Protection and Repatriation Act of 1990 provides for repatriation of certain TCRs found on federal lands and identifies a process for determining ownership. Additionally, Executive Orders (EOs) 13007 and 13084 require land management agencies to facilitate access to and use of Native American sacred sites on public lands and to establish procedures for consultation with tribes regarding federal undertakings. In California, Public Resources Code (PRC) Section 5097 requires that no public agency or private party using public property interferes with the free expression or exercise of Native American religion and that Native American tribal resources are not severely or irreparably damaged, except in cases in which the public interest and necessity require it. CEQA also requires an evaluation of potential adverse impacts to TCRs and how the project would address such impacts. AB 52 (Gato 2014) requires that public agencies consult with tribes during the CEQA process and prior to the release of CEQA documentation (negative declaration, mitigated negative declaration, or environmental impact report [EIR]) for a project. Native American cultural resources within California are also protected by the Native American Graves Protection and Repatriation Act of 2001. Additionally, several provisions of the PRC protect Native American human remains that are found during excavation or disturbance of land.

Archeological resources are protected under the federal Archaeological Resource Protection Act of 1979 for resources on public lands and Native American lands. In California, CEQA PRC Section 21083.2 also requires that any potential impacts to unique archaeological resources be evaluated and that significant impacts be avoided and mitigated.

2.4.2 Literature and Database Review

Sources of data for this desktop analysis included the following:

- data records through 2014 derived from regular updates provided to SoCalGas by the Eastern Information Center (EIC) of California Historical Resources Information System (CHRIS),

- data records through 2018 derived from regular updates provided to SoCalGas by the South Central Coastal Information Center (SCCIC) of CHRIS, and

- data records through 2022 derived from regular updates provided to SoCalGas by the Southern San Joaquin Valley Information Center (SSJVIC) of CHRIS (SoCalGas 2023).

2.4.3 Definitions

For the purposes of this report, the following definitions were used:

- cultural resources include, but are not limited to, archaeological sites, sacred sites, TCRs, traditional cultural properties, rock art, rock piles or cairns, historical buildings, or other features of the historic built environment (14 CCR §15064.5); and

- TCRs include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe and that are listed or determined eligible for listing in the national or state registers of historical places or listed in a local register of historical places, or resources determined by a lead agency to be TCRs (PRC § 21074).

2.4.4 Environmental Setting

This desktop analysis was conducted on records search information provided by SoCalGas for each the Evaluated Segment. All identified resources within 0.25 mile of the route were assessed, with particular attention to resources within a 200-foot-wide corridor (100 feet on either side) centered on the segment centerline. The records search information was used to determine the presence of any cultural resources or TCRs that may be eligible for inclusion in the CRHR or NRHP that may be impacted by the Evaluated Segments and to provide recommendations for potential avoidance of a resource.

To analyze potential impacts to cultural resources in the desktop analysis, existing data records and GIS data obtained from relevant information centers were used to identify or estimate the cultural resources that could be crossed by the Evaluated Segments.

2.4.5 Impact Analysis

The potential impacts associated with the Evaluated Segments were identified by performing a qualitative assessment of potential cultural resource and TCR impacts for the conceptual pipeline routes in each study area that could:

- cause a substantial adverse change in the significance of a historical resource pursuant to 14 CCR §15064.5;

- cause a substantial adverse change in the significance of an archaeological resource pursuant to 14 CCR §15064.5;

- disturb any human remains, including those interred outside of formal cemeteries; or

- cause a substantial adverse change in the significance of a TCR, defined in PRC 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 CRHR, or in the local register of historical resources as defined in PRC Section 5020.1(k), or (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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, consider the significance of the resource to a California Native American tribe.

The construction and O&M activities were classified as having either a potential impact or no impact associated with cultural resources and TCRs. Using the framework questions listed previously as a guide, a preliminary determination was made that there could be a potential impact to cultural resources and TCRs in any of the following cases:

- cultural resource records were located within the 200-foot-wide corridor;
    - all ground disturbing activities for the Evaluated Segments were assumed to have a potential impact on historical and archaeological resources, due to unavailable data regarding the specific record details;
    - all ground disturbing activities were assumed to have a potential impact due to unavailable data regarding locations of human remains; and
- all project activities within the 200-foot-wide corridor were assumed to have a potential impact on TCRs, due to unavailable data regarding TCRs.

AMMs that could reduce potential impacts to cultural resources and TCRs were also identified.

2.5 ENERGY

2.5.1 Regulatory Setting

Under the Clean Energy and Pollution Reduction Act (SB 350), California's large utilities are required to develop and submit integrated resource plans detailing how utilities will meet their customers' resource needs and ramp up the use of renewable clean energy resources to meet the state's electricity procurement goal of 50 percent by 2030 and double statewide energy efficiency savings in electricity and natural gas end uses by 2030. Additionally, under SB 100, retail sellers are required to procure renewable energy and zero-carbon sources to supply 100 percent of electric retail sales to end-use customers by 2045. The CEC is working with state agencies, including the CPUC, CARB, and the California Independent System Operator (CAISO), to implement the Clean Energy and Pollution Reduction Act.

Each year, the CPUC prepares the California RPS Annual Report for the Legislature to report on the progress of the RPS program to meet the state's electricity procurement goal. This report describes the progress of the state's electricity retail sellers in meeting the RPS program requirements for each year and future years. Specifically, the report discusses challenges related to bioenergy, delays in renewable energy project

development, and renewables paired with energy storage resources, as well as recommendations for addressing these challenges.

In addition to the RPS program, the CEC is required by PRC Section 25301(a) to conduct assessments and forecasts of energy industries in the Integrated Energy Policy Report (IEPR) every two years. The IEPR aids the development and evaluation of energy policies and programs that conserve resources, protect the environment, and enhance energy reliability. The 2023 IEPR addressed topics such as gas decarbonization, the role of hydrogen, the Clean Transportation Program, and energy efficiency (CEC 2024).

Portions of the proposed Angeles Link are located within the DRECP area, which covers approximately 22.6 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties. The DRECP is a multi-phase collaborative planning effort between the CEC, CDFW, BLM, and the USFWS to meet the needs of the state for renewable energy and also conserve species and habitat within the DRECP area. The DRECP identifies existing utility corridors and recognizes Conservation and Management Actions (CMAs), which restrict siting and construction activities to existing utility corridors and specific land areas to minimize resource impacts by reducing the need for new, unplanned transmission infrastructure. The DRECP's objectives include advancing federal and state natural resource conservation goals and other federal land management goals; meeting the requirements of the ESA, CESA, Natural Community Conservation Planning Act, and Federal Land Policy Management Act (FLPMA); and facilitating the timely and streamlined permitting of renewable energy projects in the Mojave and Colorado/Sonoran desert regions of Southern California.

2.5.2 Literature and Database Review

Sources of data for this desktop analysis included the following:

- California Energy Consumption Database (CEC 2022a),
- CEC Solar Resource Areas (CEC 2022b),
- CEC Wind Resource Areas (CEC 2023a),
- California Retail Fuel Outlet Annual Reporting Results (CEC-A15) (CEC 2022c),
- Energy Maps of California (CEC 2023b),
- existing solar footprints (CEC 2023c),
- Pacific Gas and Electric Company (PG&E) Electric Service Area Map (PG&E 2014a),
- PG&E Gas Service Area Map (PG&E 2014b),
- Southern California Edison (SCE) Territory Map (SCE 2023),
- SoCalGas Gas Service Area Map (SoCalGas 2011),
- Los Angeles Department of Water and Power (LADWP) Service Territory data (City of Los Angeles 2020),
- CPUC California RPS program data (CPUC 2022),
- DRECP (CEC 2016),

- Public Works Renewable Energy Master Plan (REMP) (County of Los Angeles 2020),
- Countywide Policy Plan Renewable Energy and Conservation Element (San Bernardino County 2020),
- Power Strategic Long-Term Resource Plan (SLTRP) (LADWP 2022), and
- various county general plans and zoning ordinances.

2.5.3 Definitions

No special definitions were used for this analysis.

2.5.4 Environmental Setting

Based on the preliminary pipeline routes, an initial assessment was made to determine if the Evaluated Segments would result in wasteful, inefficient, or unnecessary consumption of energy resources as a result of construction or during O&M. Existing, publicly available data on electricity and natural gas consumption and retail fuel sales by county was summarized to depict the amount of energy currently consumed within the geographical area that could be crossed by the Evaluated Segments. Additionally, investor-owned utilities (IOUs) and publicly owned utility service area maps were overlain with the preliminary pipeline configurations to determine which utilities could serve the Evaluated Segments for electricity and/or natural gas needs.

Existing, publicly available GIS data and maps on current and future renewable energy projects were overlain with a 200-foot-wide pipeline corridor around the segment centerlines to determine where the Evaluated Segments could cross current and planned future renewable energy infrastructure projects to identify potential conflicts with plans for renewable energy.

2.5.5 Impact Analysis

Estimating the energy usage specific to the construction equipment and construction vehicles for the Evaluated Segments and appurtenant facilities would be speculative at this stage; however, existing information on energy consumption within each county, existing energy infrastructure datasets, special land use designations for renewable energy resources, and local renewable energy plans were evaluated.

The potential impacts associated with the Evaluated Segments were identified by performing a qualitative assessment of potential energy impacts for the conceptual pipeline routes in each study area that could:

- result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or

- conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The construction and O&M activities were classified as having either a potential impact or no impact associated with energy resources. Using the framework questions listed previously as a guide, a preliminary determination was made that there could be a potential impact to energy in any of the following cases:

- during construction and O&M activities involving construction equipment with combustion engines or requiring power;
- the Evaluated Segments could cross through any approved or in-progress PV solar-generation facility;
- the Evaluated Segments could cross DRECP-designated land uses that do not currently allow for utility crossings; and
- the Evaluated Segments could cross through CEC solar and wind resource areas.

AMMs that could reduce potential impacts to energy resources were also identified.

2.6 HAZARDS AND HAZARDOUS MATERIALS

2.6.1 Regulatory Setting

Hazards to human health and the environment can include air traffic related to nearby airports or airstrips, wildland fires, existing hazardous sites, and transport of hazardous materials. Hazards, hazardous material sites, and the transport of hazardous materials are regulated by various federal, state, and local agencies.

The transport of materials via pipeline is regulated by the U.S. Department of Transportation's (DOT's) Pipeline and Hazardous Materials Safety Administration (PHMSA) to support pipeline safety. PHMSA also administers the Pipeline Safety, Regulatory Uncertainty, and Job Creation Act, which enhances the safety and environmental protections associated with the transportation of energy products by pipeline. The PHMSA also regulates the transport of hydrogen. Within California, the CPUC would have regulatory authority over the clean renewable hydrogen pipeline system.

For existing lands or water that are known to contain hazardous materials, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act govern the planning, reporting, cleanup, and notification of hazardous materials and any release into the environment. These laws and associated regulations are administered by the U.S. EPA. Additionally, the federal Clean Water Act (CWA) governs the accidental release of hazardous materials to surface waters within the U.S. and the CAA contains requirements to prevent accidental release of hazardous materials into the earth's atmosphere. Within California, the disturbance, cleanup, and monitoring of sites with hazardous materials and hazardous waste are regulated by the Department of Toxic Substances Control (DTSC) as well as the SWRCB.

For the transport, treatment, storage, and disposal of hazardous materials, the Resource Conservation and Recovery Act (RCRA) regulates potential health and

environmental issues associated with these materials, as well as non-hazardous materials, and is administered by the U.S. EPA. The DOT also regulates the transport of hazardous materials under the Hazardous Materials Transportation Act. Information regarding the hazard classification of hydrogen gas is available in Title 49, Part 172 of the Code of Federal Regulations (CFR). Individual states typically establish waste management programs and are granted authority by the U.S. EPA to implement the programs as well as additional requirements under the RCRA. Within California, the California Department of Resources Recycling and Recover generally oversees the state's waste management and recycling programs and DTSC oversees the transport, treatment, and disposal of hazardous waste to ensure public health and environmental safety are maintained.

Other hazards that could pose a threat to human health and the environment include flooding, wildfire, and noise. The federal Disaster Mitigation Act of 2000 required that state, local, and tribal governments engage in hazard mitigation planning in order to receive non-disaster assistance. The Federal Emergency Management Agency (FEMA) reviews and approves hazard mitigation plans (HMPs) developed under this law. Within California, the California Office of Emergency Services (Cal OES) developed California's State HMP and also reviews the local HMPs developed, updated, and implemented by local jurisdictions. These hazard mitigation or emergency response plans help communities be prepared in case of hazards or natural disasters.

Government Code section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. The section requires that DTSC compile and update a list of all hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code. DTSC is also required to compile and update a list of all underground storage tanks for which an unauthorized release report is filed pursuant to Section 25295 of the Health and Safety Code.

For the purposes of this feasibility analysis, this study's review of Angeles Link's potential impacts associated with hazards and hazardous materials includes an analysis of the transportation of materials by pipeline in general. Additional analysis of the potential hazards specific to the transport of clean renewable hydrogen is included in the Plan for Applicable Safety Requirements (Safety Study) prepared as a separate Angeles Link Phase 1 feasibility study. Further review of the potential specific hazards associated with the transport of clean renewable hydrogen would also be included in the analysis for future phases of Angeles Link as the project is further refined, including through the future CEQA and NEPA processes, as applicable.

2.6.2 Literature and Database Review

Information for this analysis was obtained from the following sources:

- hazardous materials sites from the SWRCB through use of its GeoTracker database;
- the DTSC EnviroStor Site List for sites identified in Government Code 65962.5;

- California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zones (FHSZs);
- Cal OES or local hazard mitigation or emergency response plans; and
- Homeland Infrastructure Foundation-level data.

2.6.3 Definitions

For the purposes of this report, the following definitions were used.

2.6.3.1 Hazardous Materials

A hazardous material is defined in Title 49, Section 171.8 of the CFR as “a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under section 5103 of Federal hazardous materials transportation law (49 U.S.C. 5103). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in part 173 of this subchapter.”

2.6.3.2 Hazardous Sites

For the purposes of this desktop analysis, only open cases were identified based on the elevated risk of encountering subsurface contaminants. Open and closed cases are defined as follows:

- Open cases: Open cases are hazardous materials sites that are currently being evaluated or remediated based on the presence or suspected presence of subsurface contaminants.

- Closed cases: Closed cases require no further regulatory action and/or subsurface constituents of concern have been reported to be below applicable regulatory criteria. There is the potential that contaminants may remain at closed sites and/or land use restrictions could have been established to prevent human health and the environment from encountering this contamination. However, contaminants at closed sites are typically below applicable regulatory criteria and these sites are not anticipated to pose a risk during construction or O&M activities.

2.6.3.3 Airports

Public and private airports were identified within two miles of the centerline of the Evaluated Segments.

2.6.3.4 Sensitive Receptors

For the purposes of the desktop analysis related to potential impacts associated with hazards and hazardous materials, sensitives receptors were limited to hazards and hazardous materials-related receptors that are analyzed under CEQA. These receptors

include public and private schools, day-care centers, and preschools. These sensitive receptors are consistent with the receptors identified in Health and Safety Code § 25200.21.

Potential impacts that could result from emitting hazardous emissions or handling hazardous materials within 0.5 mile of an existing or proposed school are also analyzed, as described in Section 2.6.5 Impact Analysis.

2.6.3.5 Fire Hazard Severity Zones

Within California, FHSZs are designated by CAL FIRE. FHSZ levels range from moderate to very high. FHSZs are administered by the federal, state, or local government that is financially responsible for preventing and suppressing wildfires in a given area, and are categorized into the following three groups:

- Federal Responsibility Areas (FRAs): The federal government is financially responsible for wildfire suppression.
- State Responsibility Areas (SRAs): The state is financially responsible for wildfire suppression.
- Local Responsibility Areas (LRAs): Cities or counties are financially responsible for wildfire suppression.

An analysis of available CAL FIRE GIS data revealed that the FRA data were not up to date. Therefore, SRA and LRA data were utilized in the desktop analysis.

2.6.4 Environmental Setting

To characterize existing conditions within and adjacent to where the Evaluated Segments could be located, hazardous materials sites that were open cases and could potentially have subsurface contaminants within a 1,000-foot-wide buffer on either side of each potential segment centerline were identified. To characterize the hazard potential within and adjacent to the Evaluated Segments, the distance that each segment would travel within FHSZs was calculated. Any airports identified within two miles of each potential pipeline segment centerline were identified and any associated airport land use plans were reviewed. Schools within 0.5 mile of the potential segments' centerline were identified. Because schools are identified via GIS by center point, the 0.5-mile search radius provided a conservative analysis and captured additional schools whose boundaries would not be flagged with a 0.25-mile search radius. Local HMPs or emergency response plans were reviewed based on the counties that would be crossed by each segment.

To assess potential impacts to the environment and human health that may occur near the Evaluated Segments, this analysis used existing, publicly available GIS data to identify or estimate the existing hazards or hazardous materials sites that could be crossed by the Evaluated Segments (including hazardous materials and hazardous sites, as defined in Section 2.6.3 Definitions) and determined potential impacts from the Evaluated Segments.

2.6.5 Impact Analysis

The potential impacts associated with the Evaluated Segments were identified by performing a qualitative assessment of potential impacts related to hazards or hazardous materials for the conceptual pipeline routes in each study area that could:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
- be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- if 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), result in a safety hazard or excessive noise for people residing or working in the pipeline route area;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

The construction and O&M activities were classified as having either a potential impact or no impact associated with hazards or hazardous materials. Using the framework questions listed previously as a guide, a preliminary determination was made that there could be a potential impact to the environmental and public from hazards and hazardous materials in any of the following cases:

- the construction and O&M activities could involve transport, use, or disposal of hazardous materials;
- Evaluated Segments could cross known open hazardous materials sites, including sites listed in Government Code Section 65962.5, that occur within 1,000 feet on either side of the Evaluated Segments;
- Evaluated Segments could be located within 0.5 miles of a school, preschool, or day-care center;
- Evaluated Segments could cross within two miles of an airport and within the planning boundary or area of influence for an airport;

- construction or O&M of Evaluated Segments could result in lane closures or encroachments that could interfere with evacuation routes and/or emergency evacuation and response plans; and

- Evaluated Segments could cross areas mapped as SRA or LRA Very High FHSZ.

AMMs that could reduce potential impacts to human health and the environment from hazards or hazardous materials were also identified.

2.7 HYDROLOGY AND WATER QUALITY

2.7.1 Regulatory Setting

Impacts to surface waters are regulated at both the federal and state level. The federal CWA regulates water resources and water quality within the U.S. More specifically, Section 303 of the CWA requires individual states to adopt water quality standards for all surface waters of the U.S. and to manage waters according to the plans approved by the U.S. EPA, while Section 404 of the CWA requires projects to obtain permits from the U.S. Army of Engineers prior to the discharge of any fill into waters of the U.S. Within California, the SWRCB implements Section 401 of the CWA, which requires projects to obtain a permit or certification from the SWRCB for any discharges into waters of the U.S. The Porter-Cologne Water Quality Control Act requires each of California's nine RWQCBs to adopt a basin plan that includes beneficial uses of water within the region and water quality objectives to protect those uses. The California Fish and Game Code Sections 1600 through 1606 require the CDFW to review projects that "may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake" and to propose measures to minimize such impacts (CDFW 2004).

Pollution prevention is regulated by the SWRCB and RWQCBs. The SWRCB implements the CWA Section 402 National Pollutant Discharge Elimination System (NPDES) program, which requires control of pollutant discharges from defined sources, such as construction sites. In California, with the exception of construction activities that are conducted on tribal lands, NPDES permitting authority is delegated to and administered by the RWQCBs. Additionally, the SWRCB adopted Order No. 2009-0009-DWQ, which requires construction projects disturbing one or more acres of land to obtain a new permit and to implement a Storm Water Pollution Prevention Plan.

FEMA manages flood risks in the U.S. FEMA distributes Flood Insurance Rate Maps (FIRMs) based on the Federal Flood Risk Management Standards as established in EO 11988 and under the standards set in EO 13690. FIRMs identify special flood hazard areas, including areas in which construction activities are restricted.

Groundwater resources within California are managed by the Department of Water Resources (DWR) under the Sustainable Groundwater Management Act (SGMA). SGMA requires local groundwater sustainability agencies to develop and implement

groundwater sustainability plans to avoid overdraft of groundwater basins and to reduce its effects.

2.7.2 Literature and Database Review

Sources of data for this desktop analysis included:

- the National Hydrography Dataset (NHD) Plus High Resolution from the U.S. Geological Survey (USGS) (USGS 2023a),
- the Watershed Boundary Dataset from the USGS (USGS 2023b),
- NWI data from the USFWS (USFWS 2023),
- California DWR groundwater data (DWR 2022a),[24]
- SWRCB California 2020-2022 Integrated Report Map (SWRCB 2022a), and
- FEMA FIRMs (FEMA 2023).

2.7.3 Definitions

For the purposes of this report, the following definitions were used:

- Named waterbodies: any aboveground body of water, including streams, rivers, lakes, wetlands, reservoirs, and creeks that are identified with a specific name within the USGS NHD;

- Unnamed waterbodies: any aboveground body of water that is identified as such within the USGS NHD and/or USFWS NWI but not assigned a specific name;

- Connector between waterways (as defined by the USGS NHD Data Dictionary Feature Classes [USGS 2023d]): a known but unspecific connection between two nonadjacent network segments;

- Canal/ditch (as defined by the USGS [USGS 2023d]): an artificial open waterway constructed to transport water, to irrigate or drain land, to connect two or more bodies of water, or to serve as a waterway for watercraft;

- Pipeline (in the context of an NHD waterbody and as defined by the USGS [USGS 2023d]): a closed conduit with pumps, valves, and control devices for conveying fluids, gases, or finely divided solids;[25]

- Stream/river (as defined by the USGS [USGS 2023d]): a body of flowing water;

[24] Groundwater monitoring wells within two miles of the potential pipeline corridors were analyzed.

[25] Only pipelines defined by USGS as being at or near the surface were included in the discussion of surface waters.

- Artificial waterway (as defined by the USGS [USGS 2023d]): an abstraction to facilitate hydrologic modeling through open waterbodies and along coastal shorelines and to act as a surrogate for lakes and other water bodies;

- Floodplains: areas classified as flood hazard areas within FEMA FIRMs;

- Impaired waters: surface waters identified in the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b) as impaired waterbodies; and

- Groundwater: water beneath the earth's surface.

2.7.4 Environmental Setting

To characterize existing hydrological resources and water quality for this desktop analysis, existing, publicly available GIS data on hydrological features and water quality were overlayed with a 200-foot-wide corridor around the potential segment centerlines to determine where the Evaluated Segments could cross named and unnamed surface waterways, as well as other hydrological features. Groundwater levels for monitoring wells located within two miles of the potential segment centerlines were used to characterize the existing groundwater resources adjacent to where each of the segments would be located. Flood and inundation risk was characterized using a 200-foot-wide corridor around the potential segment centerlines.

2.7.5 Impact Analysis

To assess potential impacts to the hydrologic resources that may be crossed by the Evaluated Segments and to water quality, this desktop analysis used publicly available GIS data to identify or estimate the hydrologic resources that would be crossed by the Evaluated Segments, including rivers, streams, floodplains, and groundwater resources, as defined in Section 2.7.3 Definitions. Further field surveys would have to be conducted in future phases to evaluate Angeles Link's potential impacts related to hydrologic resources.

The potential impacts associated with the Evaluated Segments were identified by performing a qualitative assessment of potential hydrology and water quality impacts, organized under the subheadings of "surface water," "groundwater," and "location within flood hazard zones" for the conceptual pipeline routes in each study area that could:

- Surface water: violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;

- Groundwater: substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin; or

- Flood zone location: be located within a flood hazard zone or alter existing drainage patterns of the site or area.

The construction and O&M activities were classified as having either a potential impact or no impact associated with hydrologic resources and water quality. Using the framework questions listed previously as a guide, a preliminary determination was made that there could be a potential impact to hydrology and water quality in any of the following cases:

- Evaluated Segments could cross named or unnamed waterbodies;
- Evaluated Segments could cross impaired waterbodies;
- Evaluated Segments would cross groundwater basins and construction and/or O&M activities could involve ground disturbing work; and
- Evaluated Segments would cross 100-year or 500-year floodplains.

AMMs that could reduce potential impacts to hydrologic resources and water quality were also identified.

Not all of the CEQA Appendix G checklist hydrology and water quality questions were evaluated in this desktop analysis because there was not enough publicly available data to assess the resources or the level of detail would be too granular at this high-level feasibility stage. For example, the desktop analysis did not directly assess whether the Evaluated Segments could results in substantial erosion or runoff. This analysis also did not address whether the Evaluated Segments would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. It is anticipated that these CEQA Appendix G checklist questions would be evaluated during the environmental review in a future phase.

2.8 LAND USE AND PLANNING

2.8.1 Regulatory Setting

The Evaluated Segments could cross land managed by various federal, state, and local governments,[26] as well as private landowners. The jurisdictions and land uses that would be crossed by the potential pipeline segments, as well as associated regulations and plans, are discussed in more detail in each study area section. Additional information can be found in the High-Level Permitting Analysis, which details applicable environmental laws, policies, and regulations that may pertain to the Evaluated Segments, as well as potential permitting requirements.

[26] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, SoCalGas would consult with local agencies regarding land use matters during the siting of such pipeline and appurtenant facilities. This report highlights the several land uses, plans, policies, or regulations that could be assessed for consistency with Angeles Link.

2.8.2 Literature and Database Review

The following data sources were used for this desktop analysis:

- California General Plan Land Use (California Governor's Office of Planning and Research [OPR] 2024),
- Pacific Crest National Scenic Trail (U.S. Forest Service [USFS] 2022c),
- Bureau of Indian Affairs (BIA) Tracts (BIA 2023),
- California Desert National Conservation Land (BLM 2023a),
- National Landscape Conservation System (NLCS) National Monuments (BLM 2023b),
- NLCS Wilderness Areas (BLM 2023c),
- NLCS National Scenic and Historic Trails (BLM 2023d),
- ACECs (BLM 2022a),
- BLM Land Use Planning Boundaries (BLM 2022b),
- U.S. Military Installations (Defense Installations Spatial Data Infrastructure [DISDI] 2023),
- NHD Plus High Resolution (USGS 2023),
- California Conservation Easement Database (GreenInfo Network 2023a),
- California Protected Areas Database (GreenInfo Network 2023b),
- California Coastal Zone boundary (CCC 2023),
- CDFW-Managed Lands and Conservations Easements (CDFW 2023),
- Williamson Act Properties data (California Department of Conservation 2023), and
- California High-Speed Rail Statewide Alignments (California High-Speed Rail Authority [HSRA] 2023).

Various state and federal land use plans and policies were reviewed as part of the desktop analysis.

The following plans were consulted for this desktop analysis.

Bureau of Land Management and Resource Management Plans

BLM resource management plans and ACECs within the resource management plans were consulted for this analysis, including:

- Bakersfield Resource Management Plan (BLM 2014),
- Central Coast Resource Management Plan (BLM 2021a),
- Coachella Valley Resource Management Plan (BLM 2002),
- Southern Diablo Mountain Range and Central Coast of California Resource Management Plan (BLM 2007),
- CDCA Plan (BLM 2021c),
- South Coast Resource Management Plan (BLM 2021d),
- Lake Havasu Resource Management Plan (BLM 2023e), and
- DRECP (BLM 2016).

A summary of these plans is provided in Section 2.3.2.2 Plans.

Habitat Conservation Plans and Natural Community Conservation Plans

Relevant HCP and NCCP plan areas that would be crossed by the pipeline segments are summarized in Section 2.3.2.2 Plans.

2.8.3 Definitions

For the purposes of this report, the following definitions were used:

- General Plan: A General Plan is a comprehensive policy document developed by municipal jurisdictions (e.g., cities and counties) that informs future land use decisions and establishes land use designations and policies.

- Special Land Use Designation: This land use designation typically includes lands that contain unique natural or cultural features (e.g., a historical or cultural site or an area that supports special-status species), or unique characteristics (e.g., geologic sites or sites of large-scale infrastructure). These lands have additional management or protections and often more limited uses than more common land use designations (e.g., agricultural, residential). For this desktop analysis, special land uses were considered lands managed as conservation areas, recreation areas, historic/scenic trails, major water infrastructure, major statewide transportation projects (i.e., the High-Speed Rail), tribal lands, the coastal zone, agricultural preserves, and military bases.

2.8.4 Environmental Setting

Publicly available GIS datasets were used to characterize existing land uses and identify relevant local, state, and federal land use designations that intersect the Evaluated Segments or would be located within a 200-foot-wide corridor (i.e., 100 feet on either side of the segment centerline).

2.8.5 Impacts Analysis

The potential impacts from the Evaluated Segments were determined by performing a qualitative assessment of publicly available GIS data for existing and planned land uses within the study areas followed by a review of the applicable plans, regulations, and policies for those land uses. This information was used to preliminarily identify land uses and/or lands with special land use designations where future construction of the Evaluated Segments and O&M activities could occur.

The potential impacts associated with the Evaluated Segments were identified by performing a qualitative assessment of potential land use and planning impacts for the conceptual pipeline routes in each study area that could:

- physically divide an established community; or

- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over Angeles Link adopted for the purpose of avoiding or mitigating an environmental effect.

The construction and O&M activities were classified as having either a potential impact or no impact associated with land use and planning. Using the framework questions listed previously as a guide, a preliminary determination was made that there could be a potential impact to land use and planning in any of the following cases:

- where Evaluated Segments could conflict with a special land use area on federally or state-managed lands;
- where Evaluated Segments could conflict with a special land use area on locally managed land that is also subject to state or federal authority; and
- where the land use or management plan contains policies that could conflict with the siting or operation of pipelines or other utilities.

AMMs that could reduce typical land use impacts associated were also identified.

3 – ENVIRONMENTAL ANALYSIS

For the Evaluated Segments reviewed in this study, this chapter describes existing conditions, identifies potential environmental impacts, and provides potential avoidance and minimization measures. This chapter presents the results of the high-level desktop analysis for each of the 13 study areas created to facilitate the analysis of the potential environmental impacts of the Evaluated Segments. The study areas are depicted in Figure 1.1-1: Map of Evaluated Segments. Each study area includes between one and five of the Evaluated Segments that were grouped based on geography, common natural resources, and topographical features. As described in Chapter 2 – Methodology and Regulatory Setting, the high-level desktop analysis was guided by the CEQA Appendix G checklist, but this report does not provide a comprehensive CEQA analysis. It is anticipated that a complete CEQA/NEPA analysis would be conducted by the CEQA and NEPA lead agencies at a future phase of Angeles Link.

This chapter evaluates potential impacts based on the Impact Analysis criteria stated in Chapter 2 – Methodology and Regulatory Setting. High-level assumptions were made about construction and operations and maintenance activities to assess potential impacts of constructing and operating and maintaining a pipeline system. The analysis addresses seven environmental factors, including: air quality and GHG emissions; biological resources; cultural resources and TCRs; energy; hazards and hazardous materials; hydrology and water quality; and land use and planning. In general, typical impacts that would be anticipated to occur as a result of construction and O&M activities are detailed in Study Area 1A and/or Study Area 1B or are otherwise noted in the applicable study area Impact Discussion section for that particular environmental factor and those impacts generally reflect typical impacts that would apply to Evaluated Segments in other study areas. Where Evaluated Segments may have different potential impacts based on their location, those impacts are otherwise noted in the applicable study area Impact Discussion section for the relevant environmental factors.

Other Angeles Link Phase 1 feasibility studies also address some of the topic areas related to the environmental factors evaluated herein, which include the following:

Air Quality/GHG

- **Greenhouse Gas Emissions Evaluation**: This study evaluates direct GHG emissions[27] associated with hydrogen combustion associated with new infrastructure (i.e., third-party production, third-party storage, and transmission of

[27] In this Greenhouse Gas Emissions Evaluation, direct GHG emissions refer to GHG emissions from combustion, and indirect GHG emissions refer to GHG associated with non-renewable grid electricity or the estimated effect of potential hydrogen leakage on GHG in the atmosphere.

hydrogen),[28] as well as GHG emissions reductions associated with displaced fossil fuels by end users in the mobility, power generation, and hard-to-electrify industrial sectors.

- **Hydrogen Leakage Assessment**: This study evaluates the potential for hydrogen leakage associated with new hydrogen infrastructure (i.e., clean renewable hydrogen transportation and compression, in addition to third party production and storage), as well as opportunities to minimize the potential for hydrogen leakage.

- **NOx and Other Air Emissions Assessment:** This study evaluates potential NOx and other air emissions associated with new hydrogen infrastructure (i.e., third-party production, third-party storage, and transmission), as well as potential NOx emissions associated with end users in the mobility, power generation, and hard-to-electrify industrial sectors. The study also identified minimization opportunities to reduce potential NOx emissions.

Hazards/Hazardous Materials

- **Plan for Applicable Safety Requirements**: This study demonstrates that Angeles Link can be safely designed, constructed, operated, and maintained in accordance with existing regulations and industry standards and best practices pertaining to hydrogen; recommends adapting corollary safety regulations and industry standards and best practices to suit the specific properties and characteristics of hydrogen; and recommends developing new standards and practices specific to the transport of hydrogen.

Land Use and Planning

- **High Level Feasibility and Permitting Analysis**: This study evaluates at a desktop level the Evaluated Segments[29] to determine the permits and authorizations anticipated to be required for construction. The analysis included a high-level review of federal, state, and local jurisdictional lands[30] and waters, military bases, existing transportation corridors, highway and railroad crossings,

[28] The terms “new infrastructure” and “hydrogen infrastructure” refer to general hydrogen infrastructure comprised of third-party production, third-party storage, and transmission. The term “Angeles Link infrastructure” refers to transmission via pipelines including compression which supports transmission of hydrogen.

[29] As defined in Section 1.1 Approach, the Evaluated Segments include the approximately 1,300 miles of conceptual pipeline routes initially identified in the Routing Study. The final preferred route will be identified in a future phase and would be subject to CEQA/NEPA review when Angeles Link requires discretionary approvals.

[30] Federal, state, and local jurisdictional lands include, but are not limited to, National Park Service, BLM, USFS, California Department of Parks and Recreation, California State Lands Commission, and county parks.

state and federally protected plants and wildlife, and land owned by special districts.

3.1 STUDY AREA 1A

3.1.1 Study Area 1A Description

Study Area 1A includes Segment C, as depicted in Figure 3.1-1: Study Area 1A Overview Map. Segment C would traverse approximately 80 miles through Fresno, Kings, and Kern counties as well as the City of Avenal. Segment C is one of the Angeles Link segments envisioned to be part of the ARCHES[31] "California H2Hub." ARCHES was formed to advance the state's vision for a clean hydrogen hub, with the support of its partners (ARCHES 2023a). ARCHES submitted an application for the California H2Hub for federal funding pursuant to the Infrastructure Investment and Jobs Act, and in October 2023, the U.S. Department of Energy selected the California H2Hub to receive up to $1.2 billion in federal funding (ARCHES 2023b). In July 2024, ARCHES and DOE announced the signing of a $12.6 billion agreement to build the California hydrogen hub, including the up to $1.2 billion in federal funding that was announced last year when California was selected as a national hub (State of California 2024). This segment is part of the Connection Zone.

Table 3.1-1: Jurisdictions Crossed by Study Area 1A details the distance in miles that Segment C would traverse in each jurisdiction of Study Area 1A. Segment C would generally connect potential third-party production facilities in the middle of the California Central Valley to other components of the Evaluated Segments. Segment C would begin south of the City of Giffen Cantua Ranch along Interstate (I-) 5 south of its junction with South Derrick Avenue and travel south along the I-5 corridor and then west near Avenal before ending near State Route (SR-) 46, where it would connect to Segment R, which is part of Study Area 4A.

Table 3.1-1: Jurisdictions Crossed by Study Area 1A

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
C	80	City of Avenal	3
		Unincorporated Fresno County	30
		Unincorporated Kern County	27
		Unincorporated Kings County	20

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

[31] Segment B in Study Area 1B is also envisioned to be part of ARCHES.

3.1.1.1 Summary of Potential Impacts

Segment C within this study area is preliminary, and the actual routing, engineering, and design and construction methods for the segment has not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, the segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of Segment C and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.1-2: Study Area 1A Potential Impact Summary summarizes the potential impacts identified for the segment within Study Area 1A.

Table 3.1-2: Study Area 1A Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of the segment
Biological Resources	• Potential impacts to species and habitat during construction and O&M of the segment • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M of the segment • Potential impacts to wetlands during construction and O&M of the segment • Potential impacts to wildlife movement and migration corridors during construction and O&M of the segment • Potential to conflict with existing NCCPs/HCPs and other conservation plans during construction and O&M of the segment
Cultural Resources and TCRs	• Potential to change the significance of a historical resource during construction and O&M of the segment • Potential to change the significance of an archeological resource during construction and O&M of the segment • Potential to disturb human remains during construction and O&M of the segment • Potential to change the significance of a TCR during construction and O&M of the segment
Energy	• Potential impacts to existing energy resources during construction of the segment • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of the segment

Environmental Factor	Potential Impact
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of the segment • Potential for a foreseeable upset or accident conditions during construction and O&M of the segment • Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of the segment • Potential to contribute to wildland fires during construction and O&M of the segment
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of the segment • Potential impacts to ground water quality and/or depletion during construction and O&M of the segment • Potential impacts to floodplains during construction and O&M of the segment
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M of the segment

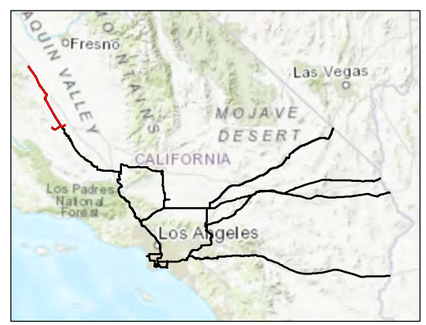
Figure 3.1-1: Study Area 1A Overview Map

Angeles Link Phase 1 Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- C
- Adjacent/Other Study Area Visible



SoCalGas

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3.1.2 Air Quality and Greenhouse Gas Emissions

3.1.2.1 Existing Conditions

Section 3.1.1 Study Area 1A Description provides a description of the segment and the cities and counties that would be crossed by Segment C. Study Area 1A is comprised of Segment C.

As depicted in Attachment A: Air Basins and Air Districts Maps, the entirety of Segment C would be located within the San Joaquin Valley Air Basin under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The San Joaquin Valley is bordered on the west by the Coastal Ranges, on the south by the San Emigdio Mountains and Tehachapi Mountains, on the east by the Sierra Nevada, and on the north by the Sacramento-San Joaquin River Delta and the Sacramento Valley. The topography of the surrounding mountain ranges creates a sheltered valley that tends to trap stable air and air pollutants.

Attainment Status

Table 3.1-3: Study Area 1A Attainment Status details the current attainment status for the criteria air pollutants with the CAAQS and NAAQS for the air basins within Study Area 1A.

Table 3.1-3: Study Area 1A Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
San Joaquin Valley Air Basin		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_1	Nonattainment	Attainment
CO	Unclassified/Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	Not Applicable (N/A)
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide (H_2S)	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for areas that would be crossed by the segment.
Source: CARB 2023

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Air Quality

San Joaquin Valley Air Pollution Control District

The SJVAPCD's Guidance for Addressing and Mitigating Air Quality Impacts provides guidance for evaluating a project's potential to impact air quality, including methods for calculating anticipated criteria air pollutant emissions from the construction and O&M phases of a project (SJVAPCD 2015). Table 3.1-4: SJVAPCD Criteria Air Pollutant Significance Thresholds for Study Area 1A details the applicable criteria air pollutant significance thresholds from the SJVAPCD that may apply to Angeles Link.

Greenhouse Gases

San Joaquin Valley Air Pollution Control District

In 2009, the SJVAPCD adopted its Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under the CEQA (SJVAPCD 2009a) and its district policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009b).

These documents provide a framework for evaluating a project's potential impacts associated with GHG emissions (SJVAPCD 2009a, SJVAPCD 2009b). In this guidance, the SJVAPCD concludes that no one project could generate enough GHG emissions to noticeably change the global climate temperature; therefore, it does not establish a numeric threshold for GHG emissions.

Consistent with CPUC precedent (CPUC 2020a, CPUC 2020b), in the absence of an established numerical threshold from the SJVAPCD, projects may adopt the South Coast Air Quality Management District's (SCAQMD's) recommended approach for construction emissions by amortizing the construction emissions over a 30-year project lifetime and then comparing those emissions to the significance threshold of 10,000 metric tons CO_2e per year.

Table 3.1-4: SJVAPCD Criteria Air Pollutant Significance Thresholds for Study Area 1A

Criteria Air Pollutant	Annual Construction Emissions Thresholds (Tons)	Annual Operational Emissions Thresholds (Tons)	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
CO	100	100	100
NOx	10	10	10
VOCs	10	10	10
SOx	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: SJVAPCD 2015

3.1.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segment C, if built, within Study Area 1A are summarized in Table 3.1-5: Study Area 1A Potential Air Quality and GHG Impact Summary.

Table 3.1-5: Study Area 1A Potential Air Quality and GHG Impact Summary

Potential Impact[32]	Project Phase	Segment C
Air Quality	Construction	Potential Impact
	O&M	Potential Impact
GHGs	Construction	Potential Impact
	O&M	Potential Impact

Air Quality

As noted in Table 3.1-3: Study Area 1A Attainment Status, the segment associated with Study Area 1A would be located in areas currently classified as nonattainment for O_3, $PM_{2.5}$, and PM_{10} in the San Joaquin Valley Air Basin. Construction activities would result in the emissions of criteria air pollutants from the combustion of fossil fuels (e.g., diesel fuel) during on-road vehicle and construction equipment use. In addition,

[32] Section 2.2.5 Impact Analysis contains the full Air Quality and Greenhouse Gas Emissions impact analysis criteria.

ground-disturbing activities would cause additional dust emissions and increases in $PM_{2.5}$ and PM_{10}. Any exceedance of a threshold for a pollutant for which the project area is designated as non-attainment could potentially conflict with or obstruct the implementation of an applicable air quality plan. In locations where construction is planned in close proximity to sensitive receptors, those populations could be exposed to criteria air pollutant concentrations.

O&M activities would typically involve routine inspections and preventive maintenance for service reliability, as well as repairs or upgrades over the life of the pipeline. These activities would require the combustion of fossil fuels associated with on-road vehicle and off-road construction equipment use unless alternative fuel or electric vehicles or equipment would be used. However, because O&M activities would generally be limited to regular inspections, the anticipated criteria air pollutant emissions from routine inspections during O&M would be expected to be less than those during construction.

Based on other construction projects of similar scope and scale, the construction and O&M of pipelines would have the potential to result in criteria air pollutant emissions that exceed potential significance thresholds. A summary of the potential impacts by segment C has been included in Table 3.1-5: Study Area 1A Potential Air Quality and GHG Impact Summary. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are detailed in Section 3.1.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Construction activities would result in GHG emissions from the combustion of fossil fuels (e.g., diesel fuel) during on-road vehicle and off-road construction equipment use unless alternative fuel or electric vehicles or equipment would be used. Similarly, O&M activities would also require the combustion of fossil fuels associated with on-road vehicle and off-road construction equipment use and result in GHG emissions unless alternative fuel or electric vehicles or equipment would be used.

The operation of a hydrogen pipeline would be assumed to result in minimal amounts of GHG emissions. As discussed in the Hydrogen Leakage Assessment, hydrogen transmission has a low potential for leakage (SoCalGas 2024).

Based on other construction projects of similar scope and scale, the construction and O&M of the pipeline segment in Study Area 1A would have a potential to cause impacts related to GHG emissions. A summary of the potential impacts for the segment has been included in Table 3.1-5: Study Area 1A Potential Air Quality and GHG Impact Summary. Potential AMMs that could be implemented to reduce the potential GHG emissions are detailed in Section 3.1.2.3 Potential Avoidance and/or Minimization Measures.

3.1.2.3 Potential Avoidance and/or Minimization Measures

Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A details potential AMMs that could be implemented to

reduce the air quality and GHG emissions from pipeline construction and O&M within Study Area 1A.

Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A

Potential Impact	Potential Avoidance and Minimization Measures
Potential conflict with implementation of applicable air quality plan, net increase of any criteria pollutant or exposure of sensitive receptors to substantial pollutant concentrations during construction	• All construction equipment with rated output between 100 and 750 hp could be required to use engines compliant with U.S. EPA Tier 4 non-road engine standards. • Construction equipment could be maintained and operated to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues could have their engines turned off after five minutes when not in use. Construction activities could also be phased and scheduled to avoid emission peaks, and equipment use could be curtailed during second-stage smog alerts. • During construction, fugitive dust could be controlled by implementing the following measures: – Water or approved dust control products could be applied to exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) at a rate that maintains the soil moisture content to control fugitive dust. – Inactive, disturbed (e.g., excavated or graded areas) soil and soil piles could be watered or sprayed with a soil stabilizer to create a surface crust or could be covered. – Drop heights from excavators and loaders could be minimized. Vehicles hauling soil and other loose material could be covered with tarps. – Speed limits on all unpaved access roads and within work areas could be reduced.
GHG emissions during construction that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation	• Construction equipment with rated output between 100 and 750 hp could be required to use engines compliant with U.S. EPA Tier 4 non-road engine standards. • Construction equipment could be maintained and operated to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues could have their engines turned off after five minutes when not in use. Construction activities could be phased and scheduled to avoid emission peaks, and equipment use could be curtailed during second-stage smog alerts. • Design-based features could be incorporated to minimize the potential for hydrogen leakage. This may include incorporating leak detection and/or leak capture systems.

3.1.3 Biological Resources

3.1.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segment C. Biological resources in Study Area 1A are under the jurisdiction of the CDFW, BLM, and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 1A; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segment within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that 14 vegetation communities would be crossed by Study Area 1A Segment C. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Deciduous orchard, evergreen orchard, vineyard, irrigated row and field crops, annual grassland, urban, and cropland habitats are the predominant habitats present within a 200-foot-wide corridor centered on Segment C.

The habitats and approximate area of each habitat that would be within the segment corridor are summarized in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitat types.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segment C within Study Area 1A would cross existing valley foothill riparian habitat, which would likely be classified as a sensitive natural community within California. Segment C would cross this habitat along Los Gatos Creek near the unincorporated community of Turk.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segment in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment C would cross 31 potentially jurisdictional features. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.1.7.1 Existing Conditions, wetland habitats may be present along these

jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, 10 protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segment C. No protected plant species were identified to have a likely potential to occur within 0.25 mile of Segment C. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near the segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

No protected plant species were identified to have a likely potential to occur within 0.25 mile of Segment C.

Protected Wildlife

As detailed in Table 3.1-7: Protected Wildlife Species Likely to Occur in Study Area 1A, 10 protected wildlife species would be likely to occur within portions of Segment C, and/or within 0.25 mile of the segment centerline. Unless otherwise denoted, the species were identified to have a CNDDB record within 0.25 mile of the segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within Segment C are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), no USFWS-designated critical habitat for any species is present within the 200-foot-wide corridor centered on Segment C.

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segment C would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 1A.

Table 3.1-7: Protected Wildlife Species Likely to Occur in Study Area 1A

Segment	Species Common Name	Listing Status[33]	Approximate Percentage of the Segment Length (miles) Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [34]
Amphibians and Reptiles				
C	Blunt-nosed leopard lizard	SE, FE, FP	33.4	33.1
	California red-legged frog[35]	FT	2.4	2.6
	Western pond turtle[35,36]	FPT	35.2	33.6
	Western spadefoot	FPT	35.3	33.6
Birds				
C	Golden eagle[35,37]	FP	58.6	57.7
	Swainson's hawk[35]	ST	83.1	64.2
	White-tailed kite[35]	FP	51.0	39.4

[33] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered
- FPT: Federally proposed as threatened
- FT: Federally listed as threatened

State listing codes:
- SE: State-listed as endangered
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[34] The buffer includes 0.25 mile on either side of the segment centerline.

[35] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

[36] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

[37] For bald eagles and golden eagles, a one-mile buffer on either side of a segment centerline was used.

Segment	Species Common Name	Listing Status[33]	Approximate Percentage of the Segment Length (miles) Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [34]
Mammals				
C	Giant kangaroo rat[35]	SE, FE	35.3	33.5
	Nelson's antelope squirrel	ST	57.6	56.1
	San Joaquin kit fox	ST, FE	59.0	57.9

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segment C would traverse one BLM ACEC, Kettleman Hills, which covers 6,733 acres of federal land in total within the BLM Bakersfield Field Office. Segment C would cross approximately 3.4 miles of this ACEC, and the 200-foot-wide corridor centered on Segment C would cover approximately 83.4 acres of the ACEC. A goal for this ACEC is to provide suitable habitat for listed species and protection for natural systems and processes (BLM 2014).

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segment C would be located within the Plan Area of the Aera Energy Southwest San Joaquin Valley NCCP/HCP, which is incomplete at this time. Segment C would cross approximately 79.1 miles of the NCCP/HCP plan area. Within the 200-foot-wide corridor, Segment C would overlap approximately 1,911.9 acres of the NCCP/HCP area.

Furthermore, the centerline of Segment C would be located within 0.25 mile of a CDFW-managed land or conservation easement—the Semitropic Ecological Reserve—in Study Area 1A. Segment C would not cross the Semitropic Ecological Reserve. The Special Land Use Designations subsection of Section 3.1.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH Mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segment C would not cross any waterbodies that are managed under a Fishery Management Plan (FMP).

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.1-8: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity. The areas with the highest connectivity ranks would occur predominantly within Segment C where the pipeline would traverse undeveloped lands to the south of the Kettleman Hills and to the east of the historic settlement of Devils Den; in addition, these high connectivity regions generally parallel the Coastal Branch of the California Aqueduct, which could potentially serve as a wildlife corridor.

3.1.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the pipeline, if built, within Study Area 1A are summarized in Table 3.1-9: Biological Resources Potential Impacts in Study Area 1A.

Table 3.1-8: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 1A

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
C	19.6	3.7	25.5	24.3	6.8

Source: CDFW 2019

Protected Species and Their Habitat

Impacts to Protected Amphibian, Mammal, and Reptile Species

Typical construction activities associated with pipeline installation could involve earth-moving/grading, vegetation trimming, and vegetation removal; these activities may adversely affect protected amphibian, mammal, and reptile species that may occur within construction areas. Impacts may include crushing of individuals by construction vehicles and/or the loss of available habitat by vegetation removal or grading activities. Burrows or shelter sites may also be collapsed or removed due to construction activities, which could cause mortality or injury to individuals. Protected species may fall into excavations and become trapped, which could result in mortality or injury. Protected species may be relocated if they are in harm's way, which could result in increased stress or injury from mishandling individuals. Potential impacts to protected species within construction areas may also result from construction noise and ground vibration, as these species may be deterred from inhabiting or foraging in areas near such activities. In addition, temporary impacts associated with nighttime construction activities may result in temporary avoidance of construction areas due to lighting.

Construction activities may result in mortality of protected species along access roads within the temporary construction areas. Construction activities may result in impacts to protected species if invasive weed seeds are spread within occupied habitats during construction. If allowed to establish and spread, these weeds could alter the habitat for protected species. Construction vehicles or equipment would have the potential to spill or leak fuel or other fluids, which could adversely affect habitat quality by reducing forage quality and reducing fecundity of protected species.

Permanent impacts to protected species habitat may occur as a result of construction of access roads and other pipeline system components. Vegetation clearing and grading within these areas would occur and may result in habitat loss or fragmentation.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.1.3.3 Potential Avoidance and/or Minimization Measures.

Table 3.1-9: Biological Resources Potential Impacts in Study Area 1A

Potential Impact	Project Phase	Segment C
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and mammals; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	Potential Impact: Conflict with allowable use or management of land
	O&M	Potential Impact: Conflict with allowable use or management of land

O&M activities would typically involve routine inspections and preventive maintenance for service reliability, as well as repairs or upgrades over the life of the pipeline. Operation of the pipeline would not be anticipated to result in substantial permanent impacts, as the pipeline would be located underground, except for related appurtenant facilities (e.g., compressor stations, valve stations). Maintenance activities would typically involve similar equipment and activities as construction, including vegetation clearing, grading, excavation, use of temporary lighting, use of motor vehicles and off-road construction equipment, and use of permanent access roads. These activities may impact biological resources similar to construction, but only small sections of the pipeline would likely be maintained at any given time.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.1.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction activities associated with pipeline installation could involve earth-moving/grading, vegetation trimming, and vegetation removal; these activities may adversely affect protected bird species' habitats. Impacts to protected bird species may include the removal of nesting or foraging habitat and/or the removal of some food sources. Impacts to individuals may occur if nests are present within areas proposed for grading and/or vegetation clearing. Immature birds may be harmed if their nests are destroyed during construction activities. Construction activities may result in direct injury or mortality to protected bird species as a result of collisions with construction vehicles. Construction activities may also result in impacts to protected bird species if invasive weed seeds are spread within occupied habitats during construction. If allowed to establish and spread, these weeds could alter the species composition of the habitat areas where protected bird species are present, which could potentially result in reduced fecundity of protected bird species.

Temporary impacts to bird species may include the disruption of nesting or foraging behavior due to a temporary increase in the presence of humans, as well as noise from construction equipment and vehicles. Night lighting that would be associated with construction activities may also temporarily affect protected bird species' roosting and foraging behavior. Construction vehicles or equipment would have the potential to spill or leak fuel or other fluids, which may adversely affect habitat quality by reducing forage quality and reducing fecundity of protected bird species.

Permanent impacts to protected bird species' habitat may occur as a result of construction of access roads and other pipeline system components. Vegetation clearing and grading within these areas would occur and may result in habitat loss or fragmentation.

O&M activities would typically involve routine inspections and preventive maintenance for service reliability, as well as repairs or upgrades over the life of pipeline system. Operation of the pipeline would not be anticipated to result in substantial permanent impacts, as the pipeline would be located underground, except for related appurtenant facilities (e.g., compressor stations, valve stations). Maintenance activities would

typically involve similar equipment and activities as construction, including vegetation clearing, grading, excavation, use of temporary lighting, use of motor vehicles and off-road construction equipment, and use of permanent access roads. These activities may impact biological resources similar to construction, but only small sections of the pipeline would likely be maintained at any given time.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Typical construction activities associated with the pipeline installation would involve earth-moving/grading, vegetation removal, and vehicle travel and would have the potential to result in impacts to wetlands, valley foothill riparian habitat, or other sensitive natural communities. Construction of access roads and other pipeline system components sited within wetlands, riparian habitat, or sensitive natural communities may result in habitat loss, degradation, and/or fragmentation. Soil compaction may increase erosion and degrade habitat quality in sensitive natural communities, and generated dust may travel off-site and cover the leaves of plants, further degrading sensitive habitat. Construction vehicles or equipment would have the potential to spill or leak fuel or other fluids that may potentially adversely affect soils. Invasive plants may spread and compete with native plants, thereby degrading sensitive habitat.

Construction activities may impact the quantity and/or quality of water flowing into sensitive natural communities. Construction-related runoff may increase the quantity of water flowing in some areas or increase the level of pollutants entering an area. In addition, construction-related sedimentation may reduce water quality and result in degraded habitat. Construction may result in impacts to federally or state-protected wetlands through the discharge of dredged or fill material from construction activities. Construction activities may also impact the quantity and/or quality of water flowing in or out of wetlands due to erosion and/or sedimentation and result in loss or degradation of wetlands. However, since the pipeline would be located underground (except for related appurtenant facilities), and impacts are anticipated to be short-term and temporary, permanent loss of wetlands, riparian habitat, or other sensitive natural communities would not be anticipated.

O&M activities would typically involve routine inspections and preventive maintenance for service reliability, as well as repairs or upgrades over the life of pipeline. Operation of the pipeline would not be anticipated to result in substantial permanent impacts, as the pipeline would be located underground, except for related appurtenant facilities (e.g., compressor stations, valve stations). Maintenance activities would typically involve similar equipment and activities as construction, including vegetation clearing, grading, excavation, use of motor vehicles and off-road construction equipment, and use of permanent access roads. These activities may impact riparian habitat, other sensitive natural communities, and/or wetlands similar to construction, but only small sections of the pipeline would likely be maintained at any given time.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.1.3.3 Potential Avoidance and/or Minimization Measures.

Wildlife Corridors

Construction activities may interfere with the movement of wildlife. During dispersal and/or other movements, wildlife may collide with construction vehicles or equipment and may be killed or injured. Due to the temporal loss of habitat, wildlife may have less habitat available for sheltering during movement, which could lead to increased predation. Construction noise and/or human activity may also disrupt normal movement behavior, which could reduce movement distances or alter movement patterns. Any new pipeline system components—particularly new access roads or increased use of existing access roads—could create barriers to wildlife movement or change movement patterns, including the disruption of aquatic species due to waterway crossings.

O&M activities would typically involve routine inspections and preventive maintenance for service reliability, as well as repairs or upgrades over the life of pipeline. O&M of the pipeline could result in impacts to wildlife corridors and movement primarily resulting from the use of permanent access roads associated with the pipeline.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.1.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities may conflict with the goals of the Kettleman Hills ACEC, as one of the goals is to provide suitable habitat for protected species. Construction activities could cause temporary and permanent habitat loss and fragmentation within this ACEC.

Construction and O&M activities may conflict with the terms and conditions of the Aera Energy Southwest San Joaquin Valley NCCP/HCP. However, because the NCCP/HCP is not complete at the time of this study, potential conflicts with this plan could not be determined. In addition, construction and O&M activities could conflict with the Semitropic Ecological Reserve. However, consultation with the CDFW would be required to determine potential conflicts with this CDFW conservation easement.

3.1.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. The potential impacts to biological resources and the potential AMMs are detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A.

Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A

Potential Impact	Potential Avoidance and Minimization Measures
Protected species' habitat loss and degradation	• Site-specific habitat restoration actions for impacted protected species habitat could be implemented.
Habitat degradation due to erosion	• An Angeles Link Stormwater Pollution Prevention Plan (SWPPP) and other relevant erosion and sediment control plans could be developed and implemented, and include additional measures for soil protection during construction and O&M.
Habitat degradation or harm to protected species due to spills or leaks of fuel and other fluids	• An Angeles Link Spill Plan or Hazardous Waste Management Plan could be developed and implemented, and include additional measures for spill prevention that may include specific measures for activities like refueling at a project site during construction and O&M, or measures for containment and transport of hazardous materials.
Habitat quality reduction or increased competition due to invasive plants	• Vehicles and equipment could be cleaned prior to entering work sites. • Native vegetation could be reestablished on disturbed sites. • Early detection and eradication measures could be implemented to avoid the spread or new introduction of invasive plants. • Certified weed-free materials could be used.
Habitat fragmentation and loss	• Compensatory mitigation lands and/or off-site mitigation lands could be acquired or enhanced. • Facilities and workspaces could be sited in previously disturbed areas and the minimum space necessary could be used to safely complete the activity. • Workspaces could be delineated with flagging or other clear markings. • Existing access roads could be used, and the construction of new access roads could be minimized.
Wetland habitat quality reduction, fragmentation, or loss	• Wetlands could be avoided or, if impacted, restored to the maximum extent feasible. • Trenchless technologies could be used where feasible to avoid impacts to sensitive resources when rerouting is not possible.

Potential Impact	Potential Avoidance and Minimization Measures
Mortality or injury of wildlife	• Speed limits could be clearly posted and enforced. • Pre-construction sweeps could be conducted for wildlife within workspaces. • A Worker Education Awareness Program could be developed and implemented. • Excavations and trenches could be covered or exclusion fencing or escape ramps could be utilized. • Qualified biologists could oversee and/or conduct any relocations of protected species.
Disruption to breeding or foraging due to vibration and noise	• Avoidance buffers could be implemented for occupied burrows.
Disruption to nesting due to vibration and noise	• Pre-construction nesting bird surveys could be conducted. • Avoidance buffers could be implemented for active nests.
Disruption of wildlife movement	• The establishment of new pipeline system components within wildlife corridors could be avoided and minimized.

3.1.4 Cultural Resources and Tribal Cultural Resources

3.1.4.1 Existing Conditions

In order to assess potential impacts to cultural resources, this study identified resources within a 0.25-mile buffer on either side of the segment centerline and further identified resources within the 200-foot-wide corridor (100 feet on either side of the segment centerline) that are more likely to be impacted by construction of the segment within Study Area 1A. A total of 15 previously documented resources have been identified for Segment C, as detailed in Table 3.1-11: Existing Cultural Resources in Study Area 1A. Of the identified resources, five are within a 200-foot-wide pipeline corridor.

Table 3.1-11: Existing Cultural Resources in Study Area 1A

Segment	Relationship to Segment	Total Identified Resources
C	Within[38] (Segment C)	5
	0.25 mile	10

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 1A was not available for all resources. Until further information can be acquired, the five resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.1.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segment C, if built, within Study Area 1A are summarized in Table 3.1-12: Cultural and Tribal Resources Potential Impacts in Study Area 1A. All eligible and unevaluated resources within Study Area 1A were analyzed to determine if Segment C would intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 1A that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary route for Segment C, and typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.1.4.3 Potential Avoidance and/or Minimization Measures.

[38] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

Table 3.1-12: Cultural and Tribal Resources Potential Impacts in Study Area 1A

Potential Impact	Project Phase	Segment C
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Historical Resources

Construction of the pipeline would include grading of the ground surface to create a level work area followed by trenching to install the pipeline, both of which would have the potential for direct impacts to historical resources. Large-scale infrastructural resources (such as overhead or underground utility lines, roads and highways, aqueducts and other established water conveyance systems, and parks or open space resources) would not likely be subject to any substantial adverse change related to pipeline construction because they are typically avoided. However, other types of eligible and listed sites within the study area that are documented on the ground surface and/or have the potential for subsurface components may be subject to adverse impacts from construction. Construction activities have a potential to cause a change in the significance of historic resources, including built environment resources, if a CRHR- or NRHP-eligible or listed resource were to be impacted either through direct actions, such as alteration or demolition, or by an indirect impact, such as a substantial visual change. In addition, there may be other resources present that have not been previously documented or were not identified during the preliminary GIS data review conducted as part of the desktop analysis. Resources that comprise isolated artifact occurrences are de facto not eligible for NRHP/CRHR listing and would require no further consideration.

O&M activities would involve routine inspections and repairs, as well as potential upgrades over the life of the pipeline. These activities would likely occur within areas previously disturbed during construction. However, O&M activities could occur outside of the construction disturbance footprint and potentially impact unidentified resources.

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.1.4.3 Potential Avoidance and/or Minimization Measures.

Archaeological Resources

Construction of the pipeline would include grading of the ground surface to create a level work area followed by trenching to install the pipeline, both of which would have the potential for direct impacts to archeological resources. Additionally, there may be other resources present that have not been previously documented or were not identified during the preliminary GIS data review conducted as part of the desktop analysis. Construction activities, as well as equipment and personnel staging and movement, may impact ground surface resources and have a potential to cause a substantial adverse change to archaeological resources that may damage or alter surface and/or subsurface deposits.

O&M activities would involve routine inspections and repairs, as well as potential upgrades over the life of the pipeline. These activities would likely occur within areas previously disturbed during construction. However, O&M activities could occur outside of the construction disturbance footprint and potentially impact unidentified archaeological resources.

Human Remains

Construction of the pipeline would include grading of the ground surface to create a level work area followed by trenching to install the pipeline. The GIS data regarding the cultural resources present within the study area do not provide information about the nature of these resources; therefore, it is not feasible to locate human remains through the methods used in this desktop analysis and no human remains are noted in this report. Construction activities have a potential to impact human remains if the work would disturb surface and/or subsurface deposits; however, if human remains were discovered, all project activities would stop and the requirements in California Health and Safety Code Sections 7050.5 and 7052 and Public Resources Code Section 097.98 would be implemented.

O&M activities would involve routine inspections and repairs, as well as potential upgrades over the life of the pipeline. These activities would likely occur within areas previously disturbed during construction. However, O&M activities could occur outside of the construction disturbance footprint and potentially impact unidentified human remains.

Tribal Cultural Resources

At this stage in the high-level desktop review, potential TRCs have not been reviewed within a 200-foot-wide pipeline corridor around Segment C. TCRs could be identified during AB 52[39] consultation between potentially impacted tribes and the lead agency conducting environmental review under CEQA when Angeles Link seeks discretionary permits. Potential TCRs that may be present within a 200-foot-wide pipeline corridor around Segment C could be identified during that consultation process. Construction

[39] See Section 2.4.1 Regulatory Setting for additional information on AB 52.

activities would have the potential to impact a TCR if TCRs are identified within the area that may be impacted by construction activities.

O&M activities would involve routine inspections and repairs, as well as potential upgrades over the life of the pipeline. These activities would likely occur within areas previously disturbed during construction; however, TCRs may include sacred places or ceremonial sites with cultural value to a California Native American tribe and O&M activities would have a potential to impact these sites if any occur within the potential impact area of the segment in this study area.

3.1.4.3 Potential Avoidance and/or Minimization Measures

AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A; measures are provided for identified resources that have the potential to be directly impacted by pipeline installation, as well as for eligible resources within the 0.25-mile buffer to provide surrounding data to assist with future engineering and design. In the case of eligible or listed resources, avoidance through redesign is recommended; if avoidance is not feasible, development of a site-specific treatment plan is recommended. For resources currently categorized as unevaluated, a formal evaluation of the resource is recommended. Additionally, a field survey for any eligible, listed, or unevaluated resource documented within the pipeline route and potential workspaces is recommended to verify location, determine current conditions, and better delineate the potential for impacts.

Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A

Potential Impact	Potential Avoidance or Minimization Measure
Encounter an eligible resource	Avoid through redesign or develop a treatment plan, to the extent practicable.
Encounter a resource of unknown eligibility	Evaluate the resource, if avoidance is not feasible.
Inadvertent discovery of historical and/or TCRs during construction and O&M	If a suspected historical resource, as defined in PRC Section 21084.1, or a suspected TCR, as defined in PRC Section 21074, is discovered during construction and O&M, work could be halted within 100 feet of the resource, until a qualified archaeologist can assess the significance of the resource. Additional measures may be required if the resource is significant.

Potential Impact	Potential Avoidance or Minimization Measure
Inadvertent discovery of human remains during construction and O&M	If human remains are discovered, construction and O&M activities would be halted immediately and the County Coroner could be contacted. If the County Coroner determines that the human remains are those of a Native American, the Coroner would contact the Native American Heritage Commission (NAHC) pursuant to Health and Safety Code Section 7050.5. The NAHC will identify and notify the Tribal Most Likely Descendant (MLD) and the MLD shall advise on treatment of the remains pursuant to Public Resources Code Section 5097.98. In consultation with a qualified archaeologist, the immediate vicinity where the human remains are located would not be disturbed by further project activities until the landowner has consulted with the MLD.

3.1.5 Energy

3.1.5.1 Existing Conditions

The information in the subsections that follow provides a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinance within Fresno, Kern, and Kings counties that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 1A.

Existing Local Energy Use

Electricity

Within Study Area 1A, PG&E is the primary provider of electricity (PG&E 2014a). As detailed in Table 3.1-14: Electricity Consumption in 2022 for Counties Crossed by Study Area 1A, approximately eight billion, 15 billion, and two billion Kilowatt-hours (kWh) of electricity were consumed in Fresno, Kern, and Kings counties in 2022, respectively.

SB 350 established a goal for California to increase the amount of electricity generated from renewable energy resources from 33 percent by 2020 to 50 percent by 2030, and SB 100 advanced the goal to 60 percent by 2030 and included a new goal to reach 100 percent zero-carbon electric sales by 2045. More specifically, 54 percent of PG&E's power came from eligible renewables, such as biomass/waste, geothermal, small hydroelectric, solar, and wind sources. Other large California IOUs including SCE and San Diego Gas & Electric Company (SDG&E), procured 36 percent and 55 percent of their electric power from eligible renewables, respectively. PG&E has committed to a 55 percent renewable energy target by the year 2031. Given PG&E has significant excess eligible RPS procurement to apply in later years, they did not conduct annual RPS procurement solicitations from 2016 through 2022 but requested in their 2022 RPS Plans authorizations to hold solicitations for additional renewables in 2023. The large IOUs (i.e., PG&E, SCE, and SDG&E) forecast that they will have a surplus of renewable generation through 2027 and will exceed their RPS requirements by using online generation from existing contracts with a physical deficit beginning in 2028 (CPUC 2022).

Natural Gas

Within Study Area 1A, PG&E provides natural gas service (PG&E 2014b). As detailed in Table 3.1-15: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 1A, approximately 319 million, two billion, and 64 million therms[40] of natural gas were consumed in Fresno, Kern, and Kings counties in 2022, respectively.

[40] One therm is equal to 100,000 British thermal units (Btu), or 100 thousand Btu (kBtu).

Table 3.1-14: Electricity Consumption in 2022 for Counties Crossed by Study Area 1A

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Fresno County	3,170.5	5,213.9	**8,384.4**
Kern County[41]	2,764.8	1,2096.1	**14,860.9**
Kings County	451.2	1,565.9	**2,017.1**

Source: CEC 2022a

Table 3.1-15: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 1A

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Fresno County	108.4	211.0	**319.4**
Kern County	99.1	1,674.4	**1,773.6**
Kings County	15.0	49.0	**64.0**

Source: CEC 2022a

Diesel and Gasoline

Within Study Area 1A, diesel and regular unleaded gasoline are utilized. Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles. Gasoline sold in California at retail is made up of 90 percent gasoline and 10 percent ethanol (CEC 2023b). Diesel fuel represents 17 percent of total fuel sales and is the second-largest category of transportation fuel used in California. Nearly all heavy-duty trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, construction equipment, and heavy-duty military vehicles and equipment have diesel engines (CEC 2023c).

As detailed in Table 3.1-16: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 1A, approximately 317 million gasoline fuel sales and 85 million diesel fuel sales were estimated in Fresno County, approximately 395 million gasoline

[41] The Kern County figures include data from all of Kern County, which factors in natural gas also provided by SCE. SCE is a subsidiary of Edison International, and it serves approximately 180 cities in 11 counties across central and southern California (SCE 2023).

fuel sales and 226 million diesel fuel sales were estimated in Kern County, and approximately 58 million gasoline fuel sales and nine million diesel fuel sales were estimated in Kings County in 2022.

Some utilities, such as PG&E, have been working to reduce energy consumption from their vehicle fleets by deploying alternative-fuel vehicles, including hybrid-electric bucket trucks and compressed natural gas vehicles. PG&E also offers a variety of incentives and rebates to both residential and commercial customers to offset electrical and natural gas vehicle costs (PG&E 2024b).

Table 3.1-16: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 1A

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Fresno County	371	85
Kern County	395	226
Kings County	58	9

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant local land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Solar Resource Areas

Solar energy generation within California is divided into two main technologies: thermal solar and photovoltaic (PV) solar. Thermal solar facilities with a capacity over 50 megawatts (MW) are licensed by the CEC, while PV solar facilities are used to meet the building efficiency standards of the California RPS requirements (CEC 2024). Solar resource areas were created by the CEC to group solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other. These solar resources areas include facilities with a minimum capacity of one MW (CEC 2022c), but do not have associated land use designations for renewables or any special regulatory requirements. According to the Solar Resources Dataset from the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, all of Study Area 1A overlaps the South Central Valley Solar Resource Area.

Fresno County

Fresno County maintains a list and associated map of the current solar project information within the county, including approved and in-progress PV solar and energy storage projects submitted to Fresno County (Fresno County 2022). The 2000 Fresno County General Plan does not contain policies specifically related to the construction of hydrogen gas or other pipelines. However, Section 853.B.14 of the Fresno County Zoning Ordinance allows for some uses such as public utility and public services, structures, uses and buildings (except where prohibited, within certain land use districts) if the appropriate permit is obtained. Segment C within Study Area 1A would not overlap any approved or in-progress PV solar-generation facilities within Fresno County (CEC 2023e).

Kern County

The Kern County General Plan outlines measures to ensure the safe design, construction, and operation of significant lifeline installations (such as highways, utilities, and pipelines) within the county. The plan emphasizes the importance of avoiding areas with high groundwater and active faults whenever possible, and requiring design features that accommodate potential ground rupture or fault movement without disrupting essential services or endangering public safety. Additionally, the county has committed to reviewing proposed pipelines for alignment with land use plans, promoting environmentally and public health-conscious pipeline development, and maintaining an updated Emergency Response Plan to address refinery accidents and pipeline ruptures effectively.

The Kern County Zoning Ordinance does not contain policies specifically related to the construction of hydrogen gas pipelines; however, it considers the construction of a gas pipeline to be a permitted utility and communication facility use within the certain districts.

No separate renewable energy plan has been developed for Kern County. Kern County provides a list and associated map of the current approved, in-progress, and upcoming wind and solar energy projects within the county (Kern County Planning and Natural Resources Department 2013a). As depicted in as depicted in Attachment C: Energy Resources Maps, Segment C would cross two approved or in-progress PV solar facilities or project sites in Kern County; however, one of the facilities appears to be retired (CEC 2023e). Segment C would also cross a proposed site for the Kern Solar Ranch project. A Notice of Preparation for an EIR was prepared for the Kern Solar Ranch project and published in 2013 (Kern County Planning and Natural Resources Department. 2013b); however, no other CEQA documentation was available, and it appears that the project may not have moved forward (California Governor's OPR 2013, CEC 2015).

Kings County

The 2035 Kings County General Plan has policies that allow community-benefiting renewable energy uses (such as power-generation facilities for thermal, wind, and PV

solar energy) to occur within the agricultural open space areas of the county with appropriate approvals, but notes that they should be directed to lower-priority farmland. The general plan's resource conservation element promotes the development of community-serving wind, solar, hydroelectric, and biomass energy sources within agricultural lands; inclusion of small solar energy systems in urban areas; and energy-efficiency and energy-conservation measures for new building and development.

The County of Kings Development Code Article 1 states that the construction of underground gas pipes is an essential service. There are no guidelines listed in the County of Kings Development Code that specify requirements for hydrogen gas or the construction of pipelines. Pipelines are required to be included in all preliminary and tentative maps prepared for the county. No separate renewable energy plan has been developed for Kings County. Segment C within Study Area 1A would not overlap any approved or in-progress PV solar-generation facilities within Kings County (CEC 2023e).

3.1.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 1A are summarized in summarized in Table 3.1-17: Study Area 1A Potential Impacts.

Table 3.1-17: Study Area 1A Potential Impacts

Potential Impact	Project Phase	Segment C
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact
	O&M	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact
	O&M	No Impact

Energy Consumption

Construction activities associated with the Evaluated Segments, including the segment in this study area, could require fossil fuels (e.g., diesel or gasoline) to power construction equipment and vehicles typically associated with pipeline installation. Energy consumption during construction would not represent a significant amount of the total local energy use within each county and would be expected to fall within the supply and infrastructure service capabilities of the local energy providers. This energy use would also be short-term. The use of energy for construction would be necessary, efficient, and conservative in nature. Although the construction activities would have impacts on energy consumption, the impacts are not likely to result in wasteful, inefficient, or unnecessary consumption of energy during construction. Construction of the Evaluated Segments, including the segment in this study area, would not increase the demand for electricity and fuel resources such that pipeline construction would

conflict with the long-term goals required for publicly owned electric utilities and large and small electric IOUs to achieve RPS requirements.

Typical O&M activities for pipelines[42] are anticipated to involve routine inspections and preventive maintenance for service reliability, as well as repairs or upgrades over the life of the system. Maintenance vehicles would be necessary for normal O&M activities, including periodic inspections, equipment testing, and repairs; and they would also require the use of fuels (e.g., diesel, or gasoline) for motor vehicles trips and occasional use of off-road equipment. Alternatively, these tasks may be performed by hydrogen- or electric-powered motor vehicles and equipment if the technology is readily available at the time of operation. Use of alternative energy vehicles would reduce the reliance on fossil fuels. The O&M energy usage would be minimal in comparison with the total energy consumption within Fresno, Kern, or Kings counties on an annual basis. The use of energy for O&M would be necessary, efficient, and conservative in nature. O&M activities would not be anticipated to result in environmental impacts from wasteful, inefficient, or unnecessary consumption of energy during construction.

Renewable Energy and Energy Efficiency Plans

Construction would likely not increase the demand for electricity and fuel resources such that pipeline construction would conflict with the long-term goals required for publicly owned electric utilities and large and small electric IOUs to achieve RPS requirements. The solar resource area crossed by this study area is expansive and incorporates a large amount of land available for development of PV solar facilities in Fresno, Kern, and Kings counties. Existing approved or in-progress PV solar facilities are present where Segment C would be located in Kern County. Additionally, there are allowances within each of these counties for utilities and pipelines to be constructed in certain areas. The siting and construction of the renewable hydrogen pipeline system may conflict with or obstruct some existing (e.g., existing PV solar facilities) or planned renewable energy projects in this study area and may conflict with local land uses or zoning identified in Fresno, Kern, or Kings counties; however, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Construction activities would still result in short-term impacts on renewable energy projects and energy efficiency plans.

Typical O&M activities for pipelines would require periodic inspections, equipment testing, and repairs of the pipeline and would be anticipated to be less than construction impacts because the pipeline would be located underground, with the exception of some appurtenances. Therefore, O&M activities would likely not conflict with or obstruct any existing or planned future renewable energy and decarbonization goals.

3.1.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.1.5.2 Impact Discussion, potential impacts related to energy are likely to occur during construction of the Evaluated Segments. However, these potential

[42] Non-Linear Facilities are discussed in Section 3.14 Non-Linear Facilities.

impacts could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A

Potential Impact	Potential Avoidance and Minimization Measures
Increased local fuel and electricity demand during construction	• Energy-efficient construction equipment and transportation alternatives could be used where feasible. • Vehicle and equipment trips to and from the site could be minimized where feasible. • Construction of pipeline system could be scheduled so that energy-intensive activities occur during non-peak energy times of day, and/or if necessary, with a reduced construction schedule during extreme weather events (e.g., heatwaves, cold snaps) which correspond to peaks in energy demand.
Conflict with state or local plan for renewable energy or energy efficiency	• Pipeline segment could be sited in areas that would not conflict with existing or planned renewables projects. • Pipeline segment could be sited outside of PV solar facilities. • SoCalGas could coordinate with local agencies concerning local plans and zoning when siting the pipeline.

3.1.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 1A.

3.1.6.1 Existing Conditions

Section 3.1.1 Study Area 1A Description provides a description of the segment, as well as the counties and cities through which the segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 1A are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed no open or closed hazardous materials cases within 1,000 feet of Segment C.

Fire Hazards

The CAL FIRE FHSZs crossed by Study Area 1A are detailed in Table 3.1-19: Fire Hazard Severity Zones Crossed in Study Area 1A. Study Area 1A is located within LRAs and SRAs. These areas are recognized by the Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency.

Table 3.1-19: Fire Hazard Severity Zones Crossed in Study Area 1A

FHSZ	Segment C (Miles)
LRA	
Moderate	24.2
Very High	0.3
Non-Wildland/Non-Urban	34
Urban Unzoned	10.7
SRA	
Moderate	9.4
High	--
Very High	--

Source: CAL FIRE 2024

Schools and Day-Care Centers

No schools or day-care centers are within 0.5 mile of Segment C (U.S. Department of Homeland Security 2024).

Airports

No airports or private airstrips are within two miles of Segment C.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segment C is managed by the following plans:

- Kern County Emergency Operations Plan (EOP) (Kern County 2022),
- Kern County Multi-Jurisdiction Hazard Mitigation Plan (MJHMP) (Kern County 2020),
- 2015 Kings County EOP (County of Kings 2015),
- Kings County MJHMP (County of Kings 2012),
- Fresno County Operational Area Master Plan (County of Fresno 2023), and
- Fresno County HMP (County of Fresno 2018).

These plans provide guidance and procedures to prepare for, respond to, and recover from the effects of large-scale emergencies, natural disasters, or technological incidents. These plans are intended to facilitate multi-jurisdictional and multi-agency coordination and accomplish the following:

- establish the emergency management organization necessary to respond and recover from signification emergencies or disasters;
- provide strategies to comply with the Standardized Emergency Management System and National Incident Management System compliance; and
- provide a platform for planning, responding to, and mitigation impacts from all hazards or potential emergencies.

The HMPs were prepared to meet the requirements of the Disaster Mitigation Act of 2000 in order to assess risks posed by natural hazards and develop a mitigation action plan. The plans describe the processes for developing the mitigation plan, defining community profiles and vulnerable populations, identifying natural hazards, and developing strategies to minimize the impact of any hazard event before it occurs.

3.1.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segment within Study Area 1A are summarized in Table 3.1-20: Study Area 1A Potential Impacts.

Hazardous Materials Transport, Use, or Disposal

Construction activities would involve motor vehicles and construction equipment, which may temporarily or permanently impact the environment due to the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid). These activities could result in an inadvertent release or spill of these materials, primarily due to equipment failure or mishandling during vegetation clearing, grading, and pipe installation.

Table 3.1-20: Study Area 1A Potential Impacts

Potential Impact	Project Phase	Segment C
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact
	O&M	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact
	O&M	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	No Impact
	O&M	No Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	No Impact
	O&M	No Impact
Public Airport and/or Private Airstrip Hazards	Construction	No Impact
	O&M	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact
	O&M	Potential Impact
Wildland Fires	Construction	Potential Impact
	O&M	Potential Impact

An Angeles Link Hazardous Materials Management Plan (HMMP)/Hazardous Materials Business Plan (HMBP) would likely be prepared and implemented throughout construction. The HMMP/HMBP would include safety information regarding the transport, use, and disposal of hazardous materials in compliance with applicable laws, rules, and regulations. In addition, SoCalGas would implement Angeles Link-specific BMPs identified in Storm Water Pollution and Prevention Plans (SWPPPs) so that the transport, use, and disposal of hazardous materials would be conducted in accordance with applicable regulations. Therefore, implementation of the HMMP/HMBP, as well as SoCalGas BMPs described in the SWPPPs, would reduce the likelihood of inadvertent spills originating from hazardous substances during construction. However, potential impacts to the public or the environment could still occur in the event of an accident or spill during the routine transport, use, and disposal of hazardous materials during construction.

O&M activities would involve routine inspections and repairs, as well as potential upgrades over the life of the pipeline. Temporary or permanent impacts may occur from the routine transport, including transport of hydrogen gas, use, and disposal of hazardous materials during O&M of the pipeline.

O&M would be conducted in a similar manner as the O&M activities that are currently performed by SoCalGas on existing natural gas pipelines, as well as in accordance with

any hydrogen-specific safety measures that may be developed by SoCalGas or by any applicable regulators, and SoCalGas would prepare spill prevention plans specific for the O&M phase. The majority of the chemicals used for ongoing O&M activities would be similar to those used during the construction phase, but the daily use of such chemicals may not be required and would generally be considerably less during O&M activities.

Section 3.1.6.3 Potential Avoidance and/or Minimization Measures summarizes AMMs that could be implemented to reduce potential impacts.

Reasonably Foreseeable Upset and Accident Conditions

Construction and installation of the pipeline would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. Temporary or permanent impacts may occur from reasonably foreseeable accident and upset conditions. As previously described, an Angeles Link HMMP/HMBP would likely be prepared and implemented throughout construction, pursuant to Title 24, Part 9 of the California Code of Regulations (CCR) to safeguard life and property from fire and explosions. SoCalGas would implement all applicable BMPs, adopted AMMs, and any required permit or approval conditions to reduce the likelihood of a release or spill of hazardous materials into the environment. Although the implementation of the previously discussed HMMP/HMBP and SWPPP BMPs would minimize the potential of reasonably foreseeable upset and accident conditions, potential impacts could still occur in the event of an accident or spill during construction.

The transportation of hydrogen gas also carries an inherent risk of upset that could result from an inadvertent strike or dig-in by a third party, a leak, or other incident. However, the hydrogen pipeline would be subject to the similar safety considerations as a natural gas pipeline, as well as additional hydrogen-specific safety measures that may be developed by SoCalGas or by any applicable regulators. The Safety Study and the Pipeline Sizing and Design Criteria Study prepared as separate Angeles Link Phase 1 feasibility studies provide more information on the properties of hydrogen, as well as safety measure and design considerations for hydrogen pipelines.

O&M activities would involve routine inspections and repairs, as well as potential upgrades over the life of the pipeline. Temporary or permanent impacts may occur from the reasonably foreseeable accident and upset conditions during O&M. As previously discussed, O&M activities would be conducted in a similar manner as is currently performed by SoCalGas on existing natural gas pipelines, as well as in accordance with any hydrogen-specific safety measures that may be developed by SoCalGas or by any applicable regulators. The daily use of chemicals would generally be considerably less during O&M activities relative to construction activities. However, less frequent use of hazardous materials would still be anticipated.

Section 3.1.6.3 Potential Avoidance and/or Minimization Measures summarizes AMMs that could be implemented to reduce potential impacts.

Hazardous Substances in Close Proximity to Schools

No schools, day-care centers, or preschools are located within 0.25 mile of Segment C. Therefore, construction and O&M would have no potential for temporary or permanent impacts to schools during construction or O&M.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

No open or closed hazardous materials sites were identified within 1,000 feet on either side of Segment C; therefore, no impacts are anticipated from the presence of an existing hazardous materials encountered during construction and O&M.

Public Airport and/or Private Airstrip Hazards

No airports or private airstrips are located within two miles of Segment C. Therefore, construction and O&M would have no impact from the presence of airports or private airstrips near the pipeline.

Emergency Evacuation and Response Plan Interference

Construction along roadways could potentially result in delays to emergency vehicles and potential evacuation routes. However, roadways adjacent to proposed activities would remain open to emergency vehicles and emergency access could likely be maintained during construction. In addition, SoCalGas would obtain necessary encroachment permits and authorizations prior to initiating work that would require road closures or encroachments into public roadways. SoCalGas could also implement traffic control measures in the vicinity of roadways. However, construction could temporarily impair implementation of or physically interfere with emergency evacuation and response plans, and so a potential impact could occur.

As previously discussed, O&M activities would involve routine inspections and repairs, as well as potential upgrades over the life of the pipeline. O&M activities would be conducted in the same manner as they were prior to construction. O&M would be anticipated to require fewer temporary lane closures. If required, SoCalGas would continue to implement all required traffic control measures during O&M to enable emergency vehicles access during potential lane closures. O&M could impair implementation of or physically interfere with emergency evacuation and response plans, and therefore a potential impact could occur.

Wildland Fires

Portions of Segment C are located within Very High FHSZs. High heat or sparks from vehicles or equipment would have the potential to ignite dry vegetation and cause fires. However, vegetation typically would be removed prior to welding or other activities that could create a spark or high heat. Vehicles and equipment would primarily use existing roads and would also use a drive-and-crush method for temporary construction areas containing vegetation. In addition, SoCalGas would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations. Prior to construction, contractors would be required to submit a fire prevention plan to SoCalGas construction management for review and approval. The plan could include

requirements for carrying emergency fire suppression equipment, conducting “tailboard meetings” that cover fire safety discussions, implementing procedural requirements for construction within fire threat zones, restricting smoking and idling vehicles, and implementing restrictions during Red Flag Warnings. The portions of Segment C located within Very High FHSZs would typically be grubbed of vegetation and graded before the staging of equipment, thereby minimizing the potential for vehicles or equipment to start a fire. However, potential impacts to people or structures could result from wildland fires during construction.

As previously discussed, O&M activities would be conducted in a similar manner as is currently performed by SoCalGas on existing natural gas pipelines, as well as in accordance with any hydrogen-specific safety measures that may be developed by SoCalGas or by any applicable regulators. As O&M activities would occur with less frequency than during construction, the potential fire risks would be considerably lower than the risks associated with construction. In addition, SoCalGas would adhere to the previously described fire prevention plan and implement standard fire prevention protocols during O&M, including vegetation management and the maintenance of fire suppression equipment. However, the O&M activities still have a potential to expose people or structures to a risk of loss, injury, or death from wildland fires, especially if such activities needed to occur during particularly dry seasons or years.

Section 3.1.6.3 Potential Avoidance and/or Minimization Measures summarizes AMMs that could be implemented to reduce potential impacts.

3.1.6.3 Potential Avoidance and/or Minimization Measures

The pipeline would generally have a potential for hazards and hazardous materials-related impacts would exist during construction and O&M within Study Area 1A; however, avoidance or minimization measures that could be implemented to reduce potential impacts are detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A.

Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A

Potential Impact	Potential Avoidance and Minimization Measures
Impacts to the public or environment from the release, transport, use, or disposal of hazardous materials during construction and O&M	• An Angeles Link HMMP/HMBP could be prepared and implemented throughout construction. • Angeles Link-specific BMPs identified in SWPPPs could be implemented so that the transport, use, and disposal of hazardous materials would be conducted in a manner that exceeds existing requirements to protect the public and the environment. • Vehicles and construction equipment could be refueled or stored away from any storm drain or water feature. If this is not possible, secondary containment could be used. Refueling of vehicles and construction equipment could be conducted on paved surfaces or within secondary containment, and a spill prevention plan could require spills to be cleaned up immediately.
Accidental release of chemicals during third-party production facility construction and O&M	• Permanent facilities could be sited away from identified hazardous materials sites. • Unanticipated hazardous materials could be profiled, removed, and disposed of at an appropriate facility, or treated on site if treatment could effectively reduce exposure to the public or the environment.
Interference with emergency evacuation and response plan interference	• SoCalGas could coordinate with emergency service providers prior to lane closures or encroachments that could interfere with evacuation routes.
Wildfires during construction or O&M	• Fire prevention protocols could be implemented. • Vehicles and equipment could primarily use existing roads and also utilize drive-and-crush methods for establishment of temporary construction areas with vegetation.

3.1.7 Hydrology and Water Quality

3.1.7.1 Existing Conditions

Segment C would be located in RWQCB Central Valley Region 5. Water resources in Study Area 1A are also under the jurisdiction of the CDFW Central Region 4 and the USACE Sacramento District.

Surface Waters

Study Area 1A would cross 7 USGS watersheds (USGS 2023a). Segment C would cross Antelope Plain, Antelope Plain, Antelope Valley-Antelope Plain, Arroyo Ramoso-El Rincon, Arroyo Torcido-Frontal Tulare Lake Bed, Bitterwater Creek, Cantua Creek-Fresno Slough, and Los Gatos Creek watersheds.

Based on review of NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Study Area 1A would cross 12 named waterbodies, as detailed in Table 3.1-22: Named Waterbodies Crossed by Study Area 1A, as well as 19 unnamed waterbodies. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- two artificial waterways,
- one canal/ditch,
- one connector between waterways, and
- 27 streams/rivers.

Table 3.1-22: Named Waterbodies Crossed by Study Area 1A

Waterbody Name	Segment Crossed	Waterbody Classification
Arroyo Bifido	C	Stream/river
Arroyo Largo	C	Stream/river
Arroyo Somero	C	Stream/river
Arroyo Torcido	C	Stream/river
Arroyo Vadoso	C	Stream/river
Bitterwater Creek	C	Stream/river
Cantua Creek	C	Connector
Coalinga Canal	C	Artificial waterway
Domengine Creek	C	Stream/river
Coastal Branch of the California Aqueduct	C	Artificial waterway
Los Gatos Creek	C	Stream/river

Waterbody Name	Segment Crossed	Waterbody Classification
Salt Creek	C	Stream/river

Source: USGS 2023b

Impaired Surface Waters

As indicated by a review of the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2023), two impaired waterbodies would be crossed by Segment C, as detailed in Table 3.1-23: Impaired Waterbodies Crossed by Study Area 1A. Details regarding the pollutants that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report. The listings associated with the waterbodies specify that lead, selenium, chlorpyrifos, and dichlorodiphenyltrichloroethane (DDT) are the pollutants causing a lack of attainment of water quality standards and identify agriculture and unknown sources as the sources of the pollutant.

Table 3.1-23: Impaired Waterbodies Crossed by Study Area 1A

Waterbody Name	RWQCB Jurisdiction	Pollutant(s)
Los Gatos Creek (Fresno County)	Regional Board 5 - Central Valley Region	Lead, selenium
Cantua Creek (Fresno County)	Regional Board 5 - Central Valley Region	Chlorpyrifos, selenium, DDT

Source: SWRCB 2023

Floodplains

As indicated by a review of the FEMA Flood Hazard Layer (FEMA 2023), Segment C would cross several floodplains, including 100-year floodplains. Floodplains that would be crossed by the segment within Study Area 1A are depicted in Attachment E: Hydrological Maps.

Groundwater

Study Area 1A would cross three groundwater basins (DWR 2022a)—the San Joaquin Valley-Westside, San Joaquin Valley-Kettleman Plain, and San Joaquin Valley-Kern County groundwater basins.

Publicly available data from the DWR (DWR 2022b) was reviewed to estimate existing depths to groundwater, as detailed in Table 3.1-24: Groundwater Readings within Two Miles of Study Area 1A.

Table 3.1-24: Groundwater Readings within Two Miles of Study Area 1A

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
C	28	85.1	618.4

Source: DWR 2022b

Groundwater readings from 37 monitoring wells located within two miles of Segment C were reviewed. The 2022 and 2023 groundwater-depth readings at these monitoring wells range from 68.7 feet below ground surface (bgs) to 618.4 feet bgs. Groundwater levels within Segment C would be expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

3.1.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segment C are detailed in the following subsections. Potential impacts that can be anticipated are summarized in Table 3.1-25: Study Area 1A Potential Impacts.

Table 3.1-25: Study Area 1A Potential Impacts

Potential Impact	Project Phase	Segment C
Water Quality Degradation	Construction	Potential Impact
	O&M	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact
	O&M	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact
	O&M	Potential Impact

Surface Waters

As detailed in Section 3.1.7.1 Existing Conditions in the Surface Waters subsection, 31 mapped waterbodies would be crossed by Segment C, including 12 named waterbodies and 19 unnamed waterbodies. Segment C would cross two impaired waterbodies as defined by the SWRCB California 2020-2022 Integrated Report.

Construction activities commonly utilized for pipeline installation with the potential to impact surface waters include grading, excavation, and trenching. The utilization of these techniques within waterbody crossings could result in temporary impacts to drainage patterns and surface water quality. Any contours or vegetation altered during

construction could be restored to the original conditions to maintain existing drainage patterns.

Grading and excavation activities would have the potential to increase runoff due to changes in surface contours and to expose soil to erosion and subsequent sedimentation, which could conflict with relevant water quality plans and standards in this study area; however, such impacts would be expected to be temporary. Erosion would not be expected to be substantial, particularly with the implementation of erosion and sediment control BMPs. No permanent impacts would be anticipated, as the pipeline construction methods would likely allow for the pipeline to be buried under waterways using conventional and non-conventional construction methods so that potential impacts would be short-term and temporary. Additionally, construction vehicle fuels could directly enter a waterbody during vehicle use or during refueling, or indirectly from any fuels that may spill in upland areas and cause runoff into an adjacent waterbody. Impacts to water quality could be reduced by avoiding installation in locations where sensitive aquatic resources (such as impaired and relatively permanent waterbodies) are located and through the implementation of an Angeles Link SWPPP. Further, any potential to violate water quality standards would be required to be reduced in compliance with the Central Valley RWQCB Region 5 Water Quality Control Plan to ensure the construction of the pipeline construction does not conflict with water quality standards.

O&M would typically involve routine inspections and preventive maintenance for service reliability, as well as repairs or upgrades over the life of the pipeline. Individual O&M activities for the pipeline would be anticipated to be similar to construction activities but would be shorter in duration and may have a smaller impact footprint. O&M would have a potential to impact surface waters.

Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.1.7.3 Potential Avoidance and/or Minimization Measures.

Floodplains

Segment C would be installed within and across the floodplains that are detailed in Section 3.1.7.1 Existing Conditions in the Floodplains subsection. As construction techniques could potentially create an increase in exposed soil and runoff coefficients, pipeline installation has a low potential to temporarily increase the localized risk of flooding. Impacts from construction would be anticipated to be temporary.

O&M within flood areas has an inherent risk of pipeline route inundation if the potentially impacted area is not graded properly. Pipeline route inundation, which can result in a release of pollutants, can be caused by severe flooding on rare occasions (PHMSA 2019a). The pipeline would be installed in accordance with federal standards to reduce the risk of inundation and restoration plans could be developed to ensure post-construction drainage patterns are similar to pre-construction conditions.

Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.1.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 1A, grading or other ground-disturbing construction techniques could result in groundwater encountered during the pipeline installation. However, grading associated with the pipeline is anticipated to be relatively shallow in depth, and generally above the known elevation of groundwater resources in the study area. Groundwater encountered during pipeline installation may be dewatered from open trenches, which are typically up to eight feet in depth but may vary based on the construction techniques utilized. Based on the depth of excavation and localized nature of dewatering during trenching, temporary dewatering would not be anticipated to substantially decrease groundwater supplies or interfere substantially with groundwater recharge. Any impacts to groundwater levels would be anticipated to be temporary and localized.

O&M would typically involve routine inspections and preventive maintenance for service reliability, as well as repairs or upgrades over the life of the pipeline. Pipeline repairs requiring excavation during O&M could require temporary dewatering, resulting in similar impacts to those anticipated during construction. O&M of the pipeline may require the use of water for repairs or testing of the pipeline (i.e., pigging); however, non-groundwater sources can be used.

Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.1.7.3 Potential Avoidance and/or Minimization Measures.

3.1.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segment C. Additional BMPs that could be implemented are detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A.

Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A

Potential Impact	Potential Avoidance and Minimization Measures
Temporary impacts to surface water quality during pipeline construction and maintenance	• Pipelines could be installed using horizontal directional drilling methods under any permanent waterbodies, to the extent feasible. • Specific precautions could be taken so that sediments or deleterious materials are not conveyed into the waterbodies nearby or crossing excavation areas. • Vehicles and construction equipment could be refueled or stored away from any storm drain or water feature. If this is not possible, secondary containment could be used. Refueling of vehicles and construction equipment could be conducted on paved surfaces or within secondary containment, and a spill plan could require spills to be cleaned up immediately. • Surface waters under the jurisdiction of the CDFW, SWRCB, and USACE require authorization from the respective agencies prior to any work or potential impacts. Permits issued by these agencies are likely to have project-specific protection measures as permit conditions. • Erosion and sediment control plans could be developed and implemented, as well as an Angeles Link SWPPP, which could include placement of straw wattles or other soil erosion protection techniques.
Temporary impacts to groundwater from dewatering associated with pipeline construction and maintenance	• Groundwater monitoring could be conducted prior to and/or during construction.
Pipeline route inundation during pipeline operation	• SoCalGas could have a procedure for continuing surveillance of its facilities to determine and take appropriate action concerning changes in class location, failures, leakage history, corrosion, substantial changes in cathodic protection requirements, and other unusual operating and maintenance conditions, and could conduct such surveillance on a more frequent basis during storm season. • Following an extreme weather event that has the likelihood of damage to the pipeline facilities by the scouring or movement of soil surrounding the pipeline or movement of the pipeline,

Potential Impact	Potential Avoidance and Minimization Measures
	SoCalGas could inspect all potentially affected pipeline facilities and take prompt remedial action including, but not limited to: reducing the operating pressure or shutting down the pipeline and modifying, repairing, or replacing any damaged pipeline facilities.

3.1.8 Land Use and Planning

3.1.8.1 Existing Conditions

Section 3.1.1 Study Area 1A Description contains a description of Segment C and Table 3.1-1: Jurisdictions Crossed by Study Area 1A details the distance that Segment C would traverse in each local jurisdiction within Study Area 1A.

Land Use

Segment C would travel southeast along I-5 for approximately half of the segment and then cross the Kettleman Hills. The remainder of Segment C would travel southeast primarily through agricultural or undeveloped land. Segment C would also cross through two solar farms and travel directly adjacent to one solar farm, as well as a few small residential, commercial, and industrial areas. Most of Segment C would be surrounded by agricultural lands with scattered rural residential areas and industrial areas

General plan land use designations that would be crossed by the segment and corridor within each jurisdiction within Study Area 1A are detailed in Table 3.1-27: General Plan Land Use Designations Crossed by Study Area 1A.[43]

Table 3.1-27: General Plan Land Use Designations Crossed by Study Area 1A

Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[44] (acres)
City of Avenal	Agricultural	2.1	54.7
	High-Density Commercial	0.2	5.1
	Industrial	0.3	7.7
	Very Low-Density Residential	N/A[45]	0.7
County of Fresno	Agricultural	28.9	711.7
	High-Density Commercial	N/A[45]	0.1
	Other	N/A[45]	12.2
	Very Low-Density Residential	0.2	5.6
County of Kings	Agricultural	20.0	487.0

[43] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.
[44] The corridor includes 100 feet on either side of the pipeline.
[45] This is not applicable because the pipeline would not cross the land use designation.

Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[44] (acres)
Kern County	Agricultural	25.7	622.0
	Industrial	1.0	24.6

Source: California Governor's OPR 2024

Special Land Use Designations

As described in the following subsections and detailed in Table 3.1-28: Agency-Managed and Protected Lands Crossed by Study Area 1A, Table 3.1-29: Linear Infrastructure Crossed by Study Area 1A, and Attachment F-1: Special Land Use Designations Maps, the segment would cross lands managed by federal, state, and local agencies. Section 3.1.3 Biological Resources contains a discussion of HCP/NCCP boundaries that the segment would cross within Study Area 1A. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Table 3.1-28: Agency-Managed and Protected Lands Crossed by Study Area 1A

Jurisdiction	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[46] (acres)
Federal			
BLM	BLM-Managed Land	0.2	3.9
BLM	Kettleman Hills ACEC[47]	3.4	83.4
Local			
County of Fresno	Williamson Act Property	8.1	209.8
County of Kings	Williamson Act Property	11.0	265.4
Kern County	Williamson Act Property	14.6	353.3

Sources: BLM 2022, California Department of Conservation 2023

[46] The corridor includes 100 feet on either side of the pipeline.
[47] The publicly available data depicts this ACEC as extending outside of BLM-managed lands.

Table 3.1-29: Linear Infrastructure Crossed by Study Area 1A

Agency	Special Land Use	Number of Times Crossed
State		
DWR	California Aqueduct (Coastal Branch)	1

Source: USGS 2023

Lands Managed by Federal Agencies

Segment C would briefly cross BLM-managed land northeast of the City of Avenal, including the Kettleman Hills ACEC, which is managed by the BLM's Bakersfield Field Office under the Bakersfield Resource Management Plan (RMP) as detailed in Attachment F-2: Management and Conservation Plans Map.

The objective of this ACEC is to "protect significant paleontological resources and provide habitat for the suite of San Joaquin Valley listed species including ecologically functioning valley upland habitats." The special management considerations for this ACEC identified it as an exclusion area for ROWs related to utility scale renewable energy projects (BLM 2014).

Lands Managed by State Agencies

Segment C would cross the California Aqueduct (Coastal Branch) at a location east of Devils Den Road in Kings County. The aqueduct is managed by the California DWR.

Segment C would also cross state highways managed by the California Department of Transportation (Caltrans).

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segment C would cross Williamson Act properties. The Williamson Act allows local governments to enter into contracts with private landowners to restrict land to agricultural or related open space uses. Participating counties and cities establish their own rules regarding uses of these properties. The most similar uses to the pipeline are described as follows for each jurisdiction:

- Kern County: The erection, construction, alteration, operation, and maintenance of gas, electric, water, and communication utility facilities and similar public service facilities by corporations and companies under the jurisdiction of the CPUC and by public agencies (Kern County 2013).

- County of Kings: Public utility and public service structures including electric transmission and distribution substations, gas regulator stations, communications

equipment buildings, public service pumping stations, and reservoirs (County of Kings 2020).

- The County of Fresno does not list similar uses for public utilities for these properties (County of Fresno 2011). However, the lack of a similar use for public utilities does not preclude installation of the pipeline within Fresno County.

3.1.8.2 Impact Discussion

The potential for construction and O&M of the pipeline segment to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.1-30: Land Use and Planning Potential Impacts for Study Area 1A.

Table 3.1-30: Land Use and Planning Potential Impacts for Study Area 1A

Potential Impact	Project Phase	Segment C
Divide a community	Construction	No Impact
	O&M	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact
	O&M	Potential Impact

Communities

Construction and O&M activities associated with the pipeline would likely require access to publicly owned and private properties, as well as some new easements, or other landowner approvals for construction and O&M. During construction and O&M activities, some short-term and temporary impacts could occur, but the activities would be unlikely to divide a community. In addition, conventional construction techniques would likely allow roadways to remain open during construction; therefore, construction and O&M activities and any necessary temporary and permanent access roads would not divide a community.

Land Uses

Construction activities may cause potential temporary impacts to land uses through the disruption of the existing or planned land uses during the installation of the pipeline. However, most of the pipeline would be installed underground and restored to the original condition and uses following construction, with the exception of any permanent access roads that would need to be built and used to access the pipeline and appurtenant facilities for O&M. Appurtenant facilities are discussed further in Section 3.14 Non-Linear Facilities.

During any maintenance activities, motor vehicle access or off-road construction equipment access and/or use of the areas above the pipeline could be required. Typical

maintenance would likely involve routine inspections and preventive maintenance for service reliability, as well as repairs or upgrades over the life of the system. O&M activities would be considered permanent impacts, although they would be discrete, short-term events and would likely be similar to those O&M activities currently performed by SoCalGas on existing natural gas pipelines. Additionally, much of the pipeline could be sited within areas that parallel existing SoCalGas infrastructure. Therefore, no conflicts with existing land uses would be anticipated beyond those mentioned for construction.

Segment C could generally follow existing SoCalGas pipeline corridors, public roadways, or unpaved access roads. A portion of Segment C in the Kettleman Hills does not appear to have any existing access, as well as some portions within undeveloped or agricultural areas, so new temporary or permanent access roads could be needed in these areas. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

Segment C could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

Segment C would cross BLM-managed lands, including the Kettleman Hills ACEC, which are managed under the Bakersfield RMP. This ACEC is identified as an exclusion area for ROWs related to utility scale renewable energy projects; therefore, construction and O&M of the pipeline would likely not be considered an allowable use. An existing SoCalGas pipeline corridor traverses this ACEC, but any new construction for the segment may still not be an allowable use. In addition, any work outside of existing easements on BLM-managed land would require a grant of land rights.

State

Segment C could cross state-managed linear infrastructure, including the California Aqueduct and state highways. The segment could require encroachment permits from the DWR and Caltrans for these crossings.[48]

Local

Segment C could cross privately owned Williamson Act properties that have specified agricultural or open space land use designations authorized under the California Land Conservation Act of 1965, which require development to be consistent with these use

[48] While perpendicular crossings would likely be allowable by Caltrans, long parallel easements within Caltrans ROWs or within state highways may not be allowable. For example, approximately 1.7 miles of Segment C as shown would be located within I-5 or the road shoulder. This portion of Segment C would likely be required to be sited west of I-5 and outside of the Caltrans ROW.

designations. Similar uses to the pipeline were identified for these properties within Kern and Kings counties. No similar uses were identified in the County of Fresno.

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated when locating project facilities, SoCalGas would consult with local agencies regarding land use matters. Therefore, coordination with Kings, Kern, and Fresno counties would be anticipated during future planning efforts.

3.1.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, the segment would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a result of construction and O&M of the pipeline; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce potential land use conflicts are detailed in Table 3.1-31: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 1A. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.1-31: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 1A

Potential Impact	Potential Avoidance and Minimization Measures
Land use conflict with BLM ACEC	The pipeline could be routed outside of the BLM ACEC boundary, to the extent feasible.

3.2 STUDY AREA 1B

3.2.1 Study Area 1B Description

Study Area 1B includes Segment B, as depicted in Figure 3.2-1: Study Area 1B Overview Map. Segment B would traverse approximately 46 miles of Los Angeles County through the cities of Lancaster, Los Angeles, Palmdale, and Santa Clarita. This segment is also included in the ARCHES application and collectively are considered along with Segment C in Study Area 1A to comprise the ARCHES segments of Angeles Link. This segment is also part of the Collection Zone.

Table 3.2-1: Jurisdictions Crossed by Study Area 1B details the distance in miles that Segment B would cross through each jurisdiction. Segment B is also part of the Collection zone, which is comprised of Segments D, E, G, I, J, K, L, M, and Y. Segment B would generally connect the northern part of Los Angeles to Lancaster in an east-west direction through the pass between the San Gabriel Mountains and the Angeles National Forest (ANF) and into the Antelope Valley.

Table 3.2-1: Jurisdictions Crossed by Study Area 1B

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
B	46	City of Lancaster	7
		City of Los Angeles	1
		City of Palmdale	6
		City of Santa Clarita	9
		Unincorporated Los Angeles County	22

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

3.2.1.1 Summary of Potential Impacts

Segment B within this study area is preliminary, and the actual routing, engineering, and design and construction methods for the segment has not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, the segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of Segment B and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.2-2: Study Area 1B Potential Impact Summary summarizes the potential impacts identified for the segment within Study Area 1B.

Table 3.2-2: Study Area 1B Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of the segment
Biological Resources	• Potential impacts to species and habitat during construction and O&M of the segment • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M of the segment • Potential impacts to wetlands during construction and O&M of the segment • Potential impacts to wildlife movement and migration corridors during construction and O&M of the segment
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of the segment • Potential to change the significance of an archeological resource during construction and O&M of the segment • Potential to disturb human remains during construction and O&M of the segment • Potential to change the significance of a TCR during construction and O&M of the segment
Energy	• Potential impacts to existing energy resources during construction of the segment • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of the segment
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of the segment • Potential for a foreseeable upset or accident conditions during construction and O&M for the segment • Potential impacts to schools in close proximity to pipeline construction and O&M of the segment • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for the segment • Potential impacts to public airports and/or private airstrips during construction of the segment • Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of the segment

Environmental Factor	Potential Impact
	• Potential to contribute to wildland fires during construction and O&M of the segment
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of the segment • Potential impacts to ground water quality and/or depletion during construction and O&M of the segment • Potential impacts to floodplains during construction and O&M of the segment
Land Use and Planning	• No impacts for the segment

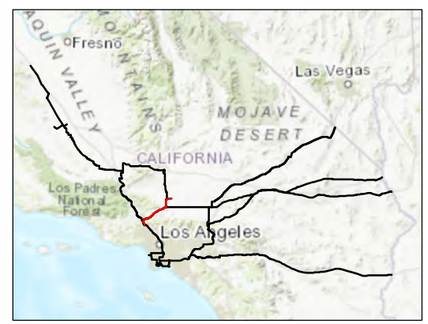
Figure 3.2-1: Study Area 1B Overview Map

Angeles Link Phase 1 Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- B
- Adjacent/Other Study Area Visible



SoCalGas

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3.2.2 Air Quality and Greenhouse Gas Emissions

3.2.2.1 Existing Conditions

Section 3.2.1 Study Area 1B Description provides a description of the segment and the cities and counties that would be crossed by Segment B. Study Area 1B includes Segment B of the Evaluated Segments.

As depicted in Attachment A: Air Basins and Air Districts Maps, most of Segment B would be located in the South Coast Air Basin (SCAB) under the jurisdiction of the SCAQMD. The local topography and climate result in a high potential for air pollution in the SCAB. During the summer months, it is common for a warm air mass to descend over the cool, moist marine layer. The warm upper layer caps the marine layer and prevents pollutants from dispersing upward. The SCAB has an arid climate and receives abundant sunshine and little rainfall.

As depicted in Attachment A: Air Basins and Air Districts Maps, a portion of Segment B would be located in the Mojave Desert Air Basin (MDAB) under the jurisdiction of the Antelope Valley Air Quality Management District (AVAQMD). The MDAB is bounded by the Colorado River Valley to the south and east, and by mountains to the north and west. Prevailing winds in the MDAB are out of the west and southwest due to the proximity of the MDAB to the state's coastal and central regions and the blocking nature of the Sierra Nevada to the north. The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert.

Attainment Status

Table 3.2-3: Study Area 1B Attainment Status summarizes the current attainment status for the criteria air pollutants with the CAAQS and NAAQS for the air basins within Study Area 1B.

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Table 3.2-3: Study Area 1B Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
SCAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Nonattainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A
MDAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segment.
Source: CARB 2023

Air Quality

South Coast Air Quality Management District

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace its current CEQA Air Quality Handbook, which was approved in 1993 and provides guidance for evaluating a project's potential to impact air quality. The SCAQMD released updated air quality significance thresholds in March 2023 for criteria air pollutants to address the U.S. EPA's redesignation of the Coachella Valley to extreme non-attainment for the 2008 O_3 NAAQS.

These thresholds are presented in Table 3.2-4: SCAQMD Criteria Air Pollutant Significance Thresholds for Study Area 1B. The SCAQMD also requires the implementation of its Localized Significance Thresholds for projects within the district to evaluate potential impacts to sensitive receptors (SCAQMD 2023a).

Table 3.2-4: SCAQMD Criteria Air Pollutant Significance Thresholds for Study Area 1B

Criteria Air Pollutant	Daily Construction Emissions (Pounds)	Daily Operation Emissions (Pounds)
NO_X	100	100
VOCs	75	75
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
CO	550	550
Lead	3	3

Source: SCAQMD 2023a

Antelope Valley Air Quality Management District

The AVAQMD's CEQA and Federal Conformity Guidelines provide direction on calculating the emissions and assessing the potential impacts from projects within the district (AVAQMD 2016). Table 3.2-5: AVAQMD Criteria Air Pollutant Significance Thresholds details the annual and daily emissions thresholds for projects within the AVAQMD's jurisdiction that may be applicable to Segment B. A multi-phased project (e.g., those with separate construction and operational phases) with phases shorter than one year can be compared to the daily emission threshold while others should use the annual threshold.

Table 3.2-5: AVAQMD Criteria Air Pollutant Significance Thresholds for Study Area 1B

Criteria Air Pollutant	Annual Emissions (Tons)	Daily Emissions (Pounds)
CO	100	548
NO_X	25	137
VOCs	25	137
SO_X	25	137
PM_{10}	15	82
$PM_{2.5}$	12	65
H_2S	10	54
Lead	0.6	3

Source: AVAQMD 2016

Greenhouse Gases

South Coast Air Quality Management District

SCAQMD staff are convening an ongoing GHG working group to determine appropriate significance thresholds for project emissions. On December 5, 2008, the SCAQMD Governing Board adopted interim GHG significance threshold for projects and provided draft guidance to assist with these determinations (SCAQMD 2023b). For industrial projects, the SCAQMD considers any project with emissions in excess of 10,000 metric tons per year of CO_2e emissions, including construction emissions amortized over 30 years and added to the operational GHG emissions, to be potentially significant.

Antelope Valley Air Quality Management District

The AVAQMD has established a daily CO_2e threshold of 548,000 pounds and a CO_2e threshold of 100,000 tons per year for GHG emissions.

3.2.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segment B, if built, within Study Area 1B are summarized in Table 3.2-6: Study Area 1B Potential Air Quality and GHG Impact Summary.

Air Quality

As noted in Table 3.2-3: Study Area 1B Attainment Status, Segment B would be located in areas currently classified as nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the

segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.2.2.3 Potential Avoidance and/or Minimization Measures.

Table 3.2-6: Study Area 1B Potential Air Quality and GHG Impact Summary

Potential Impact	Project Phase	Segment B
Air Quality	Construction	Potential Impact
	O&M	Potential Impact
GHGs	Construction	Potential Impact
	O&M	Potential Impact

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are detailed in Section 3.2.2.3 Potential Avoidance and/or Minimization Measures.

3.2.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 1B and all AMMs are also applicable to this study area.

3.2.3 Biological Resources

3.2.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segment B. Biological resources in Study Area 1B are under the jurisdiction of the CDFW and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 1B; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segments within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that 17 vegetation communities would be present within Study Area 1B Segment B. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Urban, mixed chaparral, coastal scrub, annual grassland, barren, sagebrush, juniper, and Joshua tree habitats are the predominant habitats present within a 200-foot-wide corridor centered on Segment B. The habitats and approximate area of each habitat that would be within each segment corridor are detailed in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitat types.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segment B within Study Area 1B would cross existing lacustrine, valley foothill riparian, and Joshua tree habitats that would likely be classified as a sensitive natural communities within California. Segment B would cross existing lacustrine habitat where the segment would cross the California Aqueduct. However, lacustrine habitat at this location would not be classified as a sensitive natural community because the feature is concrete-lined and not vegetated. Segment B would cross existing valley foothill riparian habitat that is present along Newhall Creek near the City of Santa Clarita. Segment B would also cross existing Joshua tree habitat that is present in areas south of the City of Lancaster.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segment in this study area; however, field surveys would be needed to determine the presence and extent of these communities. For example, vernal pools may be located within Study Area 1B as protected species that are closely associated with vernal pools are likely to occur, as discussed in the Protected Species subsection of Section 3.2.3.1 Existing Conditions.

Wetlands

Segment B would cross 63 potentially jurisdictional features. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.2.7.1 Existing Conditions, wetland habitats may be present along these jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, two protected plant species and 11 protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segment B. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near the segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

As detailed in Table 3.2-7: Protected Plant Species Likely to Occur in Study Area 1B, two protected plant species would be likely to occur within portions of Segments B in this study area and/or within 0.25 mile of the segment centerline. Unless otherwise noted, the species were identified to have a CNDDB record within 0.25 mile of the segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Protected Wildlife

As detailed in Table 3.2-8: Protected Wildlife Species Likely to Occur in Study Area 1B, 11 protected wildlife species would be likely to occur within portions of Segment B in this study area and/or within 0.25 mile of the segment centerline. No CNDDB records of protected wildlife species were identified within 0.25 mile of the segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Table 3.2-7: Protected Plant Species Likely to Occur in Study Area 1B

Segment	Species Common Name	Listing Status[49]	Approximate Percentage of the Segment Length (miles) Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[50]
B	California Orcutt grass	SE, FE	19.1	18.7
	Joshua tree[51]	SC	3.0	1.8

Sources: CDFW 2023d and CDFW 2023e

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), Segment B would be located within USFWS-designated critical habitat for the coastal California gnatcatcher. Segment B would cross approximately 1.6 miles of critical habitat for the coastal California gnatcatcher. USFWS-designated critical habitat for the coastal California gnatcatcher is located within undeveloped hills to the southeast of the City of Santa Clarita.

National Oceanic and Atmospheric Administration National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segment B would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 1B.

[49]Explanation of listing status codes:

Federal listing code:
- FE: Federally listed as endangered

State listing codes:
- SE: State-listed as endangered
- SC: State Candidate for Listing

[50]The buffer includes 0.25 mile on either side of a segment centerline.

[51] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

Table 3.2-8: Protected Wildlife Species Likely to Occur in Study Area 1B

Segment	Species Common Name	Listing Status [52]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur (miles)	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[53]
Amphibians and Reptiles				
B	Arroyo toad	FE	0.2	0.4
	California red-legged frog	FT	21.6	23.4
	Desert tortoise	SE, FT	2.9	3.8
	Western pond turtle[54]	FPT	21.2	23.7
	Western spadefoot	FPT	4.3	3.3
Birds				
B	Coastal California gnatcatcher	FT	3.5	3.9
	Least Bell's vireo	SE, FE	0.1	0.2
	Golden eagle[55]	FP	50.3	52.5
	Swainson's hawk	ST	22.0	21.85
	Tricolored blackbird	ST	0.0	<0.1
	White-tailed kite	FP	52.4	52.9

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

[52] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered
- FT: Federally listed as threatened
- FPT: Federally proposed as threatened

State listing codes:
- SE: State-listed as endangered
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[53] The buffer includes 0.25 mile on either side of a segment centerline.

[54] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

[55] For bald eagles and golden eagles, a one-mile buffer on either side of a segment centerline was used.

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segment B would not be located within any BLM-designated ACECs in Study Area 1B.

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segment B would not be located within the plan area of any NCCP or HCP in Study Area 1B.

Furthermore, the centerline of Segment B would not be located within 0.25 mile of any CDFW-managed lands or conservation easements in Study Area 1B. The Special Land Use Designations subsection of Section 3.2.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH Mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segment B would not cross any waterbodies in Study Area 1B that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.2-9: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 1B. The areas with the highest connectivity ranks occur predominantly where Segment B would traverse undeveloped canyons and mountainous terrain to the southwest of the unincorporated community of Agua Dulce.

Table 3.2-9: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 1B

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
B	24.7	0	8.8	8.8	3.3

Source: CDFW 2019

3.2.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 1B are summarized in Table 3.2-10: Biological Resources Potential Impacts in Study Area 1B.

Table 3.2-10: Biological Resources Potential Impacts in Study Area 1B

Potential Impact	Project Phase	Segment B
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and plants; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	No Impact
	O&M	No Impact

Protected Species and Their Habitat

Impacts to Protected Plant Species

Typical construction activities associated with pipeline installation (i.e., earth-moving/grading, vegetation removal, and vehicle travel) could have the potential to result in mortality of protected plant species that could occur within construction areas. These activities may result in the loss of individual protected plant species, disturbance of their seed banks due to topsoil movement or removal, or the introduction of invasive species that could outcompete protected plant species and thereby reduce long-term viability. Temporary direct impacts to protected plant species may also include unauthorized collection or trampling by construction personnel.

Temporary indirect impacts to protected plant species both within and near construction areas could result from construction-related runoff, sedimentation, and erosion, which would have the potential to alter site conditions sufficiently to favor the establishment of other native and invasive species. In addition, construction-related runoff, sedimentation, and erosion may impact the quantity and/or quality of water flowing into vernal pools. This may impact the soil characteristics and moisture conditions of vernal pools, which could create less favorable conditions for protected plant species (including California Orcutt grass, which is closely associated with vernal pools).

Vernal pools may also be removed or destroyed due to construction activities including grading. Construction-related dust could reduce the metabolic rates of protected plant species within and in the vicinity of construction areas, thus affecting long-term survival. Construction vehicles or equipment would have the potential to spill or leak fuel or other fluids, which may adversely affect soils by creating unfavorable conditions for protected plant species.

Permanent impacts to protected plant species' habitat may occur as a result of construction of access roads and other pipeline system components. Vegetation clearing and grading within these areas would occur and may result in habitat loss or fragmentation.

O&M activities would typically include routine inspections and preventive maintenance for service reliability. Operation of the pipeline would not be anticipated to result in substantial permanent impacts, as the pipeline would be located underground, except for related appurtenant facilities (e.g., compressor stations, valve stations). Maintenance activities would typically involve similar equipment and activities as construction, including vegetation clearing, grading, excavation, and use of off-road construction equipment and motor vehicles. These activities may impact biological resources similar to construction, but only small sections of the pipeline would likely be maintained at any given time.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.2.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 1B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.2.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Amphibian and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 1B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.2.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Construction and O&M activities could have the potential to result in impacts to riparian habitat or other sensitive natural communities, including valley foothill riparian and Joshua tree habitats that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wetlands, Riparian Habitat, or Other Sensitive Natural Communities subsection, would not differ within Study Area 1B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.2.3.3 Potential Avoidance and/or Minimization Measures.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 1B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.2.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities could impact the physical and biological features necessary to support USFWS-designated critical habitat for the coastal California gnatcatcher. A more detailed analysis, as well as consultation with USFWS, may be required to determine potential impacts to this critical habitat.

Construction and O&M activities would not conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans.

3.2.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 1B with the exception of the AMMs detailed in Table 3.2-11: Biological Resources Potential Avoidance and Minimization Measures in Study Area 1B.

Table 3.2-11: Biological Resources Potential Avoidance and Minimization Measures in Study Area 1B

Potential Impact	Potential Avoidance and Minimization Measures
Crushing of protected plant species	• Protected plant species could be flagged and avoided. • Protected plant species could be relocated.
Degradation of vernal pool habitat	• Vernal pools could be delineated and avoided.
Reduction in photosynthesis of protected plant species	• Dust control measures could be implemented.
Reduction in habitat quality or recruitment of protected plant species due to soil compaction	• Temporary matting or plating could be utilized if work would occur in protected plant species' habitat. • Topsoil could be salvaged prior to grading temporary work areas.

3.2.4 Cultural Resources and Tribal Cultural Resources

3.2.4.1 Existing Conditions

A total of 151 previously documented resources have been identified within 0.25-mile buffer of Study Area 1B, as detailed in Table 3.2-12: Existing Cultural Resources in Study Area 1B. Of these resources, 37 are within a 200-foot-wide pipeline corridor.

Table 3.2-12: Existing Cultural Resources in Study Area 1B

Segment	Relationship to Segment	Total Identified Resources
B	Within[56]	37
	0.25 mile	114

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 1B was not available for all resources. Until further information can be acquired, all of the 37 resources within the 200-foot-wide pipeline corridor should be considered as potentially eligible resources that may be impacted by the proposed undertaking.

3.2.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segment B, if built, within Study Area 1B are summarized in Table 3.2-13: Cultural and Tribal Resources Potential Impacts for Study Area 1B.

Table 3.2-13: Cultural and Tribal Resources Potential Impacts for Study Area 1B

Potential Impact	Project Phase	Segment B
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

[56] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

All known eligible and unevaluated resources within Study Area 1B were analyzed to determine if Segment B could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 1B that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary routes for Segment B, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.2.4.3 Potential Avoidance and/or Minimization Measures.

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources subsection. Construction and O&M activities would have the potential for direct impacts to historical resources identified within Segment B.

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.2.4.3 Potential Avoidance and/or Minimization Measures.

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for the segment in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Construction and O&M activities would have the potential for direct impacts to human remains for the segment in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Constructions and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during AB 52 consultation with tribes.

3.2.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or

currently unevaluated resource that could be impacted during construction are detailed in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.2.5 Energy

3.2.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within Los Angeles County that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 1B.

Existing Local Energy Use

Electricity

County of Los Angeles

Within Study Area 1B in Los Angeles County, SCE is the primary provider of electricity (SCE 2023). As detailed in Table 3.2-14: Electricity Consumption in 2022 for Counties Crossed by Study Area 1B, approximately 68 billion kWh of electricity were consumed in Los Angeles County in 2022.

Table 3.2-14: Electricity Consumption in 2022 for Counties Crossed by Study Area 1B

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	23,255.5	45,229.5	**68,485.0**

Source: CEC 2022a

SCE receives electric power from a variety of sources. According to the CPUC's 2022 California RPS Annual Report, 36 percent of SCE's power in 2022 came from eligible renewables, such as biomass/waste, geothermal, small hydroelectric, solar, and wind sources. Although SCE maintains a lower percentage of renewable energy procurement when compared with California's two other largest IOUs, PG&E and SDG&E (which procured 54 percent and 55 percent of their electric power, respectively, from eligible renewables), SCE is forecasted to meet their overall 2021-2024 compliance period requirement of 44 percent and was granted approval to hold RPS solicitations for additional renewables in 2022 and 2023. The large IOUs (i.e., PG&E, SCE, and SDG&E) forecast that they will have a surplus of renewable generation through 2027 and will exceed their RPS requirements by using online generation from existing contracts with a physical deficit beginning in 2028 (CPUC 2022).

City of Los Angeles

Within Study Area 1B in the City of Los Angeles, the Los Angeles Department of Water and Power (LADWP) is the primary provider of electricity (City of Los Angeles 2020). According to the LADWP 2022 Power Content Label, 35.6 percent of LADWP's

electricity came from eligible renewables,[57] such as biomass/waste, geothermal, small hydroelectric, solar, and wind sources (LADWP 2022a).

Within the City of Los Angeles, LADWP reports the typical residential customer uses 500 kWh per month and business and industry consume about 70 percent of the electricity. The City of Los Angeles' energy future is guided by the Power Strategic Long-Term Resource Plan (SLTRP), a roadmap for providing reliable and sustainable electricity to customers with a 25-year planning horizon. The SLTRP is updated periodically and incorporates community input through robust outreach and engagement (LADWP 2022b).

Natural Gas

Within Study Area 1B, SoCalGas provides natural gas service (SoCalGas 2024). As detailed in Table 3.2-15: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 1B, approximately 3 billion therms[58] of natural gas were consumed in Los Angeles County in 2022.

Table 3.2-15: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 1B

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	1,122.3	1,698.0	**2,820.3**

Source: CEC 2022a

Diesel and Gasoline

Within Study Area 1B, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

As detailed in Table 3.2-16: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 1B, approximately 3 billion gasoline fuel sales and 295 million diesel fuel sales were estimated in Los Angeles County in 2022.

[57] The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology.
[58] One therm is equal to 100,000 Btu, or 100 kBtu.

Table 3.2-16: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 1B

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Los Angeles County	3,070	295

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Desert Renewable Energy Conservation Plan

The DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties (BLM 2016). A portion of Segment B is within the DRECP area, as depicted in Attachment C: Energy Resources Maps. The DRECP is a multi-phase collaborative planning effort between the CEC, CDFW, BLM, and USFWS. The DRECP has three integrated components that include a BLM Land Use Plan Amendment (LUPA) to the California Desert Conservation Act Plan, the Bakersfield Regional Management Plan, and the Bishop Regional Management Plan; a USFWS General Conservation Plan; and a CDFW NCCP. The DRECP is meant to accomplish the following:

- advance federal and state natural resource conservation goals and other federal land management goals;
- meet the requirements of the ESA, CESA, Natural Community Conservation Planning Act, and Federal Land Policy and Management Act; and
- facilitate the timely and streamlined permitting of renewable energy projects in the Mojave Desert and Colorado/Sonoran Desert regions of Southern California.

The DRECP identifies existing utility corridors and recognizes conservation management areas, which restrict siting and construction activities to those existing utility corridors and new renewables projects to minimize resource impacts by reducing the need for new, unplanned transmission infrastructure. To date, only the BLM has implemented the LUPA component of the DRECP. As part of the DRECP LUPA, the BLM designated 388,000 acres as Development Focus Areas (DFAs) for renewable energy development; these DFAs have been pre-screened for development potential and minimal resource conflicts, provide opportunities for streamlined renewables

development, and have CMAs that provide certainty and incentives for utility-scale renewables energy generation. In addition to the DFAs, nearly 500,000 acres of public land exists outside the DFAs and could also be considered for renewable energy development; these areas include Variance Process Lands (VPLs) (40,000 acres), General Public Lands (GPLs) (419,000 acres), and a small portion of Extensive Recreation Management Areas (ERMAs) (35,000 acres). However, these public lands have not been pre-screened and therefore do not provide the same opportunities to streamline development, though they may be available for future use. The DFAs and other public lands that could be appropriate for renewable development would provide enough area to support the nearly 20,000 MW of renewable energy development anticipated to occur in the desert through 2040; however, only a portion of the DFAs are on BLM-managed land (BLM 2015). In order for the GPLs or the ERMAs to be considered for renewables projects, a plan amendment would be required for the DRECP.

The northeastern portion of Segment B falls within private land within the DRECP area; however, a majority of the segment follows existing SoCalGas pipeline corridors. In addition, Segment B would not cross any BLM-managed lands within the DRECP.

Solar Resource Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group solar-generating facilities into regions based on their proximity to the coastline and each other (CEC 2024). According to the Solar Resources dataset from the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, all of Study Area 1B overlaps the Tehachapi Solar Resource Area.

Los Angeles County

In 2016, Los Angeles County Department of Public Works (LADPW) set a Net Zero Energy goal to offset its energy usage by generating renewable energy at LADPW facilities. As a commitment to this goal, LADPW developed a REMP as a high-level roadmap to offset grid energy usage through renewable energy generation at LADPW facilities. Sites identified for potential renewable energy generation are listed in the REMP (County of Los Angeles 2020). Segment B within Study Area 1B would not overlap any approved or in-progress PV solar-generation facilities within Los Angeles County (CEC 2023c).

3.2.5.2 Impact Discussion

The segment within this study area is preliminary, and the actual routing, engineering, and design has not been determined; therefore, the impacts to existing energy resources cannot be quantified at this time. However, based on the geographic location and the understating of typical pipeline construction and O&M activities, impacts that would be expected are described in the following subsections and the potential impacts are summarized in Table 3.2-17: Study Area 1B Potential Energy Impacts.

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Table 3.2-17: Study Area 1B Potential Energy Impacts

Potential Impact	Project Phase	Segment B
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact
	O&M	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact
	O&M	No Impact

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.2.5.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts in Study Area 1B would be similar to those identified for Study Area 1A, with the exception of the DRECP area discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the DRECP subsection and would include short-term construction impacts. The segment in Study Area 1B may conflict with local land uses or zoning identified in Los Angeles County; however, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link.

As mentioned, Study Area 1B differs from Study Area 1A in that it contains areas that are within the DRECP area. The DRECP designates specific land uses (e.g., DFAs, VPLs, GPLs, and ERMAs) within the DRECP area where development of utility-scale renewable energy is encouraged or determined to be suitable. These land use designations are only applicable to BLM-managed lands because the BLM is currently the only agency that has adopted the DRECP and amended its management plans accordingly. The DRECP also provides a streamlined permitting process for renewable energy generation and transmission projects within the DFAs on BLM-managed land. Construction activities would not be within or near any DFAs identified for renewables development and would not conflict with or obstruct future renewable energy projects facilitated by the DRECP on DFAs identified for renewables development. In addition, a

majority of Segment B that is within the DRECP follows existing SoCalGas pipeline corridors. Therefore, construction activities would not conflict with or obstruct any state or local plan for renewable energy or energy efficiency. In addition, typical O&M activities would not conflict with or obstruct future renewable energy projects facilitated by the DRECP on DFAs identified for renewables development.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.2.5.3 Potential Avoidance and/or Minimization Measures.

3.2.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.2.5.2 Impact Discussion, potential impacts would be anticipated to occur during construction of the Evaluated Segments. However, these potential impacts would be unlikely to result in significant environmental impacts or conflicts with a state or local plan for renewable energy and could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

3.2.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 1B.

3.2.6.1 Existing Conditions

Section 3.2.1 Study Area 1B Description provides a description of the segment, as well as the counties and cities through which the segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 1B are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed one open hazardous materials case and 18 closed hazardous materials cases within 1,000 feet of Segment B. The open case (Honda Oil and Gas [Newhall Refinery]) is located adjacent to and east of Segment B along Clampitt Road in the Newhall neighborhood of the City of Santa Clarita.

The site was previously operated as an oil refinery and a site inspection conducted in April 2013 confirmed the presence of stained soils, improperly sealed soil borings, flooded sumps and manways, aboveground storage tanks, and dumped tires and debris. No further correspondence or cleanup actions were specified on GeoTracker beyond the April 2013 site inspection. Therefore, contaminated soil and/or groundwater may be present in or adjacent to Segment B within the boundaries of the former Newhall Refinery.

Fire Hazards

The CAL FIRE FHSZs that would be crossed by the Study Area 1B segments are detailed in Table 3.2-18: Fire Hazard Severity Zones Crossed by Study Area 1B (CAL FIRE 2024). Study Area 1B is located within LRAs and SRAs.

Schools and Day-Care Centers

Schools and day-care centers within 0.5 mile of Study Area 1B are presented in Table 3.2-19: Schools and Day-Care Centers within 0.5 Mile of Study Area 1B.

Airports

Two airports are located within two miles of Segment B. The Palmdale Regional Airport is located approximately 1.9 miles east of Segment B and the Agua Dulce Airport is located approximately 0.6 mile north of Segment B.

A portion of Segment B would be located within the Area of Influence designated for the Palmdale Airport. The Area of Influence is the area encompassed by the planning boundary established by an Airport Land Use Compatibility Plan.

Table 3.2-18: Fire Hazard Severity Zones Crossed by Study Area 1B

FHSZ	Segment B (Miles)
SRA	
Moderate	0.1
High	0.7
Very High	19.7
LRA	
Urban Unzoned	--
Moderate	--
High	--
Very High	8.8

Source: CAL FIRE 2024

Table 3.2-19: Schools and Day-Care Centers within 0.5 Mile of Study Area 1B

Segment	Schools	Day-Care Centers
B	23	25

Source: U.S. Department of Homeland Security 2024

These boundaries are established to determine areas in which current or future airport-related noise, overflight, safety, or airspace protection factors may significantly affect surrounding land uses or require restrictions on those uses.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segment B in Study Area 1B is managed by the following plans:

- County of Los Angeles Operation Area EOP (OAEOP) (Los Angeles County 2023) and
- 2020 County of Los Angeles All-Hazards Mitigation Plan (AHMP) (Los Angeles County 2020).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these types of plans.

3.2.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segment within Study Area 1B are summarized in Table 3.2-20: Study Area 1B Potential Impacts.

Table 3.2-20: Study Area 1B Potential Impacts

Potential Impact	Project Phase	Segment B
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact
	O&M	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact
	O&M	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	Potential Impact
	O&M	Potential Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	Potential Impact
	O&M	Potential Impact
Public Airport and/or Private Airstrip Hazards	Construction	Potential Impact
	O&M	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact
	O&M	Potential Impact
Wildland Fires	Construction	Potential Impact
	O&M	Potential Impact

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Based on the resources present in this production study area, construction and O&M activities would be anticipated to have a potential for temporary or permanent impact to the public or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts related to the construction and O&M activities could be reduced through the implementation of the AMMs detailed in Section 3.2.6.3 Potential Avoidance and/or Minimization Measures.

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities would have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. Most of the potential impacts related to the construction and O&M activities and the transport, use, or disposal of hazardous materials could be reduced through the implementation of the AMMs detailed in Section 3.2.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

A total of 23 schools and 25 day-care centers are located within 0.5 mile of where Segment B would be located. The closest school is located approximately 250 feet from the segment and the closest day-care center is located approximately 85 feet from the segment. Hazardous materials that may be used during construction have not been identified, but they would likely include commonly used construction-related materials including gasoline, diesel fuel, oil, solvents, and lubricants associated with the operation of construction equipment and vehicles and associated with some construction activities. These materials would generally pose less of a risk to human health than other classes of hazardous materials when properly used and contained. These materials are also those typically used in construction projects and would pose no increased risk to schools and day-care centers than any other construction projects requiring earthwork, grading, and installation of utility infrastructure. Hazardous materials would be stored, handled, and used in accordance with applicable regulations. Implementation of a SWPPP BMPs during construction, including good housekeeping, spill containment and response measures, and waste management would reduce chances of an event occurring.

O&M activities would involve routine inspections and repairs, as well as potential upgrades over the life of the pipeline. Temporary or permanent impacts may occur from the routine transport, including transport of hydrogen gas, use, and disposal of hazardous materials during O&M of the pipeline or any appurtenances. O&M would be conducted in a similar manner as is currently performed by SoCalGas on existing natural gas pipelines, as well as in accordance with any hydrogen-specific safety measures that may be developed by SoCalGas or by any applicable regulators. Operation would require transport hydrogen gas, which is highly flammable. However, the pipelines would be required to be monitored, operated, and maintained according to applicable Occupational Safety and Health Administration and California Department of Industrial Relations and PHMSA requirements. O&M would result in a nominal increase in the chances of temporary impacts to children or personnel at schools or day-care centers, such as during increased maintenance and inspection trips. However, even with an increase in O&M activities, all hazardous materials would be stored, handled, and used in accordance with applicable regulations, thereby reducing the likelihood of impacting schools and day-care centers. Even with these measures, potential spills of hazardous materials, hazardous emissions, and the ignition of hydrogen gas could still occur in the vicinity of schools or day-care centers that are located near the Evaluated Segments.

Section 3.2.6.3 Potential Avoidance and/or Minimization Measures provides AMMs that could be implemented to reduce potential impacts.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Only one open site (Honda Oil and Gas [Newhall Refinery]) was identified within 1,000 feet of Segment B. The Newhall Refinery site is an open investigation with the Los Angeles RWQCB, and reportedly has the presence of stained soils, improperly sealed soil borings, and several other potential contaminant sources, contaminated soil and/or groundwater may be present. However, most of the remaining Segment B would be located proximate to existing SoCalGas infrastructure where encountering contaminated soils and groundwater from existing hazardous materials sites would be unlikely.

In the event that potentially contaminated soil is encountered during trenching or grading activities, SoCalGas would sample in place, test, profile, and transport the materials to an appropriately permitted disposal facility in accordance with all federal, state, and local laws and regulations. Should groundwater be encountered during excavation, SoCalGas would dewater the excavation area. Groundwater would be pumped, filtered, transferred to a desiltation tank to remove silt, and tested to comply with RWQCB NPDES requirements. If the water quality does not meet permit requirements, SoCalGas would implement additional treatment or filtering procedures until the applicable requirements are met. Based on the implementation of SoCalGas's HMMP/HMBP, BMPs, and SWPPP, the potential for existing hazardous materials sites to create a significant hazard to the public or the environment during construction would be reduced; however, there is still the potential for this to occur on Segment B.

O&M activities would involve routine inspections and repairs, as well as potential upgrades over the life of the pipeline, and SoCalGas would implement standard protocols listed in its HMMP/HMBP, BMPs, and SWPPP such that contaminated soil and/or groundwater would be properly identified, handled, and disposed. In addition, potential excavations that may occur during O&M activities would likely occur within previously disturbed areas, which would reduce the chances that O&M activities would create a hazard to the public or the environment. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.2.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

As previously discussed, a portion of Segment B would be located within the Planning Boundary/Area of Influence designated for the Palmdale Airport.

The pipeline would be installed underground. Some temporary cranes or other tall construction equipment may be needed during construction, but this equipment would be removed following construction activities. Any construction activities would need to be performed at a distance from airport activity sufficient to minimize safety concerns and in accordance with Federal Aviation Administration regulations and therefore construction would not be anticipated to interfere with any airport operations. Construction activities near the airport in Segment B in this study area would have nominal potential for the pipeline route to result in a safety hazard or excessive noise for the people residing or working in the portion of Segment B near the Palmdale Airport; however, the portion of the pipeline near the airport is a short portion of the overall pipeline segment and construction would be temporary and limited in duration. Construction activities are unlikely to, but have a potential to result in a safety hazard or excessive noise for the people residing or working in the portions of Segment B near the Palmdale Airport.

O&M activities would involve routine inspections and repairs, as well as potential upgrades over the life of the pipeline. Operating facilities would be anticipated to be located away from airports, which would ensure that operating personnel are not exposed to safety hazards related to airports. Maintenance activities would be anticipated to be infrequent or require nominal amounts of work near the airport near Segment B. No impacts would be anticipated to result in safety hazards related to airports during O&M activities. Most of the potential construction impacts could be reduced through the implementation of the AMMs detailed in Study Area 1B Section 3.2.6.3 Potential Avoidance and/or Minimization Measures.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.2.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

Typical impacts and wildfire prevention practices that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Wildland Fires subsection. As previously discussed, approximately 19.7 and 8.8 miles of Segment B would be located within the CAL FIRE Very High FHSZ within an SRA and LRA, respectively. High heat or sparks from vehicles or equipment would have the potential to ignite dry vegetation and cause fires. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.2.6.3 Potential Avoidance and/or Minimization Measures.

3.2.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 1B and these measures are applicable in Study Area 1B as well as the additional AMMs detailed in Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B.

Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B

Potential Impact	Potential Avoidance and Minimization Measures
Encounter existing hazardous materials sites	• SoCalGas could develop and implement standard protocols for dealing with hazardous materials as part of the HMMP/HMBP and BMPs for Angeles Link. • Measures outlined in the SWPPP would be required to be implemented to reduce potential exposure of hazardous materials to the public and the environment. • SoCalGas could site any permanent facilities or appurtenances associated with the Evaluated Segments away from identified hazardous materials sites. • Unanticipated hazardous materials could be profiled, removed, and disposed of at an appropriate facility, or treated on site if treatment could effectively reduce exposure to the public or the environment.
Exposure to sensitive receptors (schools, pre-schools, day-care centers) during construction and O&M	• Transportation and disposal routes could be sited at locations well outside of schools or day-care centers. • Pipeline segments could be sited away from schools or day-care centers.

Potential Impact	Potential Avoidance and Minimization Measures
Exposure to sensitive receptors (schools, pre-schools, day-care centers) during construction and O&M	• Hazardous materials would be stored, handled, and used in accordance with applicable regulations.
Impediment to public or private airports during construction	• Tall infrastructure could be located an appropriate distance from airport activity sufficient to minimize safety concerns and in accordance with FAA regulations.

3.2.7 Hydrology and Water Quality

3.2.7.1 Existing Conditions

Segment B would be located in the RWQCB Los Angeles Region 4 and Lahontan Region 6 jurisdictions. Water resources in these areas are also under the jurisdiction of CDFW South Coast Region 5 and the USACE Los Angeles District.

Surface Waters

Segment B would cross five USGS watersheds (USGS 2023a). Segment B would cross the Amargosa Creek, Headwaters Santa Clara River, Lake Palmdale-Piute Ponds, Upper Los Angeles River, and Upper Santa Clara River watersheds.

Based on the review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Study Area 1B would cross six named waterbodies and 57 unnamed waterbodies. A list of all named waterbodies that would be crossed by the Segment B is included in Table 3.2-22: Named Waterbodies Crossed by Study Area 1B. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- one artificial waterway,
- one canal/ditch,
- seven pipelines, and
- 54 streams/rivers.

Table 3.2-22: Named Waterbodies Crossed by Study Area 1B

Waterbody Name	Segment Crossed	Waterbody Classification
Amargosa Creek	B	Stream/river
Anaverde Creek	B	Stream/river
California Aqueduct	B	Artificial waterway
Newhall Creek	B	Stream/river
Placerita Creek	B	Stream/river
Santa Clara River	B	Stream/river

Source: USGS 2023b

Impaired Surface Waters

As indicated by a review of the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2022a), one impaired waterbody would be crossed by Segment B, as listed in Table 3.2-23: Impaired Waterbodies Crossed by Study Area 1B. Details regarding the pollutant that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b). The listing associated with the waterbody specifies that indicator bacteria is the pollutant causing a lack of attainment of water quality standards. Bacteria often reaches inland surface waters in the coastal watersheds of Los Angeles County through stormwater and non-stormwater runoff from

municipal separate storm sewer systems and ROWs as well as from nonpoint sources (RWQCB 2014).

Table 3.2-23: Impaired Waterbodies Crossed by Study Area 1B

Waterbody Name[59]	RWQCB Jurisdiction	Pollutant
Santa Clara River Reach 7 (Bouquet Canyon Road to above Lang Gaging Station)	Region 4 - Los Angeles Region	Indicator bacteria

Source: SWRCB 2022a

Floodplains

As indicated by a review of the FEMA Flood Hazard Layer (FEMA 2023), Segment B would cross several floodplains, including the 500-year and 100-year-floodplains. Floodplains that would be crossed by the segment within Study Area 1B are depicted in Attachment E: Hydrological Maps.

Groundwater

The Study Area 1B would cross four groundwater basins (DWR 2022a). Segment B would cross the San Fernando Valley, Santa Clara River Valley East, Acton Valley, and Antelope Valley groundwater basins.

Publicly available monitoring well data from DWR (DWR 2022b) was reviewed to estimate existing depths bgs to groundwater. Groundwater readings from 20 monitoring wells located within two miles of Study Area 1B were reviewed, as listed in Table 3.2-24: Groundwater Readings within Two Miles of Study Area 1B. Groundwater levels within Study Area 1B are expected to vary based on several factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

Table 3.2-24: Groundwater Readings within Two Miles of Study Area 1B

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
B	20	12.1	437.5

Source: DWR 2022b

[59] Waterbody names of impaired waterbodies are based on data from the SWRCB California 2020-2022 Integrated Report and may differ from waterbody names included in Table 3.2-22: Named Waterbodies Crossed by Study Area 1B, which are taken from USGS NHD data.

3.2.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segment B are summarized in Table 3.2-25: Study Area 1B Potential Impacts.

Surface Waters

As detailed in Section 3.2.7.1 Existing Conditions in the Surface Waters subsection, 63 mapped waterbodies would be crossed by Study Area 1B, including: six named waterbodies and 57 unnamed waterbodies. Study Area 1B would cross one impaired waterbody as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for Segment B.

Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.2.7.3 Potential Avoidance and/or Minimization Measures.

Table 3.2-25: Study Area 1B Potential Impacts

Potential Impact	Project Phase	Segment B
Water Quality Degradation	Construction	Potential Impact
	O&M	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact
	O&M	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact
	O&M	Potential Impact

Floodplains

Segment B would be installed within and across the floodplains that are detailed in Section 3.2.7.1 Existing Conditions in the Floodplains subsection. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross floodplains. Construction and O&M activities would likely not cause permanent impacts related to floodplains. Potential impacts related to construction and

O&M could be reduced through the implementation of the AMMs detailed in Section 3.2.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 1B, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.2.7.3 Potential Avoidance and/or Minimization Measures.

3.2.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segment B. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 1B and could be implemented to further avoid or minimize potential impacts to segments within this study area.

3.2.8 Land Use and Planning

3.2.8.1 Existing Conditions

Section 3.2.1 Study Area 1B Description contains a description of Segment B and Table 3.2-1: Jurisdictions Crossed by Study Area 1B details the distance within each local jurisdiction that Segment B would traverse within Study Area 1B.

Land Use

Traveling from southwest to northeast, most of Segment B would cross residential areas with brief intervals where the segment follows paved public roads. Smaller open space/public lands, industrial, mixed use, planned development, and commercial areas would also be crossed. Once the segment reaches the City of Palmdale, it would generally follow paved public roads for the remainder of the segment, excluding a short portion that would cross an industrial area. Surrounding land uses would include low- and medium-density residential, industrial, commercial, and mixed use, as well as one park.

General Plan land use designations that would be crossed by Segment B and the corridor within each jurisdiction within Study Area 1B are detailed in Table 3.2-26: General Plan Land Use Designations Crossed by Study Area 1B.[60]

Special Land Use Designations

As described in the following subsections and detailed in Table 3.2-27: Agency-Managed and Protected Lands Crossed by Study Area 1B, Table 3.2-28: Linear Infrastructure and Protected Trails Crossed by Study Area 1B, and Attachment F-1: Special Land Use Designations Maps, Segment B would cross lands managed by federal, state, and/or local agencies. Section 3.2.3 Biological Resources contains a discussion of HCP/NCCP boundaries that the segments would cross within Study Area 1B. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Lands Managed by Federal Agencies

Segment B would cross BLM-managed land southwest of the City of Palmdale. BLM land in this area is managed under the South Coast Resource Management Plan (BLM 1994).

[60] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.2-26: General Plan Land Use Designations Crossed by Study Area 1B

Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[61] (acres)
City of Lancaster	High-Density Residential	N/A[62]	2.5
	Industrial	N/A[62]	29.6
	Low-Density Commercial	N/A[62]	12.5
	Medium-Density Residential	N/A[62]	34.0
	Mixed Use	0.2	6.3
	Open Space and Public Lands	N/A[62]	2.6
City of Los Angeles	High-Density Residential	0.1	2.0
	Low-Density Commercial	0.2	4.4
	Medium-Density Residential	0.5	10.8
	Open Space and Public Lands	N/A[62]	0.2
City of Palmdale	High-Density Commercial	<0.1	4.2
	High-Density Residential	N/A[62]	0.9
	Industrial	N/A[62]	22.5
	Low-Density Commercial	N/A[62]	18.3
	Low-Density Residential	N/A[62]	0.6
	Medium-Density Residential	N/A[62]	17.6
	Mixed Use	N/A[62]	0.1
	Open Space and Public Lands	N/A[62]	2.6
	Other	N/A[62]	2.7
City of Santa Clarita	High-Density Residential	1.6	46.6
	Industrial	0.4	16.6
	Low-Density Commercial	N/A[62]	<0.1
	Low-Density Residential	1.3	33.3
	Medium-Density Residential	1.9	47.7
	Mixed Use	0.4	25.2

[61] The corridor includes 100 feet on either side of the pipeline.
[62] This is not applicable because the pipeline would not cross the land use designation.

Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[61] (acres)
	Open Space and Public Lands	0.2	8.8
Los Angeles County	Low-Density Commercial	0.2	6.1
	Low-Density Residential	4.4	363.5
	Medium-Density Residential	1.8	42.5
	Mixed Use	0.1	2.4
	Open Space and Public Lands	1.8	54.7
	Planned Development	0.6	26.5

Source: California Governor's OPR 2024

Table 3.2-27: Agency-Managed and Protected Lands Crossed by Study Area 1B

Agency	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[63] (acres)
Federal			
BLM	BLM-Managed Land	0.3	6.8
Regional			
Los Angeles County	Eastern Greenbelt Open Space	0.2	3.7
	Elsmere Canyon Open Space	1.5	34.5
	Vasquez Rocks Natural Area Park	<0.1	4.2
City			
City of Palmdale	Pelona Vista Park	N/A[64]	2.4
City of Santa Clarita	Golden Valley Ranch Open Space	0.3	4.1
	Quigley Canyon Open Space	0.4	8.8

Source: GreenInfo Network 2023

Table 3.2-28: Linear Infrastructure and Protected Trails Crossed by Study Area 1B

Agency	Special Land Use	Times Crossed
Federal		
USFS	Pacific Crest National Scenic Trail (PCT)	1
National Park Service (NPS)	Butterfield Overland National Historic Trail	1
State		
DWR	California Aqueduct	1
California HSRA	Bakersfield-to-Palmdale Section	1
Regional		
LADWP	Los Angeles Aqueduct	2

Sources: BLM 2023, HRSA 2023, USGS 2023, USFS 2022b

[63] The corridor includes 100 feet on either side of the pipeline.
[64] This is not applicable because the pipeline would not cross the special land use.

Segment B would follow the Butterfield Overland National Historic Trail for approximately 1.5 miles along Newhall Avenue and Sierra Highway in the City of Santa Clarita. The National Trails office for Regions 6, 7, and 8 of the NPS, which administers the trail, does not manage any land but works with partners to help share and protect national historic trails (NPS 2023). Administration of national historic trails adheres to the policies listed in Director's Order #45 and Reference Manual 45 (NPS 2013, NPS 2019).

Segment B would cross the PCT south of Escondido Canyon Road within the unincorporated community of Aqua Dulce. This portion of the trail occurs on Los Angeles County-managed land within the Vasquez Rocks Natural Area Park. The PCT is a National Scenic Trail managed by the USFS in partnership with other local, state, and federal agencies and organizations (USFS 2023). The 1982 Pacific Crest National Scenic Trail Comprehensive Plan (USFS 1982) and the 2022 Foundation Document (USFS 2022a) inform management considerations, decisions, and planning efforts for the PCT.

The National Trails System Act of 1968, as amended, governs the activities of the National Trails System, which includes the Butterfield Overland National Historic Trail and the PCT (16 U.S. Code [U.S.C.] § 1241 et seq.).

Lands Managed by State Agencies

Segment B would cross the California Aqueduct along West Avenue South at a location west of Tierra Subida Avenue near the City of Palmdale. The aqueduct is managed by the California DWR.

Segment B would cross the Bakersfield-to-Palmdale section of the California High-Speed Rail alignment along Sierra Highway in the City of Lancaster. The California HRSA is responsible for planning, designing, building, and operating the high-speed rail system.

Segments B would cross state highways, which are managed by Caltrans.

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segment B or the corridor would cross the following parks and open space areas:[65]

- Elsmere Canyon Open Space, Eastern Greenbelt Open Space, and Vasquez Rocks Natural Area Park, which are managed by Los Angeles County;
- Quigley Canyon Open Space and Golden Valley Ranch Open Space, which are managed by the City of Santa Clarita; and
- Pelona Vista Park, which is managed by the City of Palmdale.

Segments B would cross the Los Angeles Aqueduct in two locations—east of Highway 14 and north Quigley Canyon Open Space—in the City of Santa Clarita. The aqueduct is managed by the LADWP.

3.2.8.2 Impact Discussion

In addition to potential impacts specifically related to Study Area 1B, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segment to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.2-29: Land Use and Planning Potential Impacts for Study Area 1B.

Table 3.2-29: Land Use and Planning Potential Impacts for Study Area 1B

Potential Impact	Project Phase	Segment B
Divide a community	Construction	No Impact
	O&M	No Impact
Conflict with an existing plan, policy, or regulation	Construction	No Impact
	O&M	No Impact

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are previously discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

[65] These open space areas have different names in the California Protected Area Database and the City of Santa Clarita's Interactive Trail Map. The nomenclature used in this report matches the city's Interactive Trail Map.

Land Uses

Segment B could generally follow existing SoCalGas pipeline corridors, public roadways, or unpaved access roads. A couple small sections of Segment B within open space areas do not appear to have any existing access, so new temporary or permanent access roads could be needed in those areas. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

Segment B could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

Segment B could cross BLM-managed lands along an existing SoCalGas pipeline corridor. Any work outside of existing easements on BLM-managed land would require a grant of land rights. Segment B could occur within the BLM's CDCA Plan area and the DRECP area; however, Segment B would not cross BLM-managed land within these areas. Therefore, the plans and their associated requirements are not anticipated to apply to the Segment B.

Segment B could cross the federally administered Butterfield Overland National Historic Trail within public roads in the City of Santa Clarita and the federally administered PCT on land managed by Los Angeles County. Portions of the PCT are protected through easements on non-federal lands; however, the pipeline could cross the PCT along an existing pipeline corridor where SoCalGas likely has existing land rights. Coordination with the County of Los Angeles could determine if any additional land rights are needed. Although temporary impacts from construction could occur, the pipeline would not be anticipated to permanently impact the scenic or historical qualities of these trails or interfere with the nature and purposes of these trails. In addition, O&M of the pipeline would not be anticipated to conflict with the long-term management and use of these trails. Therefore, no conflicts with these trails would be anticipated.

State

Segment B could cross state-managed linear infrastructure, including the California Aqueduct, state highways, and the Bakersfield-to-Palmdale section of the California High-Speed Rail alignment. The segment could require encroachment permits from the DWR and Caltrans for these crossings. No current plans for construction of the Bakersfield-to-Palmdale section exist, but a Final EIR/EIS was prepared for this portion of alignment (California HSRA 2021). Construction of the pipeline could conflict with implementation and construction of the alignment; however, it is unlikely the timing would overlap. Once constructed, crossing the alignment could require an encroachment permit from the California HSRA.

Local

Segment B could cross the locally managed Los Angeles Aqueduct, which would likely require an easement or license agreement with the LADWP. The segment could also cross locally managed parks and open space areas, and although most impacts would be temporary, construction of the pipeline could conflict with these land uses.

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters. Therefore, coordination with local agencies would be anticipated during future planning efforts.

3.2.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, the segments would not divide an established community. No major conflicts with applicable land use plans or policies would be anticipated as a result of construction and O&M of the pipeline; however, potential impacts would be contingent on the actual pipeline routing and design. As such, no AMMs would likely be required, assuming close coordination with land-managing agencies and local jurisdictions occurs.

3.3 STUDY AREA 2

3.3.1 Study Area 2 Description

Study Area 2 includes Segments A, S, T, U, V, and W, as depicted in Figure 3.3-1: Study Area 2 Overview Map. The segments would traverse approximately 61 miles of Los Angeles and Orange counties and the cities of Carson, Cerritos, El Segundo, Hawthorne, Inglewood, Lakewood, Long Beach, Los Angeles, Manhattan Beach, Redondo Beach, Seal Beach, South Gate, and Torrance. These segments make up the Central Zone. Table 3.3-1: Jurisdictions Crossed by Study Area 2 details the distance that the Study Area 2 segments would cross through each jurisdiction. The segments in this study area would generally connect cities within the Los Angeles Basin to the Collection Zone of Angeles Link discussed in Study Areas 3A through 3F.

3.3.1.1 Summary of Potential Impacts

Segments A, S, T, U, V, and W within this study area are preliminary, and the actual routing, engineering, and design and construction methods for each segment have not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, each segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of these pipeline segments and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.3-2: Study Area 2 Potential Impact Summary summarizes the potential impacts identified for the segments within Study Area 2.

Table 3.3-1: Jurisdictions Crossed by Study Area 2

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
A	28	City of Carson	2
		City of El Segundo	1
		City of Hawthorne	3
		City of Inglewood	1
		City of Long Beach	1
		City of Los Angeles	8
		City of Manhattan Beach	1
		City of Redondo Beach	3
		City of Torrance	3
		Unincorporated Los Angeles County	5
S	9	City of Long Beach	9
		City of Los Angeles	<1
T	9	City of Inglewood	1
		City of Los Angeles	4
		City of South Gate	3
		Unincorporated Los Angeles County	1
U	7	City of Cerritos	<1
		City of Lakewood	1
		City of Long Beach	6
		City of Seal Beach	<1
V	3	City of El Segundo	3
		City of Los Angeles	<1
W	5	City of Carson	3
		City of Los Angeles	2

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

Table 3.3-2: Study Area 2 Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of all segments
Biological Resources	• Potential impacts to species and habitat during construction and O&M of all segments • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M for Segments A, S, and U • Potential impacts to wetlands during construction and O&M of Segments A, S, U, and W • Potential impacts to wildlife movement and migration corridors during construction and O&M of all segments • Potential to conflict with existing NCCPs/HCPs and other conservation plans during construction and O&M of Segment U
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of all segments • Potential to change the significance of an archeological resource during construction and O&M of all segments • Potential to disturb human remains during construction and O&M of all segments • Potential to change the significance of a TCR during construction and O&M of all segments
Energy	• Potential impacts to existing energy resources during construction of all segments • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of all segments
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of all segments • Potential for a foreseeable upset or accident conditions during construction and O&M of all segments • Potential impacts to schools in close proximity to pipeline construction and O&M of all segments • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for Segments A, S, T, V, and W

Environmental Factor	Potential Impact
	• Potential impacts to public airports and/or private airstrips during construction of Segment A • Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of all segments
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of Segments A, S, U, and W • Potential impacts to ground water quality and/or depletion during construction and O&M of all segments • Potential impacts to floodplains during construction and O&M of Segments A, S, U, and W
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M for Segments A, S, V, and W

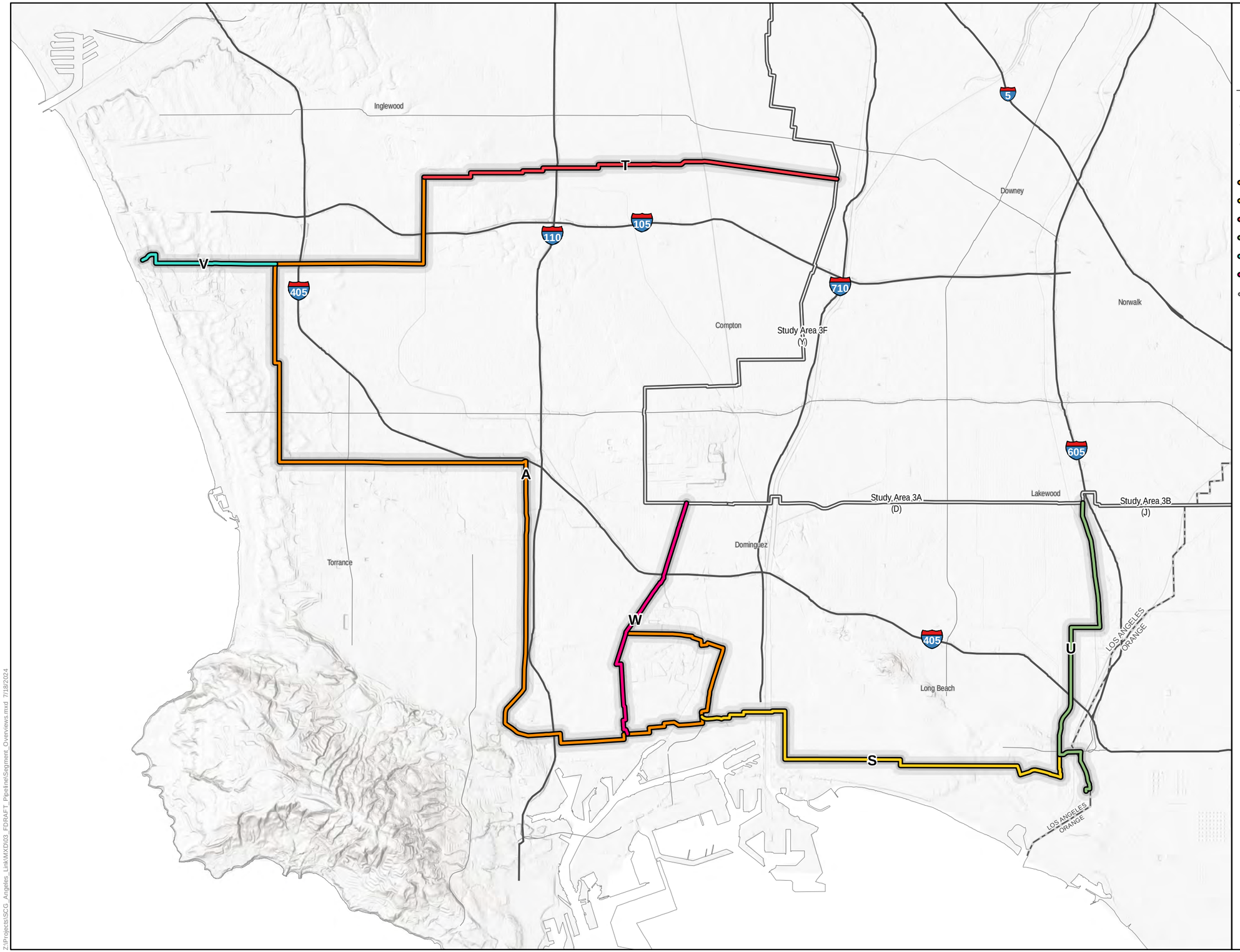
Figure 3.3-1: Study Area 2 Overview Map

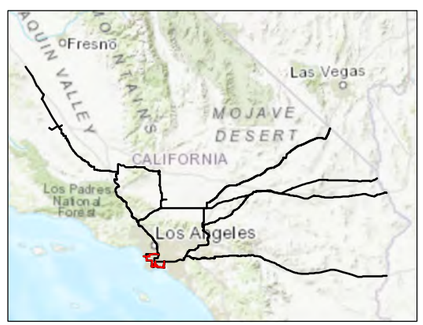
Angeles Link Phase 1 Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- A
- S
- T
- U
- V
- W
- Adjacent/Other Study Area Visible





SoCalGas

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3.3.2 Air Quality and Greenhouse Gas Emissions

3.3.2.1 Existing Conditions

Section 3.3.1 Study Area 2 Description provides a description of the segments and the cities and counties that would be crossed by Segments A, S, T, V, U, and W. Study Area 2 includes Segments A, S, T, V, U, and W.

As depicted in Attachment A: Air Basins and Air Districts Maps, all segments associated with Study Area 2 would be located in the SCAB, under the jurisdiction of the SCAQMD. The local topography and climate result in a high potential for air pollution in the SCAB. During the summer months, it is common for a warm air mass to descend over the cool, moist marine layer. The warm upper layer caps the marine layer and prevents pollutants from dispersing upward. The SCAB has an arid climate and receives abundant sunshine and little rainfall.

Attainment Status

Table 3.3-3: Study Area 2 Attainment Status details the current attainment status for the criteria air pollutants with the CAAQS and NAAQS within Study Area 2.

Table 3.3-3: Study Area 2 Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
SCAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Nonattainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segments.
Source: CARB 2023

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential

segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Air Quality

South Coast Air Quality Management District

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace their current CEQA Air Quality Handbook that was approved in 1993. Their current handbook provides guidance on how to evaluate a project's potential to impact air quality. The SCAQMD released updated air quality significance thresholds in March 2023 for criteria air pollutants to address the U.S. EPA's redesignation of the Coachella Valley to extreme non-attainment for the 2008 O_3 NAAQS. These thresholds are presented in Table 3.3-4: SCAQMD Criteria Air Pollutant Thresholds for Study Area 2. The SCAQMD also requires the implementation of their Localized Significance Thresholds for projects within the district to evaluate potential impacts to sensitive receptors (SCAQMD 2023a).

Table 3.3-4: SCAQMD Criteria Air Pollutant Thresholds for Study Area 2

Criteria Air Pollutant	Daily Construction Emissions (Pounds)	Daily Operation Emissions (Pounds)
NO_X	100	100
VOCs	75	75
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_x	150	150
CO	550	550
Lead	3	3

Source: SCAQMD 2023a

Greenhouse Gases

South Coast Air Quality Management District

SCAQMD staff are convening an ongoing GHG working group to determine appropriate significance thresholds for project emissions. On December 5, 2008, the SCAQMD Governing Board adopted interim GHG significance threshold for projects and provided draft guidance to assist with these determinations (SCAQMD 2023b). For industrial

projects, the SCAQMD considers any project with emissions in excess of 10,000 metric tons of CO_2e emissions, including construction emissions amortized over 30 years and added to the operational GHG emissions, to be potentially significant.

3.3.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segments A, S, T, U, V, and W, if built, within Study Area 2 are summarized in Table 3.3-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 2.

Air Quality

As noted in Table 3.3-3: Study Area 2 Attainment Status, the segments associated with Study Area 2 would be in areas currently classified as nonattainment for O_3, lead, $PM_{2.5}$, and PM_{10}. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the segments in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.3.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segments in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential avoidance and minimization measures that could be implemented to reduce the potential GHG emissions are summarized in Section 3.3.2.3 Potential Avoidance and/or Minimization Measures.

3.3.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 2 and all AMMs are also applicable to this study area.

Table 3.3-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 2

Potential Impact	Project Phase	Segment A	Segment S	Segment T	Segment U	Segment V	Segment W
Air Quality	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
GHGs	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact

3.3.3 Biological Resources

3.3.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segments A, S, T, U, V, and W. Biological resources in Study Area 2 are under the jurisdiction of the CDFW, NOAA Fisheries, and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 2; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segments within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that five vegetation communities would be crossed by Study Area 2 segments. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Urban habitat is the predominant habitat present within a 200-foot-wide corridor centered on each segment. The habitats and approximate area of each habitat that would be within each segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segments within Study Area 2 would cross existing lacustrine habitat. Segments A and W would cross existing lacustrine habitat where the segments would cross the Dominguez Channel. However, this drainage feature has been significantly altered and the banks do not appear vegetated. In addition, Segment S would cross existing lacustrine habitat where the segment would cross the Los Angeles River. However, this river has been significantly altered and the banks do not appear vegetated. Lastly, Segment U would cross existing lacustrine habitat where the segment would cross the San Gabriel River. However, this river has been significantly altered and the banks do not appear vegetated. Lacustrine habitat at these locations would likely not be classified as sensitive natural communities; however, field surveys would be needed to make this determination.

Segment A would traverse the CCC Coastal Zone within the Port of Los Angeles. In addition, Segments S and U would traverse the Coastal Zone within the City of Long Beach (CCC 2024). LCP plans, which may contain additional information on ESHAs, are further discussed in the Coastal Zone subsection of Section 3.3.8.1 Existing Conditions.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segments in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment A would cross two potentially jurisdictional features; Segment S would cross two potentially jurisdictional features; Segment U would cross two potentially jurisdictional features; and Segment W would cross one potentially jurisdictional feature. Segments T and V would not cross any potentially jurisdictional features based on this desktop analysis. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.3.7.1 Existing Conditions, wetland habitats may be present along these jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, one protected plant species and 13 protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segments A, S, T, U, V, and/or W. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near a segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

As detailed in Table 3.3-6: Protected Plant Species Likely to Occur in Study Area 2, one protected plant species would be likely to occur within portions of Segments A, S, and W in this study area and/or within 0.25 mile of a segment centerline. Unless otherwise noted, the species was identified to have a CNDDB record within 0.25 mile of a segment centerline (CDFW 2023d).

This species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Protected Wildlife

As detailed in Table 3.3-7: Protected Wildlife Species Likely to Occur in Study Area 2, 13 protected wildlife species would be likely to occur within portions of Segments A, S, T, U, V, and/or W, and/or within 0.25 mile of a segment centerline. Unless otherwise

denoted, the species were identified to have a CNDDB record within 0.25 mile of a segment centerline (CDFW 2023d).

Table 3.3-6: Protected Plant Species Likely to Occur in Study Area 2

Segment	Species Common Name	Listing Status[66]	Approximate Percentage of the Segment Length (miles) Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[67]
A	Lyon's pentachaeta	FE, SE	5.8	5.4
S	Lyon's pentachaeta[68]	FE, SE	0.0	0.2
W	Lyon's pentachaeta	FE, SE	34.5	32.2

Sources: CDFW 2023d and CDFW 2023e

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), Segment V would be located within 0.25 mile of USFWS-designated critical habitat for the western snowy plover. This critical habitat is located within El Segundo Beach near the City of El Segundo.

[66]Explanation of listing status codes:
Federal listing code:
- FE: Federally listed as endangered

State listing codes:
- SE: State-listed as endangered

[67]The buffer includes 0.25 mile on either side of a segment centerline.

[68] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

Table 3.3-7: Protected Wildlife Species Likely to Occur in Study Area 2

Segment	Species Common Name	Listing Status[69]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[70]
Amphibians and Reptiles				
A	California red-legged frog[71]	FT	0.7	2.4
	Western pond turtle[71, 72]	FPT	0.7	3.1
	Western spadefoot[71]	FPT	3.4	4.6
S	California red-legged frog[71]	FT	1.0	2.1
	Green sea turtle[71]	FT	0.0	0.3
	Western pond turtle[71,72]	FPT	1.0	2.1
	Western spadefoot[71]	FPT	1.0	2.1
T	California red-legged frog[71]	FT	0.0	0.6
	Western pond turtle[71, 72]	FPT	0.0	0.6
	Western spadefoot[71]	FPT	0.0	0.6

[69] Explanation of listing status codes:

Federal listing codes:
- FC: Federal candidate for listing
- FE: Federally listed as endangered
- FPT: Federally proposed as threatened
- FT: Federally listed as threatened

State listing codes:
- SE: State-listed as endangered
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[70] The buffer includes 0.25 mile on either side of the segment centerline.

[71] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

[72] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

Segment	Species Common Name	Listing Status[69]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[70]
U	California red-legged frog[71]	FT	6.5	3.5
	Green sea turtle	FT	2.0	4.0
	Western pond turtle[71, 72]	FPT	7.0	4.0
	Western spadefoot[71]	FPT	6.5	3.5
V	California red-legged frog[71]	FT	0.0	0.6
	Western pond turtle[71, 72]	FPT	0.0	1.8
	Western spadefoot[71]	FPT	0.0	1.8
W	California red-legged frog[71]	FT	0.5	1.1
	Western pond turtle[71, 72]	FPT	0.5	1.1
	Western spadefoot[71]	FPT	0.5	1.1
Birds				
A	California least tern[71]	FE, SE, FP	0.0	0.1
	Coastal California gnatcatcher[71]	FT	0.0	0.3
	Tricolored blackbird[71]	ST	0.0	0.6
	White-tailed kite[71]	FP	99.3	97.2
S	Belding's savannah sparrow[71]	SE	0.0	1.5
	California least tern[71]	FE, SE, FP	0.0	0.4
	White-tailed kite[71]	FP	98.5	95.6
T	White-tailed kite[71]	FP	100.0	99.4
U	California least tern[71]	FE, SE, FP	2.6	0.5
	Tricolored blackbird	ST	18.3	12.8

Segment	Species Common Name	Listing Status[69]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[70]
	White-tailed kite[71]	FP	90.8	95.7
V	California least tern[71]	FE, SE, FP	0.0	0.2
	Western snowy plover[71]	FT	0.0	0.5
	White-tailed kite[71]	FP	99.9	98.0
W	White-tailed kite[71]	FP	99.5	98.9
Invertebrates				
A	Palos Verdes blue butterfly	FE	49.5	51.1
S	Monarch - California overwintering population[71]	FC	0.0	<0.1
U	Monarch - California overwintering population[71]	FC	0.0	0.3
V	El Segundo blue butterfly	FE	12.0	6.7
	Monarch - California overwintering population	FC	4.6	1.7
W	Monarch - California overwintering population	FC	3.3	1.6
	Palos Verdes blue butterfly	FE	52.2	50.9

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segments S and U would be located within NOAA Fisheries-designated critical habitat for the green sea turtle. Segment S would cross approximately 0.1 mile and Segment U would cross approximately 0.1 mile of NOAA Fisheries-designated critical habitat.

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segments A, S, T, U, V, and W would not be located within any BLM-designated ACECs in Study Area 2.

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), a small portion of the northeastern corner of Segment U would cross the OCTA NCCP/HCP, which is currently in the implementation stage. Segment U would cross approximately 0.3 mile of the NCCP/HCP. Within the 200-foot-corridor, Segment U would overlap approximately 10.0 acres of the NCCP/HCP plan area.

Furthermore, the centerlines of Segments A, S, T, U, V, and W would not be located within 0.25 mile of any CDFW-managed lands or conservation easements in Study Area 2. The Special Land Use Designations subsection of Section 3.3.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH Mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segment A would cross approximately 0.1 mile, Segment S would cross approximately 0.2 mile, Segment U would cross less than 0.1 mile, and Segment W would cross less than 0.1 mile of a Habitat Area of Particular Concern (HAPC) under the Pacific Coast Groundfish FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's Areas of Conservation Emphasis (ACEs) Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.3-8: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity for Study Area 2. The segments within Study Area 2 would only traverse the lowest connectivity rank.

Table 3.3-8: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity for Study Area 2

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
A	27.6	0	0	0	0
S	9.1	0	0	0	0
T	8.6	0	0	0	0
U	7.1	0	0	0	0
V	2.9	0	0	0	0
W	5.2	0	0	0	0

Source: CDFW 2019

3.3.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 2 are summarized in Table 3.3-9: Biological Resources Potential Impacts for Study Area 2.

Protected Species and Their Habitat

Impacts to Protected Amphibian and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 2 with the exception of potential impacts to the green sea turtle. Fuel, sediment, or other fluids or pollutants could be discharged into drainages that connect to the Pacific Ocean. Pollutants entering drainages could result in death of green sea turtle. Sediments and other pollutants entering drainages could alter water quality resulting in reduced fecundity and survivorship of green sea turtle. However, minimal to no impacts to this species are anticipated since it is an aquatic species and in water work associated with Angeles Link would likely be minimal or would not occur. Additionally, no construction activities are anticipated to occur within nesting habitat for this species.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.3.3 Potential Avoidance and/or Minimization Measures.

Table 3.3-9: Biological Resources Potential Impacts for Study Area 2

Potential Impact	Project Phase	Segment A	Segment S	Segment T	Segment U	Segment V	Segment W
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and invertebrates; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and invertebrates; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, and birds; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and invertebrates; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and invertebrates; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and invertebrates; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	No Impact	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	No Impact	No Impact
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation	No Impact	Potential Impact: Habitat loss, fragmentation, or degradation	No Impact	No Impact
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	No Impact	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	No Impact	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation	No Impact	Potential Impact: Habitat loss, fragmentation, or degradation	No Impact	Potential Impact: Habitat loss, fragmentation, or degradation

Potential Impact	Project Phase	Segment A	Segment S	Segment T	Segment U	Segment V	Segment W
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	No Impact	No Impact	No Impact	Potential Impact: Conflict with allowable use or management of land	No Impact	No Impact
	O&M	No Impact	No Impact	No Impact	Potential Impact: Conflict with allowable use or management of land	No Impact	No Impact

Impacts to Protected Bird Species

Typical construction and O&M activities associated with pipeline installation could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 2.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Invertebrate Species

Typical construction activities associated with pipeline installation could have the potential to impact protected invertebrate species that may occur within construction areas. Impacts may include mortality or injury to individuals. Killing of or injury to adult invertebrates may result from collision with construction vehicles or equipment or from being crushed during habitat disturbance. Killing of or injury to larvae or eggs may result from construction vehicle or equipment travel in habitat where host plants occur. Impacts may also include the loss of available habitat by vegetation removal or grading activities.

Construction activities may result in impacts to protected species if dust, sedimentation, and erosion from nearby construction and equipment operation degrade the surrounding habitat and reduce the abundance of host or nectar plants. Dust settlement atop native habitat consisting of host and nectar plants may affect overall plant health by interfering with photosynthesis, respiration, and transpiration processes. Construction activities may result in impacts to protected species if invasive weed seeds are spread within occupied habitats during construction. If allowed to establish and spread, these weeds could alter the habitat for protected species. Construction vehicles or equipment could have the potential to spill or leak fuel or other fluids, which could adversely affect habitat quality by reducing the abundance of nectar and host plants of protected species. This overall reduction in habitat quality could result in reduced survivorship and fecundity.

Permanent impacts to protected species habitat could occur as a result of construction of access roads and other pipeline system components. Vegetation clearing and grading within these areas could occur and may result in habitat loss or fragmentation. Eucalyptus groves or other trees utilized by overwintering monarch may be trimmed or individual trees may be removed.

Operation of the pipeline would not be anticipated to result in substantial permanent impacts, as the pipeline would be located underground, except for related appurtenant facilities (e.g., compressor stations, valve stations). Maintenance activities would typically involve similar equipment and activities as construction, including vegetation clearing, grading, excavation, use of temporary lighting, use of motor vehicles and off-road construction equipment, and use of permanent access roads. These activities may impact biological resources similar to construction, but only small sections of the pipeline would likely be maintained at any given time.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Construction and O&M activities could have the potential to result in impacts to riparian habitat or other sensitive natural communities, including coastal zones that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wetlands, Riparian Habitat, or Other Sensitive Natural Communities subsection, would not differ within Study Area 2.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.3.3 Potential Avoidance and/or Minimization Measures.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 2.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities could impact the physical and biological features necessary to support USFWS-designated critical habitat for the western snowy plover. A more detailed analysis, as well as consultation with USFWS, may be required to determine potential impacts to this critical habitat.

Construction activities may conflict with the terms and conditions of the OCTA NCCP/HCP. The plan is currently in the implementation stage, so additional research would be needed to determine potential conflicts with the plan.

Segments A, S, U, and W would cross a HAPC under the Pacific Coast Groundfish FMP. However, the pipeline could be installed under rivers, creeks, or streams and would not result in obstructions of flow or migration for these species. A more detailed analysis, as well as consultation with NOAA Fisheries, would be required to determine potential impacts to this HAPC.

3.3.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 2 with the exception of the AMMs detailed in Table 3.3-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 2.

Table 3.3-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 2

Potential Impact	Potential Avoidance and Minimization Measures
Damage or loss of foraging, host, or nectar plants of protected invertebrate species	• Impacts to foraging, host, and nectar plants could be avoided and minimized.
Damage or loss of overwintering habitat for monarch	• Impacts to overwintering sites of monarch could be avoided and minimized.
Reduction in host and nectar plants due to vegetation management	• Avoid and minimize the use of herbicides.

3.3.4 Cultural Resources and Tribal Cultural Resources

3.3.4.1 Existing Conditions

A total of 231 previously documented resources have been identified within 0.25-mile buffer of Study Area 2 segments, as detailed in Table 3.3-11: Existing Cultural Resources in Study Area 2. Of these resources, 46 are within a 200-foot-wide pipeline corridor. The segment would cross through major cities such as Inglewood, Long Beach, and Carson as well as major highways like I-405.

Table 3.3-11: Existing Cultural Resources in Study Area 2

Segment	Relationship to Segment	Total Identified Resources
A	Within[73]	16
	0.25 mile	26
S	Within	19
	0.25 mile	109
T	Within	6
	0.25 mile	17
U	Within	1
	0.25 mile	27
V	Within	1
	0.25 mile	1
W	Within	3
	0.25 mile	5

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 2 was not available. Until further information can be acquired, all of the 46 resources within the 200-foot-wide pipeline corridor should be considered as potentially eligible resources that may be impacted by the proposed undertaking.

3.3.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segments A, S, T, U, V, and W, if built, within Study Area 2 are summarized in Table 3.3-12: Cultural and Tribal Resources Potential Impacts for Study Area 2. All known eligible and unevaluated resources within Study Area 2 were analyzed to determine if Segments A, S, T, U, V, and W could intersect them, thus having the

[73] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline).

potential to be destroyed or damaged during construction without implementation of protective measures.

Table 3.3-12: Cultural and Tribal Resources Potential Impacts for Study Area 2

Potential Impact	Project Phase	Segments A, S, T, U, V, and W
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Additional resources may be present in Study Area 2 that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary routes for Segments A, S, T, U, V, and W, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.3.4.3 Potential Avoidance and/or Minimization Measures.

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources subsection. Construction and O&M activities would have the potential for direct impacts to historical resources identified within the segments in this study area.

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.4.3 Potential Avoidance and/or Minimization Measures.

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for all segments in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Construction and O&M activities would have the potential for direct impacts to human remains for all segments in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Construction and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during AB 52 consultation with tribes.

3.3.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.3.5 Energy

3.3.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within Los Angeles and Orange counties that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 2.

Existing Local Energy Use

Electricity

County of Los Angeles

Within Study Area 2 in Los Angeles County, SCE is the primary provider of electricity (SCE 2023). Additional information about SCE's programs and RPS requirements is included in Study Area 1B Section 3.2.5.1 Existing Conditions in the Existing Local Energy Use subsection. As detailed in Table 3.3-13: Electricity Consumption in 2022 for Counties Crossed by Study Area 2, approximately 68 and 20 billion kWh of electricity were consumed in Los Angeles and Orange counties in 2022, respectively.

Table 3.3-13: Electricity Consumption in 2022 for Counties Crossed by Study Area 2

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	23,255.5	45,229.5	**68,485.0**
Orange County[74]	7,830.1	12,413.6	**20,243.7**

Source: CEC 2022a

City of Los Angeles

Within Study Area 2 in the City of Los Angeles, the LADWP is the primary provider of electricity (City of Los Angeles 2020). Additional information about LADWP's renewable electricity sources and usage is included in Study Area 1B Section 3.2.5.1 Existing Conditions in the City of Los Angeles subsection.

[74] The Orange County figures include data from all of Orange County, which factors in electricity also provided by Orange County Power Authority (OCPA). OCPA was established under the Community Choice Aggregation (CCA) program in 2021 (OCPA 2024).

Natural Gas

Within Study Area 2, SoCalGas provides natural gas service (SoCalGas 2024). As detailed in Table 3.3-14: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 2, approximately 3 billion and 572 million therms[75] of natural gas were consumed in Los Angeles and Orange counties in 2022, respectively.

Table 3.3-14: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 2

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	1,122.3	1,698.0	**2,820.3**
Orange County	351.7	220.8	**572.5**

Source: CEC 2022a

Diesel and Gasoline

Within Study Area 2, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

As detailed in Table 3.3-15: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 2, approximately 3 billion gasoline fuel sales and 295 million diesel fuel sales were estimated in Los Angeles County and approximately one billion gasoline fuel sales and 66 million diesel fuel sales were estimated in Orange County in 2022.

Table 3.3-15: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 2

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Los Angeles County	3,070	295
Orange County	1,176	66

Source: CEC 2022b

[75] One therm is equal to 100,000 Btu, or 100 kBtu.

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Solar Resource Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other (CEC 2024). According to the Solar Resources dataset from the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, all of Study Area 2 overlaps the Los Angeles Metro Solar Resource Area.

Los Angeles County

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Los Angeles County subsection, sites identified for potential renewable energy generation are listed in the REMP (County of Los Angeles 2020). Additionally, the segments within Study Area 2 would not overlap any approved or in-progress PV solar-generation facilities within Los Angeles County (CEC 2023c).

Orange County

The Orange County General Plan identifies goals and objectives for energy resource planning and management efforts. One of these goals is to “Encourage…the development of alternative energy sources consistent with sound energy conservation...” (County of Orange 2015). Alternative energy sources include renewable resources such as solar energy, including PV systems, wind energy, geothermal resources, and biomass resources. However, no separate renewable energy plan has been developed by Orange County (County of Orange 2015). The segments within Study Area 2 would not overlap any approved or in-progress PV solar-generation facilities within Orange County (CEC 2023c).

3.3.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 2 are summarized in Table 3.3-16: Study Area 2 Potential Energy Impacts.

Table 3.3-16: Study Area 2 Potential Energy Impacts

Potential Impact	Project Phase	Segment					
		A	S	T	U	V	W
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.5.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.5.3 Potential Avoidance and/or Minimization Measures.

3.3.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.3.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts would be unlikely to result in significant environmental impacts or conflicts with a state or local plan for renewable energy and could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

3.3.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 2.

3.3.6.1 Existing Conditions

Section 3.3.1 Study Area 2 Description provides a description of each segment, as well as the counties and cities through which each segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 2 are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed approximately 181 open cases and 380 closed hazardous materials cases within 1,000 feet of the segments in Study Area 2. Open hazardous materials sites are detailed in Table 3.3-17: Open Hazardous Materials Sites within 1,000 Feet of Study Area 2.

Fire Hazards

Segments A, S, T, U, V, and W would not be located within the CAL FIRE FHSZ within an SRA or LRA.

Schools and Day-Care Centers

Schools and day-care centers within 0.5 mile of Study Area 2 are presented in Table 3.3-18: Schools and Day-Care Centers within 0.5 Mile of Study Area 2.

Airports

The Los Angeles International Airport and Hawthorne Municipal Airport are located within two miles of the Study Area 2 segments. The Los Angeles International Airport is located within two miles of Segments A and V. However, Segments A and T would not occur within the planning boundary/Area of Influence designated for the Los Angeles International Airport. The Hawthorne Municipal Airport is located within two miles of Segments A and T. Segment A is within the planning boundary/Area of Influence designated for the Hawthorne Municipal Airport.

Table 3.3-17: Open Hazardous Materials Sites within 1,000 Feet of Study Area 2

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
GeoTracker Sites				
Texaco	A	2	Aquifer used for drinking water supply	Open - Remediation
Jonda Enterprises	A	2	Not Specified	Open - Inactive
Former Mobil Torrance Refinery	A	4	Aquifer used for drinking water supply, Indoor Air, Other Groundwater (uses other than drinking water), Soil, Soil Vapor, Surface water, Under Investigation	Open - Remediation
Thrifty Oil #253 (Former) Best Calif Gas	A	7	Aquifer used for drinking water supply	Open - Remediation
Ilwu Local 13 Dispatch Hall Project/Pola	A	13	Other Groundwater (uses other than drinking water)	Open - Verification Monitoring
Tosco - 76 Station #4046	A	27	Aquifer used for drinking water supply	Open - Verification Monitoring
Former Adler Pool Tables	A	43	Soil, Soil Vapor	Open - Eligible for Closure
Former Texaco	A	44	Aquifer used for drinking water supply	Open - Remediation
Mobil Station (Former)	A	49	Aquifer used for drinking water supply	Open - Verification Monitoring

[76] Distances were calculated based on the approximate center point coordinates provided by GeoTracker and EnviroStor. Depending on the actual property boundaries of each hazardous materials site and/or facility, these sites may be closer than specified.

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Bci - Vermont	A	49	Soil	Open - Remediation
Cxc Simulations, LLC	A	51	Not Specified	Open - Site Assessment
Dsa Properties - 3160 El Segundo Blvd	A	51	Not Specified	Open - Site Assessment
Valero Wilmington (Former Ultramar Refinery)	A	53	Aquifer used for drinking water supply, Soil	Open - Remediation
Tesoro - Burnett Street Valve Box Site	A	57	Other Groundwater (uses other than drinking water), Soil, Soil Vapor, Under Investigation	Open - Assessment & Interim Remedial Action
Trw Space & Defense - Hawthorne	A	63	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Remediation
Maxima Enterprises, Inc.	A	70	Not Specified	Pending Review
Phillips 66 Los Angeles Refinery	A	127	Not Specified	Pending Review
Olympus Terminals (Former Chemoil Tank Farm)	A	130	Aquifer used for drinking water supply, Indoor Air, Other Groundwater (uses other than drinking water), Sediments, Soil, Soil Vapor, Under Investigation	Open - Site Assessment
Douglas Aircraft	A	154	Aquifer used for drinking water supply	Open - Inactive

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Arco Refinery	A	164	Aquifer used for drinking water supply, Soil	Open - Assessment & Interim Remedial Action
Pacific Pointe	A	194	Not Specified	SWT-No Plan Returned[77]
Osi Optoelectronics	A	290	Aquifer used for drinking water supply, Soil Vapor	Open - Site Assessment
Acta South - Parcel My - 825	A	303	Other Groundwater (uses other than drinking water)	Open - Assessment & Interim Remedial Action
Michael Stars Inc	A	328	Not Specified	Open - Assessment & Interim Remedial Action
Eaton Corp (Former)	A	350	Aquifer used for drinking water supply, Other Groundwater (uses other than drinking water), Soil, Soil Vapor, Under Investigation	Open - Remediation

[77] SWTs are underground storage tanks. These tanks are required to be closed pursuant to Health and Safety Code Section 25292.05, which requires closure of these sites by December 31, 2025. Local permitting agencies (Certified Unified Program Agencies) or the SWRCB oversee compliance (SWRCB 2024). The SWTs are no longer updated in GeoTracker and their status should be checked in Cal EPA's California Environmental Reporting System during future environmental review (Cal EPA 2024).

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Boeing C-6 Facility	A	387	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Remediation
Unocal - Tosco Los Angeles Refinery, Carson	A	434	Aquifer used for drinking water supply, Other Groundwater (uses other than drinking water), Soil	Open - Assessment & Interim Remedial Action
Beryl Site	A	443	Soil, Soil Vapor	Open - Site Assessment
Aircraft Plating Company	A	504	Aquifer used for drinking water supply	Open - Inactive
Coury & Son Cleaners (Former)	A	519	Not Specified	Open - Site Assessment
Del Amo Study Area	A	531	Not Specified	Open - Inactive
Defense Fuel Support Point (Dfsp) San Pedro	A	552	Not Specified	Open - Operating
H. Kramer And Co	A	564	Aquifer used for drinking water supply, Soil	Open - Verification Monitoring
Guggenheim Dental Supply	A	568	Other Groundwater (uses other than drinking water), Soil, Soil Vapor	Open - Inactive
Carson-Normandie Plaza, LLC	A	576	Other Groundwater (uses other than drinking water), Soil, Soil Vapor	Open - Remediation
DoD - San Pedro Dfsp, Navy	A	580	Other Groundwater (uses other than drinking water), Soil, Soil Vapor	Open - Site Assessment
City Of Carson - Tdj Pioneer	A	589	Not Specified	Open - Inactive

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Joint Water Pollution Control Plant, Carson	A	607	Not Specified	Active
Anderson Saw Company	A	615	Other Groundwater (uses other than drinking water), Soil, Soil Vapor	Open - Inactive
San Pedro, Fuel Terminal Dfsp - Bfcust 51	A	638	Not Specified	Open - Site Assessment
Port of LA: Wilmington Waterfront Development	A	648	Not Specified	Open - Inactive
San Pedro, Fuel Terminal Dfsp - Bfcust 52	A	670	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Assessment & Interim Remedial Action
Nissenson Realty Investment	A	674	Aquifer used for drinking water supply, Other Groundwater (uses other than drinking water), Soil, Soil Vapor	Open - Inactive
Teledyne Relays	A	685	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Assessment & Interim Remedial Action
Port Of Long Beach - Pier A West /Area 2	A	718	Aquifer used for drinking water supply	Open - Inactive
City Of Carson - Penske Truck	A	762	Not Specified	Open - Inactive

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Cap Barbell	A	765	Soil, Soil Vapor	Open - Inactive
United Oil Station #65	A	774	Aquifer used for drinking water supply	Open - Remediation
International Light Metals	A	780	Other Groundwater (uses other than drinking water)	Open - Inactive
Tesoro Los Angeles Refinery	A	781	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Assessment & Interim Remedial Action
Bria Graphics	A	790	Soil, Soil Vapor	Open - Assessment & Interim Remedial Action
Daisy Avenue Long Beach	S	16	Not Specified	Open - Assessment & Interim Remedial Action
Former Mobil Service Station	S	33	Aquifer used for drinking water supply	Open - Remediation
Douglas Produce	S	99	Aquifer used for drinking water supply	Open - Site Assessment
Aratex Services Inc	S	101	Aquifer used for drinking water supply, Indoor Air, Soil, Soil Vapor	Open - Remediation
Gas Station	S	157	Other Groundwater (uses other than drinking water)	Open - Remediation
Rocket #4	S	179	Aquifer used for drinking water supply	Open - Site Assessment

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Former Clariant Corporation Facility	S	213	Aquifer used for drinking water supply, Soil	Open - Eligible for Closure
I-Chem International (Former)	S	221	Aquifer used for drinking water supply	Open - Site Assessment
15Th St. Warehouse And Properties	S	251	Not Specified	Open - Site Assessment
Thompson Family Trust	S	259	Aquifer used for drinking water supply, Indoor Air, Other Groundwater (uses other than drinking water), Soil, Soil Vapor, Under Investigation	Open - Site Assessment
Uprc Bulk Terminal (Former)	S	286	Aquifer used for drinking water supply, Soil	Open - Site Assessment
Mta Division 12 Bus Maintenance Facility (Former)	S	293	Other Groundwater (uses other than drinking water), Soil	Open - Assessment & Interim Remedial Action
Oxy Long Beach Operations	S	459	Not Specified	Under Review
Crc Operations	S	459	Not Specified	Under Review
Oxy Usa Operations	S	459	Not Specified	Under Review
R.W. Selby & Company	S	485	Not Specified	Open - Inactive
Termo Oil Site	S	526	Indoor Air, Other Groundwater (uses other	Open - Site Assessment

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
			than drinking water), Soil, Soil Vapor	
Gilbert Reese Trust	S	568	Aquifer used for drinking water supply	Open - Eligible for Closure
California Resources Long Beach Water Flood 84933001	S	585	Not Specified	Received
Kia's Service Station	S	595	Aquifer used for drinking water supply	Open - Eligible for Closure
Line 79 Release	S	728	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Site Assessment
Petro Diamond Terminal Company	S	796	Aquifer used for drinking water supply	Open - Site Assessment
Petro-Diamond Terminal Company	S	804	Not Specified	Open - Site Assessment
City Of South Gate-Target/Lazar	T	13	Aquifer used for drinking water supply	Open - Remediation
Mobil 18-D2P	T	18	Aquifer used for drinking water supply	Open - Remediation
5 Star Discount Homes LLC	T	141	Not Specified	Open - Site Assessment
Mobil M-8 Pipeline	T	295	Other Groundwater (uses other than drinking water), Soil Vapor	Open - Assessment & Interim Remedial Action

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Alliance College Ready Middle Academy 4	T	389	Not Specified	Open - Site Assessment
9422 South Broadway Project	T	655	Soil, Soil Vapor	Open - Site Assessment
Sce - El Segundo Generating Station	V	188	Not Specified	Open - Site Assessment
Raytheon Company - E05	V	439	Not Specified	SWT-No Plan Returned[77]
Arco #5093	W	9	Aquifer used for drinking water supply	Open - Remediation
Rainbow Transp. Tank Cleaners	W	13	Aquifer used for drinking water supply	Open - Inactive
Texaco #61-106-0186	W	25	Aquifer used for drinking water supply	Open - Remediation
Rhone-Poulenc, Inc	W	83	Not Specified	Open - Inactive
City Of Carson - L & M Franklin Inv.	W	295	Not Specified	Open - Inactive
City Of Carson - Lucas Property	W	352	Not Specified	Open - Inactive
Watson Industrial Center	W	370	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Remediation
P & E Terminal Company, Inc.	W	418	Not Specified	Open - Inactive

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Stauffer Management Co	W	438	Other Groundwater (uses other than drinking water)	Open - Site Assessment
Gatx - Gx -190 Pipeline Release Area	W	492	Other Groundwater (uses other than drinking water)	Open - Remediation
City Of Carson - Swan Property	W	497	Not Specified	Open - Inactive
City Of Carson - Atkemix Thirty Seven Inc.	W	497	Not Specified	Open - Inactive
City Of Carson - Watson Land Co.	W	548	Not Specified	Open - Inactive
City Of Carson - Fuentes Property	W	548	Not Specified	Open - Inactive
City Of Carson - Koll Property	W	548	Not Specified	Open - Inactive
Sung Sook Lee's Retail Center	W	575	Soil	Open - Remediation
Carson Regional Groundwater Group	W	798	Not Specified	Open - Assessment & Interim Remedial Action
Warren E&P - Wilmington - Uic Project No. 84906012	W	798	Not Specified	Received

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
EnviroStor Sites				
Union Oil Co. Of California	A	14	Not Specified	Refer: Other Agency[78]
Solec International, Inc. - Hawthorne	A	25	Not Specified	Refer: Other Agency
Machado Lake	A	26	Other Groundwater (uses other than drinking water), Soil, Surface Water Affected	Active
Southern Pacific Railroad	A	44	Not Specified	Refer: EPA
Collier Carbon & Chemical Corp	A	59	Not Specified	Refer: Other Agency
Northrop Corp	A	78	Not Specified	Inactive - Needs Evaluation
Northrop Aircraft Inc	A	78	Not Specified	Inactive - Needs Evaluation
Wilmington Refinery - Shell Oil Company	A	79	Not Specified	Refer: Other Agency
Watson Carbon & Chemical Company	A	112	Not Specified	Refer: Other Agency

[78] Sites with a “Refer” in their status are being managed by other agencies besides those more directly related to GeoTracker and EnviroStor.

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Lee's Cleaners	A	131	Not Specified	Refer: 1248 Local Agency
Louis Equipment Co.	A	193	Not Specified	Refer: EPA
Bp West Coast Products LLC	A	198	Not Specified	Refer: RWQCB
Fairchild Controls Corporation	A	202	Not Specified	Refer: RWQCB
Appliance Plating Company	A	227	Not Specified	Refer: Other Agency
El Segundo Crenshaw Co.	A	251	Not Specified	Refer: 1248 Local Agency
George Auto Wrecking	A	271	Not Specified	Refer: EPA
Azteca Auto Dismantling	A	298	Not Specified	Inactive - Needs Evaluation
Northrop Grumman Corp (Ap)	A	306	Other Groundwater (uses other than drinking water), Soil	Refer: RWQCB
E & G Auto Dismantling	A	315	Not Specified	Refer: EPA
Xerox Corporation	A	348	Not Specified	Refer: Other Agency
Exxon Mobil Oil Corp	A	362	Not Specified	Refer: RWQCB
Del Amo Facility	A	476	Aquifer used for drinking water supply affected, well used for drinking water supply affected	Active

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Boeing North American, Inc., Long Beach Division	A	505	Not Specified	Refer: Other Agency
Gulf/Fries Primary Site No. 8A	A	554	Not Specified	Inactive - Needs Evaluation
Mike Nare's Excavation & Trucking	A	569	Not Specified	Refer: EPA
Northrop Grumman Space & Mission Systems	A	594	Soil, Soil Vapor, Other Groundwater (uses other than drinking water), Soil, Soil Vapor	Active
Union Oil Co (1)	A	608	Not Specified	Refer: RCRA
Henkel Corporation	A	677	Not Specified	Inactive - Needs Evaluation
Gulf/Fries Primary Site No. 8	A	679	Not Specified	Inactive - Needs Evaluation
Ecology Control Industries	A	691	Not Specified	Refer: EPA
Northrop Corp/Aircraft Div	A	691	Not Specified	Inactive - Needs Evaluation
Alpine Village	A	733	Not Specified	Active
Ajc Sandblasting, Inc.	A	770	Not Specified	Refer: 1248 Local Agency
H.J. Baker & Bro. Inc. (California	A	779	Not Specified	Refer: Other Agency

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Sulphur Corporation)				
It - Wilmington	A	795	Not Specified	Refer: RCRA
Todd Shipyards Corp	A	825	Not Specified	Inactive - Needs Evaluation
La Shpbldg & Drydock Co	A	825	Not Specified	Inactive - Needs Evaluation
Del Amo Haz Wste	A	831	Not Specified	Inactive - Needs Evaluation
Mcdonough Property	A	851	Not Specified	Refer: EPA
Defense Fuel Supply Point, San Pedro 2	A	865	Not Specified	Refer: RWQCB
Udt Sensors, Inc.	A	877	Not Specified	Refer: Other Agency
Shell Oil Co.	A	891	Not Specified	Inactive - Needs Evaluation
First Image Management Co.	A	941	Not Specified	Refer: Other Agency
Northrop Grumman Corp (Ag)	A	947	Not Specified	Refer: Local Agency
19145 Gramercy Place	A	959	Indoor Air, Other Groundwater (uses other than drinking water), Soil Vapor	Active
Harvey Machine Co	A	995	Not Specified	Active

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Sunthetic Rubber Plant	A	996	Not Specified	Inactive - Needs Evaluation
Monroe Primary Center No. 3	S	94	Soil	Inactive - Action Required
Basin By-Products	S	142	Other Groundwater (uses other than drinking water), Soil	Active
Bkk Corp - Wilmington Transfer Station	S	142	Not Specified	Refer: RWQCB
Snyder Mfg Corporation	S	223	Not Specified	Refer: Other Agency
Loynes Beach Partners LLC	S	250	Soil, Soil Vapor	Active
Sce-Alamitos	S	283	Other Groundwater (uses other than drinking water), Soil	Active
Bear State Electrical Co Inc	S	377	Not Specified	Refer: Other Agency
Fremont Site #427	S	498	Soil	Active
M O Dion & Sons	S	726	Not Specified	Refer: RWQCB
Gm Assembly Div-Gmc	T	198	Not Specified	Inactive - Needs Evaluation
Bennet Residence	T	214	Not Specified	Refer: Other Agency
Atlas Iron & Metal Co, Inc	T	271	Not Specified	Active

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Jordan Downs Village	T	463	Not Specified	Active
Alliance Health Services Academy New High School	T	603	Soil, Soil Vapor	Inactive - Action Required
Jordan High School	T	740	Soil	Active
Watts/Jordan Downs Project	T	812	Not Specified	Active
10600 S. Western Avenue	T	820	Not Specified	Inactive - Needs Evaluation
Eptc Alamitos Parcel 3-4	U	16	Other Groundwater (uses other than drinking water), Soil	Inactive - Action Required
Ame Rockwel El Seg Auxiliary	V	116	Not Specified	Inactive - Needs Evaluation
Chevron 1001651-El Segundo Refinery	V	198	Not Specified	Refer: RWQCB
134 Center Street	V	370	Soil, Soil Vapor	Active
Standard Oil Co.	V	389	Not Specified	Inactive - Needs Evaluation
1330 East Franklin Avenue	V	474	Not Specified	Active
Radiant Services	V	698	Soil, Soil Vapor, Indoor Air	Active
International Rectifier	V	846	Not Specified	Refer: RWQCB

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[76] (feet)	Media Affected	Regulatory Status
Infineon Properties (Former International Rectifier)	V	855	Soil, Soil Vapor, Under Investigation	Active
201 N. Douglas Property	V	939	Soil Vapor	Active
Alpert & Alpert Iron & Metal	W	152	Not Specified	Refer: 1248 Local Agency
Rainbow LLC	W	262	Soil, Soil Vapor, Other Groundwater (uses other than drinking water)	Active
Rhodia	W	636	Other Groundwater (uses other than drinking water), Soil, Soil Vapor	Active
Rhodia Inc	W	636	Not Specified	Inactive - Needs Evaluation
Stauffer Chemical Company #1	W	636	Not Specified	Refer: EPA
Clean Steel Inc.	W	694	Not Specified	Refer: 1248 Local Agency
Santa Fe Railroad - Watson Yard	W	910	Not Specified	Refer: Local Agency

Sources: DTSC 2024 and SWRCB 2024

Table 3.3-18: Schools and Day-Care Centers within 0.5 Mile of Study Area 2

Segment	Schools	Day-Care Centers
A	51	78
S	20	26
T	46	39
U	7	5
V	7	14
W	6	5
Total	**137**	**168**

Source: U.S. Department of Homeland Security 2024

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segments A, S, T, U, V, and W in Study Area 2 is managed by the following plans:

- County of Los Angeles OAEOP (County of Los Angeles 2023),
- 2020 County of Los Angeles AHMP (County of Los Angeles 2020),
- Orange County Comprehensive Emergency Management Plan (CEMP) (County of Orange 2013), and
- County of Orange and Orange County Fire Authority Local HMP (LHMP) (County of Orange 2021).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

3.3.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segments within Study Area 2 are summarized in Table 3.3-19: Study Area 2 Potential Impacts.

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Table 3.3-19: Study Area 2 Potential Impacts

Potential Impact	Project Phase	Segment A	Segment S	Segment T	Segment U	Segment V	Segment W
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	Potential Impact	Potential Impact	Potential Impact	No Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	No Impact	Potential Impact	Potential Impact
Public Airport and/or Private Airstrip Hazards	Construction	Potential Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	O&M	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact

Potential Impact	Project Phase	Segment A	Segment S	Segment T	Segment U	Segment V	Segment W
Wildland Fires	Construction	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	O&M	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact

Based on the resources present in this study area, construction and O&M activities would be anticipated to have a potential for temporary or permanent impact to the public or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.6.3 Potential Avoidance and/or Minimization Measures.

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities would have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Hazardous Substances in Close Proximity to Schools subsection. A total of 137 schools and 168 day-care centers are located within 0.5 mile of where Segments A, S, T, U, V, and W would be located. Construction and O&M activities would have a potential for a hazardous emission or impacts resulting from handling hazardous materials within 0.5 mile of a school. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.6.3 Potential Avoidance and/or Minimization Measures.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Existing Hazardous Materials Sites Listed in Government Code Section 65962.5 subsection.

Based on the 181 open cases identified within 1,000 feet of the segments within Study Area 2, temporary or permanent impacts may occur due to existing subsurface contamination that may be present during construction or O&M. Construction and O&M activities would have a potential for existing hazardous materials sites to create a significant hazard to the public or the environment. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Public Airport and/or Private Airstrip Hazards subsection. As previously discussed, Segment A would

be located within the planning boundary/Area of Influence designated for the Hawthorne Municipal Airport.

Construction activities are unlikely, but they have a potential to result in a safety hazard or excessive noise for the people residing or working in the portions of Segment A near the Hawthorne Municipal Airport. No impacts would be anticipated to result in safety hazards related to airports during O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.6.3 Potential Avoidance and/or Minimization Measures.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.3.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

As previously discussed, the segments within Study Area 2 would not be located within the CAL FIRE Very High FHSZ within an SRA or LRA. Construction and O&M activities likely have no potential to expose people or structures to a significant risk involving wildland fires; however, the AMMs detailed in Section 3.3.6.3 Potential Avoidance and/or Minimization Measures could still be implemented to ensure fire prevention.

3.3.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B. The impacts that could be anticipated within Study Area 2 would not be expected to differ from those identified within Study Areas 1A and 1B.

3.3.7 Hydrology and Water Quality

3.3.7.1 Existing Conditions

Study Area 2 includes Segments A, S, T, V, and W, which would be located in RWQCB Los Angeles Region 4, and Segment U, which would be located in the RWQCB Los Angeles Region 2 and the Santa Ana Region 8. Water resources in these areas are also under the jurisdiction of CDFW South Coast Region 5 and USACE Los Angeles District.

The following subsections discuss hydrological resource existing conditions in Study Area 2; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for pipeline segments within this study area.

Surface Waters

Study Area 2 would cross five USGS watersheds (USGS 2023a). Segment T would cross the Lower Los Angeles River watershed. Segment V would cross the Frontal Santa Monica Bay-San Pedro Bay watershed. Segments A and W would cross the Dominguez Channel watershed. Segment S would cross the Alamitos Bay-San Pedro Bay and Lower Los Angeles River watersheds. Segment U would cross the Lower San Gabriel River watershed. The study area is located predominantly within urban roadways and the majority of water flow in these areas is conveyed via municipal separate storm sewer systems located below the ground surface.

Based on the review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Segment A would cross one named and one unnamed waterbody, Segment W would cross one named waterbody, Segment S would cross one named and one unnamed waterbody, and Segment U would cross one named and one unnamed waterbody. Segments T and V would not cross any mapped waterbodies. A list of all named waterbodies that would be crossed by the study area are included in Table 3.3-20: Named Waterbodies Crossed by Study Area 2. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- four artificial waterways,
- one canal/ditch, and
- one connector between waterways.

Table 3.3-20: Named Waterbodies Crossed by Study Area 2

Waterbody Name	Segment(s) Crossed	Waterbody Classification
Los Angeles River	S	Artificial Waterway
San Gabriel River	U	Artificial Waterway
Domingues Channel	W, A	Artificial Waterway

Source: USGS 2023b

Impaired Surface Waters

As indicated by a review of the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2022a), six impaired waterbodies would be crossed by the study area, as detailed in Table 3.3-21: Impaired Waterbodies Crossed by Study Area 2. Details regarding the pollutants that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

The listings associated with the waterbodies specify that copper, indicator bacteria, lead, benthic community effects, benzo(a)anthracene, benzo(a)pyrene, chlorodane, chrysene (C1-C4), DDT, dieldrin, PCBs, phenanthrene, pyrene, toxicity, polycyclic aromatic hydrocarbons, zinc, dioxin, nickel, dissolved oxygen, pH, and water temperature are the pollutants causing a lack of attainment of water quality standards for certain waterbodies within this study area. The 2020-2022 Integrated Report identified agricultural storm runoff or unknown sources as the sources of the pollutants.

Floodplains

As indicated by a review of the FEMA Flood Hazard Layer (FEMA 2023), the study area would cross several floodplains, including the 500-year and 100-year-floodplains. Floodplains that would be crossed by the segments within this study area are depicted in Attachment E: Hydrological Maps.

Groundwater

Study Area 2 would cross three groundwater basins (DWR 2022a). Segments T and S would cross the Coastal Plain of Los Angeles-Central and Coastal Plain of Los Angeles–West Coast groundwater basins. Segments A, V, and W would cross only the Coastal Plain of Los Angeles-West Coast groundwater basin. Segment U would cross the Coastal Plain of Los Angeles-Central and Coastal Plain of Orange County groundwater basins.

Publicly available data from DWR (DWR 2022b) was reviewed to estimate existing depths to groundwater. Groundwater readings from 13 monitoring wells located within two miles of the study area were reviewed as listed in Table 3.3-22: Groundwater Readings within Two Miles of Study Area 2. The 2023 groundwater-depth readings at these monitoring wells range from 5.6 feet bgs to 138.6 bgs. Groundwater levels within the study area are expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

Table 3.3-21: Impaired Waterbodies Crossed by Study Area 2

Waterbody Name[79]	RWQCB Jurisdiction	Segment(s) Crossed	Pollutant
Torrance Carson Channel	Regional Board 4 – Los Angeles Region	A	Copper, Indicator Bacteria, Lead
Dominguez Channel Estuary (unlined portion below Vermont Avenue in Los Angeles, California)	Regional Board 4 – Los Angeles Region	A, W	Benthic Community Effects, Benzo(a)anthracene, Benzo(a)pyrene, Chlorodane, Chrysene (C1-C4), Copper, DDT, Dieldrin, Indicator Bacteria, Lead, Polychlorinated biphenyls (PCBs), Phenanthrene, Pyrene, and Toxicity[80]
Dominguez Channel (lined portion above Vermont Avenue in Los Angeles, California)	Regional Board 4 – Los Angeles Region	A	Copper, Lead, Toxicity, Zinc, Indicator Bacteria
Colorado Lagoon	Regional Board 4 – Los Angeles Region	S	Chlorodane, DDT, Dieldrin, Indicator Bacteria, Lead, Polycyclic Aromatic Hydrocarbons, PCBs, Toxicity, Zinc
San Gabriel River Estuary	Regional Board 4 – Los Angeles Region	U	Copper, Dioxin, Indicator Bacteria, Nickel, Dissolved Oxygen

[79] Waterbody names of impaired waterbodies are based on data from the SWRCB California 2020-2022 Integrated Report and may differ from waterbody names included in Table 3.3-20: Named Waterbodies Crossed by Study Area 2, which are taken from USGS NHD data.

[80] For analysis related to the 2020-2022 Integrated Report, SWRCB measured toxicity levels by exposing test organisms consisting of vertebrate, invertebrate, and plant species to water or sediment samples to determine if the samples result in a statistically significant difference in mortality, growth, and reproduction when compared to a control sample.

Waterbody Name[79]	RWQCB Jurisdiction	Segment(s) Crossed	Pollutant
San Gabriel River Reach 1 (Estuary to Firestone)	Regional Board 4 – Los Angeles Region	U	pH, Water Temperature

Source: SWRCB 2022b

Table 3.3-22: Groundwater Readings within Two Miles of Study Area 2

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
T	1	N/A[81]	138.6
A	7	31.0	113.2
W	2	34.7	72.9
U	3	5.6	49.0

Source: DWR 2022b

3.3.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segments A, S, T, U, V, and W are summarized in Table 3.3-23: Study Area 2 Potential Impacts.

Surface Waters

As detailed in Section 3.3.7.1 Existing Conditions in the Surface Waters subsection, six mapped waterbodies would be crossed by Segments A, S, U, and W, including: one named waterbody and one unnamed waterbody that would be crossed by Segment A; one named waterbody and one unnamed waterbody that would be crossed by Segment S; one named waterbody and one unnamed waterbody that would be crossed by Segment U; and one named waterbody that would be crossed by Segment W. Segment A would also cross two impaired waterbodies; Segment W would cross one impaired waterbody; Segment S would cross one impaired waterbody; and Segment U would cross two impaired waterbodies, as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for segments that would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.3.7.3 Potential Avoidance and/or Minimization Measures.

[81] Not applicable because only one reading was provided.

Table 3.3-23: Study Area 2 Potential Impacts

Potential Impact	Project Phase	Segment A	Segment S	Segment T	Segment U	Segment V	Segment W
Water Quality Degradation	Construction	Potential Impact	Potential Impact	No Impact	Potential Impact	No Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	No Impact	Potential Impact	No Impact	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact	Potential Impact	No Impact	Potential Impact	No Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	No Impact	Potential Impact	No Impact	Potential Impact

Floodplains

Segments A, W, S, and U of the pipeline would be installed within and across the floodplains that are detailed in Section 3.3.7.1 Existing Conditions in the Floodplains subsection. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area that would cross floodplains. Construction and O&M activities would likely not cause permanent impacts related to floodplains. Potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.3.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 2, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.3.7.3 Potential Avoidance and/or Minimization Measures.

3.3.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segments A, S, T, U, V, and W. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 2 and could be implemented to further avoid or minimize potential impacts to segments within this study area.

3.3.8 Land Use and Planning

3.3.8.1 Existing Conditions

Section 3.3.1 Study Area 2 Description contains a description of each segment and Table 3.3-1: Jurisdictions Crossed by Study Area 2 details the distance that the segments would traverse each local jurisdiction within Study Area 2.

Land Use

Most of Segment A would travel along paved public roads within urban areas, excluding the easternmost portion that would cross an industrial area and the portions that would cross the Dominguez Channel. Surrounding land uses would include the Hawthorne Municipal Airport near the northern portion of the segment, as well as residential areas and parks interspersed between industrial areas and commercial areas along the remainder of the segment.

Most of Segment S would travel along paved public roads within urban areas, excluding the portions that would cross I-710, the Los Angeles River, and the Los Cerritos Channel. Surrounding land uses would include industrial areas along the westernmost portion of the segment and residential areas, mixed use areas, commercial areas, and parks along the remainder of the segment.

Most of Segment T would travel along paved public roads within urban areas, excluding the portion that would cross I-110. Surrounding land uses would include the Los Angeles International Airport and industrial areas along the westernmost portion of the segment, and residential areas, commercial areas, mixed use areas, and parks along the remainder of the segment.

The southern portion of Segment U would travel through an industrial area before crossing the San Gabriel River and traveling along paved public roads through mixed use areas and a small commercial area. The remainder of the segment would cross various parks, a commercial area, and an equestrian center, before crossing a medium-density residential area and an industrial area. Surrounding land uses would include commercial areas, residential areas, mixed use areas, and parks.

The entirety of Segment V would travel along paved public roads within urban areas. Surrounding land uses would include large-scale industrial areas, commercial and residential areas, and parks.

Most of Segment W would travel along paved public roads within urban areas. Surrounding land uses would include large-scale industrial areas interspersed with residential areas, commercial areas, and parks.

General plan land use designations that would be crossed by each segment and corridor within each jurisdiction within Study Area 2 are detailed in Table 3.3-24: General Plan Land Use Designations Crossed by Study Area 2.[82]

Special Land Use Designations

As described in the following subsections and detailed in Table 3.3-25: Agency-Managed and Protected Lands Crossed by Study Area 2 and Attachment F-1: Special Land Use Designations Maps, the segments would cross lands managed by federal, state, and/or local agencies. Section 3.3.3 Biological Resources contains a discussion of HCP/NCCP Conservation Plan boundaries that the segments would cross within Study Area 2. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Lands Managed by Federal Agencies

The Segment A and V corridors would cross the Los Angeles Air Force Base (AFB), which is managed by the Department of Defense (DoD). The mission of the base includes developing, testing, and maintaining military satellite and other DoD space systems (U.S. Space Force 2023).

Lands Managed by State Agencies

Segments A, S, T, U, and W would cross state highways managed by Caltrans.

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Parks and Open Space Areas

The Segment A corridor would cross the following parks:

- Hawthorne Memorial Park, which is managed by the City of Hawthorne;
- Marine Sports Park, which is managed by the City of Manhattan Beach;
- Aviation Park, Dominguez Park, Perry Allison Playfield, and Lilienthal Park, which are managed by the City of Redondo Beach;
- Columbia Park, which is managed by the City of Torrance; and
- Ken Malloy Harbor Regional Park, which is managed by the City of Los Angeles.

[82] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.3-24: General Plan Land Use Designations Crossed by Study Area 2

Segment	Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[83] (acres)
A	County of Los Angeles	High-Density Residential	N/A[84]	1.2
		Industrial	N/A[84]	14.2
		Low-Density Commercial	N/A[84]	7.0
		Medium-Density Residential	N/A[84]	26.9
		Open Space and Public Lands	N/A[84]	<0.1
		Other	N/A[84]	0.1
	City of Carson	Industrial	0.3	22.7
		Open Space and Public Lands	<0.1	1.2
		Other	<0.1	0.4
	City of El Segundo	High-Density Commercial	N/A[84]	<0.1
		Industrial	N/A[84]	7.3
		Low-Density Commercial	N/A[84]	1.0
		Medium-Density Residential	N/A[84]	5.5
		Other	N/A[84]	0.4
	City of Hawthorne	High-Density Residential	N/A[84]	1.8
		Industrial	N/A[84]	2.4
		Low-Density Commercial	N/A[84]	15.7
		Medium-Density Residential	N/A[84]	1.9
		Open Space and Public Lands	N/A[84]	2.5
		Other	N/A[84]	<0.1
		High-Density Commercial	N/A[84]	1.0

[83] The corridor includes 100 feet on either side of the pipeline.
[84] This is not applicable because the pipeline would not cross the land use designation.

Segment	Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[83] (acres)
	City of Inglewood	Low-Density Commercial	N/A[84]	4.0
		Medium-Density Residential	N/A[84]	1.2
		Mixed Use	N/A[84]	1.0
	City of Long Beach	Industrial	N/A[84]	0.2
		Open Space and Public Lands	N/A[84]	6.9
		Other	N/A[84]	0.2
	City of Los Angeles	High-Density Residential	N/A[84]	8.0
		Industrial	0.3	57.1
		Low-Density Commercial	N/A[84]	10.6
		Medium-Density Residential	N/A[84]	8.5
		Open Space and Public Lands	<0.1	10.1
		Other	N/A[84]	2.5
	City of Manhattan Beach	High-Density Commercial	N/A[84]	0.9
		High-Density Residential	N/A[84]	3.6
		Industrial	N/A[84]	3.7
		Low-Density Commercial	N/A[84]	2.7
		Medium-Density Residential	N/A[84]	0.3
		Open Space and Public Lands	N/A[84]	0.1
		Other	N/A[84]	0.1
	City of Redondo Beach	High-Density Residential	N/A[84]	35.0
		Industrial	N/A[84]	0.4
		Low-Density Commercial	N/A[84]	6.3
		Medium-Density Residential	N/A[84]	7.0
		Mixed Use	N/A[84]	0.8

Segment	Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[83] (acres)
	City of Torrance	High-Density Residential	N/A[84]	2.0
		Industrial	N/A[84]	20.0
		Low-Density Commercial	N/A[84]	4.7
		Medium-Density Residential	N/A[84]	1.1
		Other	N/A[84]	0.4
S	City of Long Beach	High-Density Residential	N/A[84]	2.4
		Industrial	0.3	26.5
		Low-Density Commercial	N/A[84]	0.6
		Mixed Use	0.2	75.3
		Open Space and Public Lands	0.4	13.3
		Other	N/A[84]	1.4
	City of Los Angeles	Industrial	<0.1	4.9
		Low-Density Commercial	N/A[84]	0.3
T	County of Los Angeles	High-Density Residential	N/A[84]	14.0
		Industrial	N/A[84]	1.5
		Medium-Density Residential	N/A[84]	4.1
		Open Space and Public Lands	N/A[84]	3.0
	City of Inglewood	High-Density Residential	N/A[84]	1.0
		Medium-Density Residential	N/A[84]	5.7
	City of Los Angeles	High-Density Residential	N/A[84]	1.0
		Industrial	N/A[84]	2.1
		Low-Density Commercial	N/A[84]	9.9
		Medium-Density Residential	N/A[84]	17.5
		Mixed Use	N/A[84]	<0.1

Segment	Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[83] (acres)
		Open Space and Public Lands	<0.1	1.2
		Other	N/A[84]	0.6
	City of South Gate	High-Density Residential	N/A[84]	0.1
		Industrial	N/A[84]	10.1
		Low-Density Commercial	N/A[84]	0.9
		Medium-Density Residential	N/A[84]	4.4
		Mixed Use	N/A[84]	29.1
U	City of Cerritos	Industrial	N/A[84]	1.3
		Low-Density Commercial	N/A[84]	<0.1
		Medium-Density Residential	N/A[84]	<0.1
	City of Lakewood	Industrial	N/A[84]	0.1
		Low-Density Commercial	<0.1	0.5
		Medium-Density Residential	<0.1	3.2
		Open Space and Public Lands	0.8	17.7
	City of Long Beach	High-Density Residential	N/A[84]	2.4
		Industrial	0.8	19.1
		Low-Density Commercial	0.2	6.5
		Mixed Use	N/A[84]	5.4
		Open Space and Public Lands	1.2	42.6
	City of Seal Beach	Industrial	0.2	5.0
		Low-Density Commercial	0.1	1.7
		Open Space and Public Lands	N/A[84]	<0.1
V	City of El Segundo	High-Density Residential	N/A[84]	3.5
		Industrial	0.1	24.4

Segment	Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[83] (acres)
		Low-Density Commercial	N/A[84]	1.7
		Medium-Density Residential	N/A[84]	<0.1
		Open Space and Public Lands	N/A[84]	0.5
		Other	N/A[84]	1.8
		Planned Development	N/A[84]	4.0
	City of Los Angeles	High-Density Residential	N/A[84]	0.2
		Industrial	N/A[84]	3.1
W	City of Carson	Industrial	0.4	28.9
		Low-Density Commercial	0.2	1.9
		Medium-Density Residential	0.7	5.9
		Open Space and Public Lands	N/A[84]	0.5
	City of Los Angeles	High-Density Residential	N/A[84]	5.2
		Industrial	0.2	10.3
		Low-Density Commercial	N/A[84]	6.1
		Medium-Density Residential	N/A[84]	6.1
		Open Space and Public Lands	N/A[84]	2.3

Source: California Governor's OPR 2024

Table 3.3-25: Agency-Managed and Protected Lands Crossed by Study Area 2

Segment	Agency/Organization	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[85] (acres)
Federal				
A	DoD	Los Angeles AFB	N/A[86]	<0.1
V	DoD	Los Angeles AFB	N/A[86]	1.7
Regional				
A	Port of Los Angeles	Coastal Zone	N/A[86]	5.1
S	LCWA	Los Cerritos Wetlands	0.1	2.6
T	County of Los Angeles	Ted Watkins Memorial Park	N/A[86]	3.0
U	Los Angeles County Department of Public Works	San Gabriel River Bike Trail	<0.1	0.7
W	Los Angeles Harbor Area Cemetery District	Wilmington Cemetery	N/A[86]	1.0
City				
A	City of Hawthorne	Hawthorne Memorial Park	N/A[86]	2.5
	City of Los Angeles	Ken Malloy Harbor Regional Park	N/A[86]	7.1
	City of Manhattan Beach	Marine Sports Park	N/A[86]	0.1
	City of Redondo Beach	Aviation Park	N/A[86]	1.2
	City of Redondo Beach	Dominguez Park	N/A[86]	1.0
	City of Redondo Beach	Lilienthal Park	N/A[86]	0.2

[85] The corridor includes 100 feet on either side of the pipeline.
[86] This is not applicable because the pipeline would not cross the special land use.

Segment	Agency/Organization	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[85] (acres)
	City of Redondo Beach	Perry Allison Playfield	N/A[86]	0.3
	City of Torrance	Columbia Park	N/A[86]	2.2
S	City of Long Beach	Coastal Zone	2.0	40.9
	City of Long Beach	Colorado Lagoon	N/A[86]	1.7
	City of Long Beach	Drake Park	N/A[86]	0.1
	City of Long Beach	Marina Vista Park	N/A[86]	2.3
	City of Long Beach	Miracle on Fourth Street Park	N/A[86]	0.1
	City of Long Beach	Sims Pond	N/A[86]	0.1
T	City of Los Angeles	Jordan Downs Recreation Center	0.1	1.7
	City of Los Angeles	Watts Senior Citizen Center	N/A[86]	0.4
	City of South Gate	South Gate Park	N/A[86]	2.3
U	City of Lakewood	Lakewood Equestrian Center	0.1	2.0
	City of Lakewood	Rynerson Park	0.5	10.1
	City of Long Beach	Coastal Zone	0.4	8.7
	City of Long Beach	El Dorado East Regional Park	1.0	26.2
	City of Long Beach	El Dorado Nature Center	N/A[86]	0.4
	City of Long Beach	El Dorado Park Golf Course	N/A[86]	<0.1
	City of Long Beach	El Dorado Park West	N/A[86]	10.4
	City of Long Beach	Good Neighbor Park	N/A[86]	0.4
	Long Beach Police Officer Association	Gemmrig Park	0.1	0.9

Segment	Agency/Organization	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[85] (acres)
V	City of El Segundo	Candy Cane Park	N/A[86]	0.1
W	City of Carson	Friendship Mini Park	N/A[86]	0.1
	City of Los Angeles	Banning Park and Museum	N/A[86]	1.3

Sources: CCC 2023b, DISDI 2024, GreenInfo Network 2023

Segment S or the corridor would cross the following parks and open space areas:

- Drake Park, Miracle on Fourth Street Park, Colorado Lagoon, Marina Vista Park, and Sims Pond, which are managed by the City of Long Beach; and
- Los Cerritos Wetlands, which are managed by the Los Cerritos Wetlands Authority (LCWA).

Segment T or the corridor would cross the following parks:

- South Gate Park, which is managed by the City of South Gate;
- Jordan Downs Recreation Center and Watts Senior Citizen Center, which are managed by the City of Los Angeles; and
- Ted Watkins Memorial Park, which is managed by the County of Los Angeles.

Segment U or the corridor would cross the following parks:

- Rynerson Park and Lakewood Equestrian Center, which are managed by the City of Lakewood;

- Good Neighbor Park, El Dorado East Regional Park, El Dorado Nature Center, El Dorado Park Golf Course, and El Dorado Park West, which are managed by the City of Long Beach;

- Gemmrig Park, which is managed by the Long Beach Police Officer Association; and

- San Gabriel River Bike Trail, which is maintained by the Los Angeles County Department of Public Works.

The Segment V corridor would cross Candy Cane Park, which is managed by the City of El Segundo.

The Segment W corridor would cross the following parks:

- Friendship Mini Park, which is managed by the City of Carson;
- Wilmington Cemetery, which is managed by the Los Angeles Harbor Area Cemetery District; and
- Banning Park and Museum, which is managed by the City of Los Angeles in cooperation with the Friends of Banning Museum.

The Banning Park and Museum is on the NRHP and CRHR and is designated as a California Historical Landmark and a City of Los Angeles Historic-Cultural Monument (California Department of Parks and Recreation [California State Parks] 2023; City of Los Angeles 2022; NPS 2023).

Coastal Zone

The Segment A corridor would traverse the CCC Coastal Zone within the Port of Los Angeles. The Port of Los Angeles has a certified port master plan (PMP), which delegates coastal permit jurisdiction to the Board of Harbor Commissioners (Port of Los Angeles 2014).

Segments S and U would traverse the Coastal Zone within the City of Long Beach. The City of Long Beach has a certified LCP, which delegates coastal permit jurisdiction to the Long Beach City Council (City of Long Beach 1980).

The CCC retains permitting authority for tidelands, submerged lands, and public trust lands (CCC 2023a).

3.3.8.2 Impact Discussion

In addition to potential impacts specifically related to Study Area 2, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segments to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.3-26: Land Use and Planning Potential Impacts for Study Area 2.

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

Land Uses

The segments within Study Area 2 could generally follow existing SoCalGas pipeline corridors and/or public roadways; therefore, new temporary or permanent access roads would not likely be needed for these segments. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

The segments could occur primarily within urban areas and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Table 3.3-26: Land Use and Planning Potential Impacts for Study Area 2

Potential Impact	Project Phase	Segment A	Segment S	Segment T	Segment U	Segment V	Segment W
Divide a community	Construction	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
	O&M	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact	Potential Impact	No Impact	No Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	No Impact	No Impact	Potential Impact	Potential Impact

Federal

Segments A and V could cross the Los Angeles AFB. Specifically, they could cross parking areas and/or access points for the base, which could temporarily impact and conflict with operations and the mission of the base during construction or O&M of the pipeline. An existing SoCalGas pipeline corridor occurs adjacent to the base, but a new easement would be required for any encroachment from the pipeline or construction activities within the limits of the base.

State

Segments A, S, T, U, and W could cross state highways, which could require an encroachment permit from Caltrans.

Local

Segments S and U could cross the Coastal Zone within the City of Long Beach and the corridor for Segment A could cross the Coastal Zone within the Port of Los Angeles. Construction and O&M activities within the Coastal Zone would require a coastal development permit and would need to be consistent with the applicable PMP/LCP and the California Coastal Act. Because each segment/corridor could either cross or occur adjacent to tidelands, the CCC could retain the permitting authority for the construction of the pipeline within the Coastal Zone. Therefore, coordination with the local jurisdictions, and the CCC as needed, could determine the proper permitting authority.

Each segment could cross locally managed parks and/or open space areas, and although impacts would be temporary, construction of the pipeline could conflict with these land uses. As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated when locating project facilities, SoCalGas would consult with local agencies regarding land use matters. Therefore, coordination with local agencies would be anticipated during future planning efforts.

While most of the parks/open space areas would only be subject to local discretionary authority, Segment S could cross Colorado Lagoon, Sims Pond, and Los Cerritos Wetlands and the Segment W could cross Banning Park and Museum. These parks/open space areas contain aquatic features or historical resources that are afforded additional protections (e.g., under the CWA and Porter-Cologne Water Quality Control Act for aquatic features and under CEQA for historical resources) and could require state and/or federal discretionary authority if these resources are impacted during construction and O&M of the pipeline.

3.3.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, the segments would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a result of construction and O&M of the pipeline; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce

potential land use conflicts are shown in Table 3.3-27: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 2. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.3-27: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 2

Potential Impact	Potential Avoidance and Minimization Measures
Potential land use conflict with the Los Angeles AFB	The pipeline could be routed outside the limits of the base, to the extent feasible.
Potential land use conflicts with the Colorado Lagoon, Sims Pond, Los Cerritos Wetlands, and Banning Park and Museum	The pipeline could be routed outside these areas or within existing SoCalGas pipeline corridors, to the extent feasible.

3.4 STUDY AREA 3A

3.4.1 Study Area 3A Description

Study Area 3A includes Segment D, as depicted in Figure 3.4-1: Study Area 3A Overview Map. Segment D would traverse approximately 8 miles of Los Angeles County and the cities of Carson, Cerritos, Lakewood, and Long Beach. This segment is part of the Collection Zone along with Segments B, E, G, I, J, K, L, M, and Y. Table 3.4-1: Jurisdictions Crossed by Study Area 3A details the distance in miles that the Segment D would cross through each jurisdiction. Segment D would generally connect from the City of Cerritos and west to the City of Carson in Los Angeles County.

Table 3.4-1: Jurisdictions Crossed by Study Area 3A

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
D	8	City of Carson	<1
		City of Cerritos	<1
		City of Lakewood	3
		City of Long Beach	3
		Unincorporated Los Angeles County	1

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

3.4.1.1 Summary of Potential Impacts

Segment D within this study area is preliminary, and the actual routing, engineering, and design and construction methods for the segment has not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, the segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of Segment D and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.4-2: Study Area 3A Potential Impact Summary summarizes the potential impacts identified for the segment within Study Area 3A.

Table 3.4-2: Study Area 3A Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of the segment
Biological Resources	• Potential impacts to species and habitat during construction and O&M of the segment • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M of the segment • Potential impacts to wetlands during construction and O&M of the segment • Potential impacts to wildlife movement and migration corridors during construction and O&M of the segment
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of the segment • Potential to change the significance of an archeological resource during construction and O&M of the segment • Potential to disturb human remains during construction and O&M of the segment • Potential to change the significance of a TCR during construction and O&M of the segment
Energy	• Potential impacts to existing energy resources during construction of the segment • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of the segment
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of the segment • Potential for a foreseeable upset or accident conditions during construction and O&M of the segment • Potential impacts to schools in close proximity to pipeline construction and O&M of the segment • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for the segment • Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of the segment

Environmental Factor	Potential Impact
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of the segment • Potential impacts to ground water quality and/or depletion during construction and O&M of the segment • Potential impacts to floodplains during construction and O&M of the segment
Land Use and Planning	• No impacts for the segment

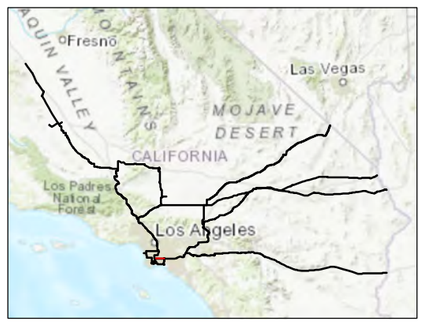
Figure 3.4-1: Study Area 3A Overview Map

Angeles Link Phase 1 Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- D
- Adjacent/Other Study Area Visible



SoCalGas

INSIGNIA ENVIRONMENTAL

1:80,000

0 1 2 Miles

Downey
Norwalk
Compton
Lakewood
Dominguez
Long Beach
LOS ANGELES
ORANGE
Study Area 3F (Y)
Study Area 3B (J)
Study Area 2 (W)
Study Area 2 (U)
Study Area 2 (A)
Study Area 2 (S)
105
110
405
710
605
5
D

Z:\Projects\SCG_Angeles_Link\MXD\03_FDRAFT_PipelineSegment_Overviews.mxd 7/18/2024

3.4.2 Air Quality and Greenhouse Gas Emissions

3.4.2.1 Existing Conditions

Section 3.4.1 Study Area 3A Description provides a description of the segment and the cities and counties that would be crossed by Segment D. Study Area 3A includes Segment D.

As depicted in Attachment A: Air Basins and Air Districts Maps, the entirety of Segment D is located in the SCAB, under the jurisdiction of the SCAQMD. The local topography and climate result in a high potential for air pollution in the SCAB. During the summer months, it is common for a warm air mass to descend over the cool, moist marine layer. The warm upper layer caps the marine layer and prevents pollutants from dispersing upward. The SCAB has an arid climate and receives abundant sunshine and little rainfall.

Attainment Status

Table 3.4-3: Study Area 3A Attainment Status summarizes the current attainment status for the criteria air pollutants with the CAAQS and NAAQS within Study Area 3A.

Table 3.4-3: Study Area 3A Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
SCAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Nonattainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segment.
Source: CARB 2023

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential

segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Air Quality

South Coast Air Quality Management District

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace their current CEQA Air Quality Handbook that was approved in 1993. Its current handbook provides guidance on how to evaluate a project's potential to impact air quality. The SCAQMD released updated air quality significance thresholds in March 2023 for criteria air pollutants to address the U.S. EPA's redesignation of the Coachella Valley to extreme non-attainment for the 2008 O_3 NAAQS. These thresholds are presented in Table 3.4-4: SCAQMD Criteria Air Pollutant Thresholds for Study Area 3A. The SCAQMD also requires the implementation of their Localized Significance Thresholds for projects within the district to evaluate potential impacts to sensitive receptors (SCAQMD 2023a).

Table 3.4-4: SCAQMD Criteria Air Pollutant Thresholds for Study Area 3A

Criteria Air Pollutant	Daily Construction Emissions (Pounds)	Daily Operation Emissions (Pounds)
NO_X	100	100
VOC	75	75
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
CO	550	550
Lead	3	3

Source: SCAQMD 2023a

Greenhouse Gases

South Coast Air Quality Management District

SCAQMD staff are convening an ongoing GHG working group to determine appropriate significance thresholds for project emissions. On December 5, 2008, the SCAQMD Governing Board adopted interim GHG significance threshold for projects and provided draft guidance to assist with these determinations (SCAQMD 2023b). For industrial projects, the SCAQMD considers any project with emissions in excess of 10,000 metric

tons of CO_2e emissions, including construction emissions amortized over 30 years and added to the operational GHG emissions, to be potentially significant.

3.4.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segment D, if built, within Study Area 3A are summarized in Table 3.4-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 3A.

Table 3.4-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 3A

Potential Impact	Project Phase	Segment D
Air Quality	Construction	Potential Impact
	O&M	Potential Impact
GHGs	Construction	Potential Impact
	O&M	Potential Impact

Air Quality

As noted in Table 3.4-3: Study Area 3A Attainment Status, Segment D would be in areas currently classified as nonattainment for O_3, $PM_{2.5}$, and PM_{10}. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for Segment D would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.4.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are summarized in Section 3.4.2.3 Potential Avoidance and/or Minimization Measures.

3.4.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M.

These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 3A and all AMMs are also applicable to this study area.

3.4.3 Biological Resources

3.4.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segment D. Biological resources in Study Area 3A are under the jurisdiction of the CDFW and the USFWS.

The following subsections discuss the conditions of biological resources in Study Area 3A; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segments within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that nine vegetation communities would be crossed by Segment D. Vegetation communities were classified according to the CWHR classification system (if this classification information was available). If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Urban, habitat is the predominant habitat present within a 200-foot-wide corridor centered on Segment D. The habitats and approximate area of each habitat that would be within the segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segment D within Study Area 3A would cross existing lacustrine habitat that would likely be classified as a sensitive natural community within California. Segment D would cross existing lacustrine habitat where the segment would cross the Los Angeles River. This feature has been significantly altered; however, the banks may be vegetated. Field surveys would be needed to determine if sensitive natural communities are present along the riverbanks.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segment in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment D would cross seven potentially jurisdictional features. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.4.7.1 Existing Conditions, wetland habitats may be present along these

jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); California Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, four protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segment D. No protected plant species were identified to have a likely potential to occur within 0.25 mile of Segment D. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near the segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

No protected plant species were identified to have a likely potential to occur within 0.25 mile of Segment D.

Protected Wildlife

As detailed in Table 3.4-6: Protected Wildlife Species Likely to Occur in Study Area 3A, four protected wildlife species would be likely to occur within portions of Segment D and/or within 0.25 mile of the segment centerline. No CNDDB records of protected wildlife species were identified within 0.25 mile of the segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), no USFWS-designated critical habitat for any species is present within the 200-foot-wide corridor centered on Segment D.

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segment D would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 3A.

Table 3.4-6: Protected Wildlife Species Likely to Occur in Study Area 3A

Segment	Species Common Name	Listing Status[87]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [88]
Amphibians and Reptiles				
D	California red-legged frog	FT	0.7	0.9
	Western pond turtle[89]	FPT	0.7	0.9
	Western spadefoot	FPT	0.7	0.9
Birds				
D	White-tailed kite	FP	99.0	98.8

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

[87] Explanation of listing status codes:

Federal listing codes:
- FPT: Federally proposed as threatened
- FT: Federally listed as threatened

State listing codes:
- FP: CDFW-designated as fully protected

[88] The buffer includes 0.25 mile on either side of the segment centerline.

[89] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segment D would not be located within any BLM-designated ACECs in Study Area 3A.

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segment D would not be located within the plan area of any NCCP or HCP in Study Area 3A.

Furthermore, the centerline of Segment D would not be located within 0.25 mile of any CDFW-managed lands or conservation easements in Study Area 3A. The Special Land Use Designations subsection of Section 3.4.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH Mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segment D would not cross any waterbodies in Study Area 3A that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that Segment D would cross through each ACE rank are detailed in Table 3.4-7: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 3A. The segment within Study Area 3A would only traverse the lowest connectivity rank.

Table 3.4-7: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 3A

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
D	7.5	0	0	0	0

Source: CDFW 2019

3.4.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3A are summarized in Table 3.4-8: Biological Resources Potential Impacts for Study Area 3A.

Protected Species and Their Habitat

Impacts to Protected Amphibian and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 3A.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 3A.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Construction and O&M activities could have the potential to result in impacts to riparian habitat or other sensitive natural communities, including lacustrine habitat that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wetlands, Riparian Habitat, or Other Sensitive Natural Communities subsection, would not differ within Study Area 3A.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.3.3 Potential Avoidance and/or Minimization Measures.

Table 3.4-8: Biological Resources Potential Impacts for Study Area 3A

Potential Impact	Project Phase	Segment D
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, and birds; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	No Impact
	O&M	No Impact

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 3A.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities would not conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans.

3.4.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 3A.

3.4.4 Cultural Resources and Tribal Cultural Resources

3.4.4.1 Existing Conditions

A total of 13 previously documented resources have been identified within a 0.25-mile buffer of Study Area 3A, as detailed in Table 3.4-9: Existing Cultural Resources in Study Area 3A. Of these resources, two are within a 200-foot-wide pipeline corridor (comprising 100 feet on either side of the segment centerline).

Table 3.4-9: Existing Cultural Resources in Study Area 3A

Segment	Relationship to Segment	Total Identified Resources
D	Within[90]	2
	0.25 mile	11

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 3A was not available. Until further information can be acquired, all of the two cultural resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.4.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segment D, if built, within Study Area 3A are summarized in Table 3.4-10: Cultural and Tribal Resources Potential Impact for Study Area 3A. All known eligible and unevaluated resources within Study Area 3A were analyzed to determine if Segment D could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 3A that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary route for Segment D, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.4.4.3 Potential Avoidance and/or Minimization Measures.

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources subsection. Construction and O&M activities would have the potential for direct impacts to historical resources identified for the segment in this study area.

[90] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

Table 3.4-10: Cultural and Tribal Resources Potential Impact for Study Area 3A

Potential Impact	Project Phase	Segments D and I
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.4.3 Potential Avoidance and/or Minimization Measures.

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for all segments in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Construction and O&M activities would have the potential for direct impacts to human remains for all segments in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Construction and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during AB 52 consultation with tribes.

3.4.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed

in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.4.5 Energy

3.4.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within Los Angeles County that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 3A.

Existing Local Energy Use

Electricity

Within Study Area 3A, SCE is the primary provider of electricity (SCE 2023). Additional information about SCE's programs and RPS requirements is included in Study Area 1B Section 3.2.5.1 Existing Conditions in the Existing Local Energy Use subsection. As detailed in Table 3.4-11: Electricity Consumption in 2022 for Counties Crossed by Study Area 3A, approximately 68 billion kWh of electricity were consumed in Los Angeles County in 2022.

Table 3.4-11: Electricity Consumption in 2022 for Counties Crossed by Study Area 3A

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	23,255.5	45,229.5	**68,485.0**

Source: CEC 2022a

Natural Gas

Within Study Area 3A, SoCalGas provides natural gas service (SoCalGas 2024). As detailed in Table 3.4-12: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 3A, approximately 3 billion therms[91] of natural gas were consumed in Los Angeles County in 2022.

[91] One therm is equal to 100,000 Btu, or 100 kBtu.

Table 3.4-12: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 3A

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	1,122.3	1,698.0	**2,820.3**

Source: CEC 2022a

Diesel and Gasoline

Within Study Area 3A, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

As detailed in Table 3.4-13: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3A, approximately 3 billion gasoline fuel sales and 295 million diesel fuel sales were estimated in Los Angeles County in 2022.

Table 3.4-13: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3A

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Los Angeles County	3,070	295

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Solar Resource Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other (CEC 2024). According to the Solar Resources dataset from

the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, all of Study Area 3A overlaps the Los Angeles Metro Solar Resource Area.

Los Angeles County

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Los Angeles County subsection, sites identified for potential renewable energy generation are listed in the REMP (County of Los Angeles 2020). Segment D within Study Area 3A would not overlap any approved or in-progress PV solar-generation facilities within Los Angeles County (CEC 2023c).

3.4.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3A are summarized in Table 3.4-14: Study Area 3A Potential Energy Impacts.

Table 3.4-14: Study Area 3A Potential Energy Impacts

Potential Impact	Project Phase	Segment D
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact
	O&M	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact
	O&M	No Impact

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.5.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.5.3 Potential Avoidance and/or Minimization Measures.

3.4.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.4.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts would be unlikely to result in significant environmental impacts or conflicts with a state or local plan for renewable energy and could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

3.4.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 3A.

3.4.6.1 Existing Conditions

Section 3.4.1 Study Area 3A Description provides a description of the segment, as well as the counties and cities through which the segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 3A are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed five open cases and 26 closed hazardous materials cases within 1,000 feet of Segment D. Open hazardous materials sites are detailed in Table 3.4-15: Open Hazardous Materials Sites Within 1,000 Feet of Study Area 3A.

Fire Hazards

Segment D would not be located within the CAL FIRE FHSZ within an SRA or LRA.

Schools and Day-Care Centers

Schools and day-care centers within 0.5 mile of Study Area 3A are presented in Table 3.4-16: Schools and Day-Care Centers Within 0.5 Mile of Study Area 3A.

Airports

The Long Beach Airport is located approximately 1.3 miles from Segment D. Segment D is not located within the planning boundary/Area of Influence designated for the Long Beach Airport.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segment D in Study Area 3A is managed by the following plans:

- County of Los Angeles OAEOP (County of Los Angeles 2023) and
- 2020 County of Los Angeles AHMP (County of Los Angeles 2020).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

Table 3.4-15: Open Hazardous Materials Sites Within 1,000 Feet of Study Area 3A

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[92] (feet)	Media Affected	Regulatory Status
GeoTracker Sites				
Mobil #18-Mpl (Former #11-Mpl)	D	14	Aquifer used for drinking water supply	Open - Remediation
Solvay Usa Inc Formerly Marchem Technologies	D	315	Not Specified	SWT-No Plan Returned[93]
La Co Sheriff Lakewood Station	D	493	Other Groundwater (uses other than drinking water)	Open - Eligible for Closure
EnviroStor Sites				
Former Red Fox Bowling Alley	D	160	Not Specified	Inactive - Needs Evaluation
Marchem Technologies, LLC	D	994	Not Specified	Inactive - Needs Evaluation

Sources: DTSC 2024 and SWRCB 2024

Table 3.4-16: Schools and Day-Care Centers Within 0.5 Mile of Study Area 3A

Segment	Schools	Day-Care Centers
D	20	28

Source: U.S. Department of Homeland Security 2024

[92] Distances were calculated based on the approximate center point coordinates provided by GeoTracker and EnviroStor. Depending on the actual property boundaries of each hazardous materials site and/or facility, these sites may be closer than specified.

[93] SWTs are underground storage tanks. These tanks are required to be closed pursuant to Health and Safety Code Section 25292.05, which requires closure of these sites by December 31, 2025. Local permitting agencies (Certified Unified Program Agencies) or the SWRCB oversee compliance (SWRCB 2024). The SWTs are no longer updated in GeoTracker and their status should be checked in Cal EPA's California Environmental Reporting System during future environmental review (Cal EPA 2024).

3.4.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segment within Study Area 3A are summarized in Table 3.4-17: Study Area 3A Potential Impacts.

Table 3.4-17: Study Area 3A Potential Impacts

Potential Impact	Project Phase	Segment D
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact
	O&M	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact
	O&M	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	Potential Impact
	O&M	Potential Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	Potential Impact
	O&M	Potential Impact
Public Airport and/or Private Airstrip Hazards	Construction	No Impact
	O&M	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact
	O&M	Potential Impact
Wildland Fires	Construction	No Impact
	O&M	No Impact

Impacts are based on the preliminary routes of the segments as engineering for the pipeline has not occurred and the final alignment route has not been determined. The potential for these impacts could increase or decrease depending on the final design.

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection

Based on the resources present in this study area, construction and O&M activities would be anticipated to have a potential for temporary or permanent impact to the public

or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.6.3 Potential Avoidance and/or Minimization Measures.

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities would have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. However, most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Hazardous Substances in Close Proximity to Schools subsection. A total of 20 schools and 28 day-care centers are located within 0.5 mile of where Segments D would be located. Construction and O&M activities would have a potential for a hazardous emission or impacts resulting from handling hazardous materials within 0.5 mile of a school. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.6.3 Potential Avoidance and/or Minimization Measures.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Existing Hazardous Materials Sites Listed in Government Code Section 65962.5 subsection.

Based on the 5 open cases identified within 1,000 feet of Segment D within Study Area 3A, temporary or permanent impacts may occur due to existing subsurface contamination that may be present during construction or O&M. Construction and O&M activities would have a potential for existing hazardous materials sites to create a significant hazard to the public or the environment. However, most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.4.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

As previously discussed, Segment D is not located within the planning boundary/Area of Influence designated for the Long Beach Airport. Therefore, no safety concerns would be anticipated from construction or O&M activities.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency

Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.4.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

As previously discussed, the segment within Study Area 3A would not be located within the CAL FIRE Very High FHSZ within an SRA or LRA. Construction and O&M activities likely have no potential to expose people or structures to a significant risk involving wildland fires; however, the AMMs detailed in Section 3.4.6.3 Potential Avoidance and/or Minimization Measures could still be implemented to ensure fire prevention.

3.4.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B. The impacts that could be anticipated within Study Area 3A would not be expected to differ from those identified within Study Areas 1A and 1B.

3.4.7 Hydrology and Water Quality

3.4.7.1 Existing Conditions

Study Area 3A includes Segment D, which would be located in RWQCB Los Angeles Region 4. Water resources in the area are also under the jurisdiction of CDFW South Coast Region 5 and USACE Los Angeles District.

The following subsections discuss hydrological resource existing conditions in Study Area 3A; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for the pipeline segment within this study area.

Surface Waters

Study Area 3A would cross three USGS watersheds (USGS 2023a). Segment D would cross the Alamitos Bay-San Pedro Bay, Lower Los Angeles River, and Lower San Gabriel River watersheds. The Study Area is located predominantly within urban roadways and the majority of water flow in these areas is conveyed via municipal separate storm sewer systems located below the ground surface.

Based on review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Study Area 3A would cross three named and four unnamed waterbodies. A list of named waterbodies crossed by the study area are included in Table 3.4-18: Named Waterbodies Crossed by Study Area 3A. The identified drainage types for all waterbodies (named and unnamed) are as follows:

- three artificial waterways,
- one canal/ditch, and
- three streams/rivers.

Impaired Surface Waters

As indicated by a review of the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2022a), three impaired water bodies would be crossed by Segment D, as listed in Table 3.4-19: Impaired Waterbodies Crossed by Study Area 3A. Details regarding the pollutants that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b). The listings associated with these waterbodies specify that benthic community effects, copper, indicator bacteria, lead, pH, trash, zinc, ammonia, nutrients, oil, and water temperature are the pollutants causing a lack of attainment of water quality standards for waterbodies within this study area. The 2020-2022 Integrated Report identified urban runoff, surface runoff, natural sources, nonpoint sources, point sources, or unknown sources as the sources of the pollutants.

Table 3.4-18: Named Waterbodies Crossed by Study Area 3A

Waterbody Name	Segment Crossed	Waterbody Classification
Compton Creek	D	Artificial waterway
Los Angeles River	D	Artificial waterway
San Gabriel River	D	Artificial waterway

Source: USGS 2023b

Table 3.4-19: Impaired Waterbodies Crossed by Study Area 3A

Waterbody Name[94]	RWQCB Jurisdiction	Segment Crossed	Pollutant
Compton Creek	Regional Board 4 – Los Angeles Region	D	Benthic Community Effects, Copper, Indicator Bacteria, Lead, pH, Trash, Zinc
Los Angeles River Reach 2 (Carson to Figueroa Street)	Regional Board 4 – Los Angeles Region	D	Ammonia, Copper, Indicator Bacteria, Lead, Nutrients, Oil, Trash
San Gabriel River Reach 1 (Estuary to Firestone)	Regional Board 4 – Los Angeles Region	D	pH, Water Temperature

Source: SWRCB 2022a

Floodplains

As indicated by a review of the FEMA Flood Hazard Layer (FEMA 2023), Study Area 3A would cross several floodplains, including the 500-year and 100-year-floodplains. Floodplains that would be crossed by the segment within this study area are depicted in Attachment E: Hydrological Maps.

Groundwater

The study area would cross two groundwater basins (DWR 2022a). Segment D would cross the Coastal Plain of Los Angeles–West Coast and the Coastal Plain of Los Angeles–Central groundwater basins.

Publicly available data from DWR (DWR 2022b) was reviewed to estimate existing depths to groundwater. Groundwater readings from two monitoring wells located within

[94] Waterbody names of impaired waterbodies are based on data from the SWRCB California 2020-2022 Integrated Report and may differ from waterbody names included in Table 3.4-18: Named Waterbodies Crossed by Study Area 3A, which are taken from USGS NHD data.

two miles of the Study Area were reviewed, as listed in Table 3.4-20: Groundwater Readings within Two Miles of Study Area 3A.

Table 3.4-20: Groundwater Readings within Two Miles of Study Area 3A

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
D	2	44.3	97.0

Source: DWR 2022b

Groundwater levels within the study area are expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

3.4.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segment D are summarized in Table 3.4-21: Study Area 3A Potential Impacts.

Table 3.4-21: Study Area 3A Potential Impacts

Potential Impact	Project Phase	Segment D
Water Quality Degradation	Construction	Potential Impact
	O&M	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact
	O&M	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact
	O&M	Potential Impact

Surface Waters

As detailed in Section 3.4.7.1 Existing Conditions in the Surface Waters subsection, seven mapped waterbodies would be crossed by Segment D, including: three named waterbodies and four unnamed waterbodies. Segment D would also cross three impaired waterbodies as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study

area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for where Segment D would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.4.7.3 Potential Avoidance and/or Minimization Measures.

Floodplains

Segment D would be installed within and across the floodplains that are detailed in Section 3.4.7.1 Existing Conditions in the Floodplains subsection. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross floodplains. Construction and O&M activities would likely not cause permanent impacts related to floodplains. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.4.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 3A, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.4.7.3 Potential Avoidance and/or Minimization Measures.

3.4.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segment D. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 3A and could be implemented to avoid or reduce potential impacts to segment within this study area.

3.4.8 Land Use and Planning

3.4.8.1 Existing Conditions

Section 3.4.1 Study Area 3A Description contains a description of Segment D and Table 3.4-1: Jurisdictions Crossed by Study Area 3A details the distance that the Segment D would traverse each jurisdiction within Study Area 3A.

Land Use

Most of Segment D would travel along paved public roads within urban areas, excluding the westernmost portion of the segment that would intersect with Study Area 3F, as well as the Compton Creek, Los Angeles River, and San Gabriel River crossings. Surrounding land uses would include industrial areas along the westernmost and easternmost portions of the segment and residential areas, mixed use areas, commercial areas, and parks throughout the rest of the segment.

General plan land use designations that would be crossed by Segment D and the corridor within each jurisdiction within Study Area 3A are detailed in Table 3.4-22: General Plan Land Use Designations Crossed by Study Area 3A.[95]

Special Land Use Designations

As described in the following subsections and detailed in Table 3.4-23: Agency-Managed and Protected Lands Crossed by Study Area 3A and Attachment F-1: Special Land Use Designations Maps, Segment D would cross lands managed by state and/or local agencies. Section 3.4.3 Biological Resources contains a discussion of HCP/NCCP boundaries that the segments would cross within Study Area 3A. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Lands Managed by Federal Agencies

Based on the publicly available data reviewed, Segment D would not cross any lands managed by federal agencies.

Lands Managed by State Agencies

Segment D would cross a state highway managed by Caltrans.

[95] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.4-22: General Plan Land Use Designations Crossed by Study Area 3A

Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[96] (acres)
City of Carson	Industrial	0.2	3.4
City of Cerritos	Industrial	0.2	6.2
	Open Space and Public Lands	<0.1	0.4
City of Lakewood	High-Density Residential	N/A[97]	0.3
	Industrial	N/A[97]	0.4
	Low-Density Commercial	N/A[97]	5.9
	Medium-Density Residential	<0.1	7.3
	Mixed Use	N/A[97]	<0.1
	Open Space and Public Lands	0.3	10.9
City of Long Beach	High-Density Residential	N/A[97]	1.2
	Industrial	0.1	2.6
	Low-Density Commercial	N/A[97]	1.4
	Medium-Density Residential	N/A[97]	0.5
	Mixed Use	0.1	21.6
	Open Space and Public Lands	0.3	8.1
	Other	N/A[97]	0.2
County of Los Angeles	Industrial	N/A[97]	6.2
	Medium-Density Residential	N/A[97]	0.1
	Open Space and Public Lands	N/A[97]	0.4

Source: California Governor's OPR 2024

[96] The corridor includes 100 feet on either side of the pipeline.
[97] This is not applicable because the pipeline would not cross the land use designation.

Table 3.4-23: Agency-Managed and Protected Lands Crossed by Study Area 3A

Agency	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[98] (acres)
Regional			
County of Los Angeles Department of Public Works	San Gabriel River Bike Trail	<0.1	0.6
City			
City of Lakewood	Bolivar Park	N/A[99]	0.4
	Boyar Park	0.1	2.2
	Lakewood Nature Trail	<0.1	0.5
City of Long Beach	51st Street Greenbelt	0.0	0.2
	C. David Molina Park	N/A[99]	0.2
	Scherer Park	N/A[99]	0.7
	Sleepy Hollow Greenbelt	N/A[99]	0.1

Source: GreenInfo Network 2023

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segment D or its corridor would cross the following parks and open space areas:

- 51st Street Greenbelt, C. David Molina Park, Sleepy Hollow Greenbelt, and Scherer Park, which are managed by the City of Long Beach;
- Bolivar Park, Boyar Park, and Lakewood Nature Trail, which are managed by the City of Lakewood; and
- San Gabriel River Bike Trail, which is maintained by the Los Angeles County Department of Public Works.

[98] The corridor includes 100 feet on either side of the pipeline.
[99] This is not applicable because the pipeline would not cross the special land use.

3.4.8.2 Impact Discussion

In addition to potential impacts specifically related to Study Area 3A, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segment to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.4-24: Land Use and Planning Potential Impacts for Study Area 3A.

Table 3.4-24: Land Use and Planning Potential Impacts for Study Area 3A

Potential Impact	Project Phase	Segment D
Divide a community	Construction	No Impact
	O&M	No Impact
Conflict with an existing plan, policy, or regulation	Construction	No Impact
	O&M	No Impact

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

Land Uses

Segment D could generally follow existing SoCalGas pipeline corridors and/or public roadways. New temporary or permanent access roads would likely not be needed. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

The segment could occur primarily in urban areas and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

State

Segment D could cross a state highway, which could require an encroachment permit from Caltrans.

Local

The segment could cross locally managed parks and/or open space areas, and although impacts would be temporary, construction of the pipeline could conflict with these land uses. As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters. Therefore, coordination with local agencies would be anticipated during future planning efforts.

3.4.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, Segment D would not divide an established community or conflict with applicable land use plans or policies. As such, no AMMs would likely be required, assuming close coordination with land-managing agencies and local jurisdictions occurs.

3.5 STUDY AREA 3B

3.5.1 Study Area 3B Description

Study Area 3B includes Segment J, as depicted in Figure 3.5-1: Study Area 3B Overview Map. The segment would traverse approximately 60 miles of Los Angeles, Orange, Riverside, and San Bernardino counties and the cities of Anaheim, Buena Park, Cerritos, Chino, Chino Hills, Eastvale, Fontana, Jurupa Valley, La Palma, Lakewood, Ontario, Placentia, Rialto, and Yorba Linda. Segment J is part of the Collection Zone along with Segments B, D, E, G, I, K, L, M and Y. Table 3.5-1: Jurisdictions Crossed by Study Area 3B details the distance that the Study Area 3B segment would cross through each jurisdiction. Segment J would generally connect from Rialto southwest through Chino Hills State Park and terminate in the City of Cerritos.

3.5.1.1 Summary of Potential Impacts

Segment J within this study area is preliminary, and the actual routing, engineering, and design and construction methods for the segment has not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, the segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of Segment J and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.5-2: Study Area 3B Potential Impact Summary summarizes the potential impacts identified for the segment within Study Area 3B.

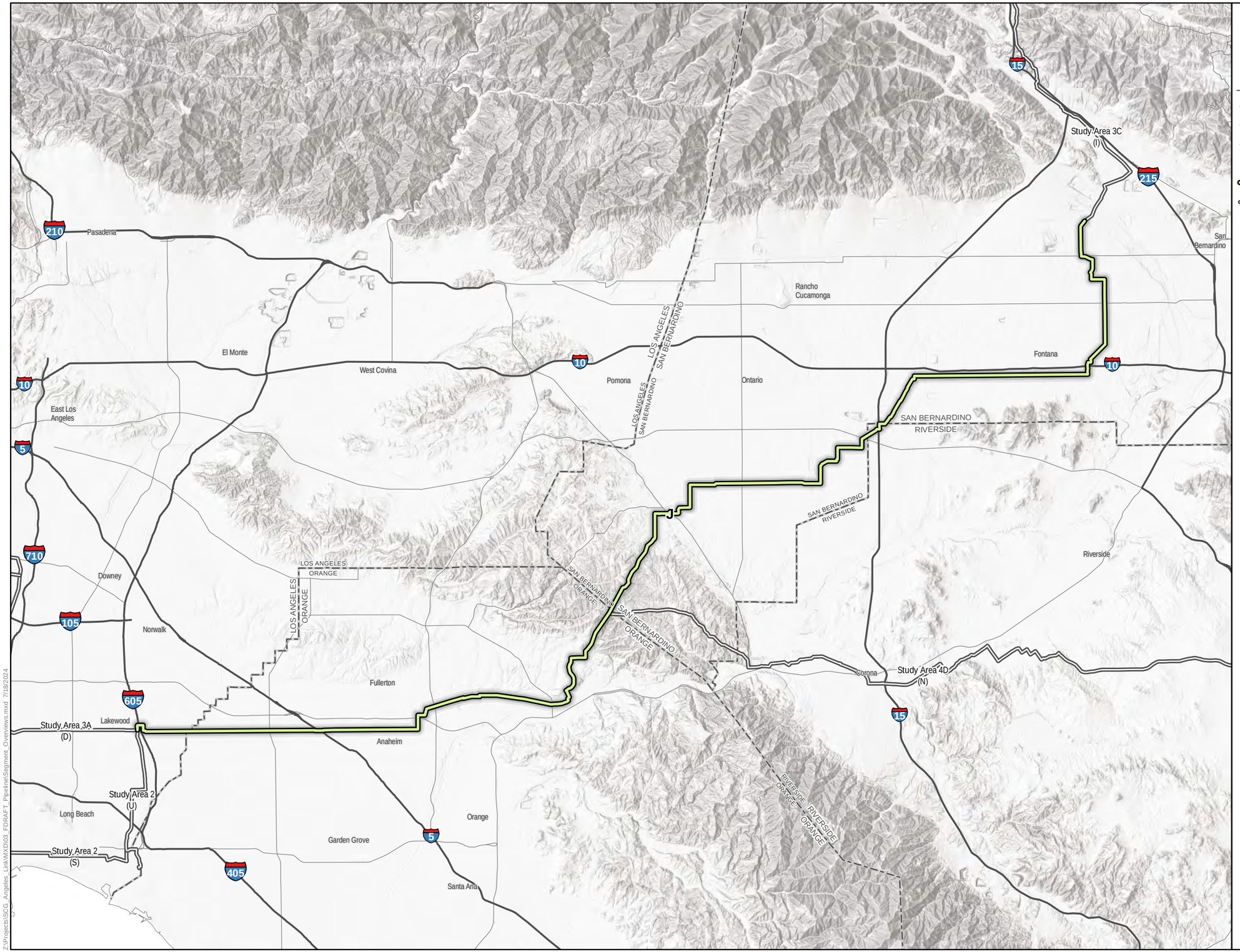


Figure 3.5-1: Study Area 3B
Overview Map

Angeles Link Phase 1
Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- J
- Adjacent/Other Study Area Visible

SoCalGas

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Table 3.5-1: Jurisdictions Crossed by Study Area 3B

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
J	60	City of Anaheim	9
		City of Buena Park	3
		City of Cerritos	2
		City of Chino	4
		City of Chino Hills	6
		City of Eastvale City	1
		City of Fontana	6
		City of Jurupa Valley	<1
		City of La Palma	2
		City of Lakewood	<1
		City of Ontario	9
		City of Placentia	2
		City of Rialto	7
		City of Yorba Linda	4
		Unincorporated Orange County	2
		Unincorporated San Bernardino County	3

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

Table 3.5-2: Study Area 3B Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of the segment
Biological Resources	• Potential impacts to species and habitat during construction and O&M of the segment • Potential impacts to wetlands during construction and O&M of the segment • Potential impacts to wildlife movement and migration corridors during construction and O&M of the segment • Potential to conflict with existing NCCPs/HCPs and other conservation plans during construction and O&M of the segment
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of the segment • Potential to change the significance of an archeological resource during construction and O&M of the segment • Potential to disturb human remains during construction and O&M of the segment • Potential to change the significance of a TCR during construction and O&M of the segment
Energy	• Potential impacts to existing energy resources during construction of the segment • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of the segment
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of the segment • Potential for a foreseeable upset or accident conditions during construction and O&M of the segment • Potential impacts to schools in close proximity to pipeline construction and O&M of the segment • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for the segment • Potential impacts to public airports and/or private airstrips during construction of the segment

Environmental Factor	Potential Impact
	• Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of the segment • Potential to contribute to wildland fires during construction and O&M of the segment
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of the segment • Potential impacts to ground water quality and/or depletion during construction and O&M of the segment • Potential impacts to floodplains during construction and O&M of the segment
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M of the segment

3.5.2 Air Quality and Greenhouse Gas Emissions

3.5.2.1 Existing Conditions

Section 3.5.1 Study Area 3B Description provides a description of the segment and the cities and counties that would be crossed by Segment J. Study Area 3B includes Segment J.

As depicted in Attachment A: Air Basins and Air Districts Maps, the entirety of Segment J would be located in the SCAB, under the jurisdiction of the SCAQMD. The local topography and climate result in a high potential for air pollution in the SCAB. During the summer months, it is common for a warm air mass to descend over the cool, moist marine layer. The warm upper layer caps the marine layer and prevents pollutants from dispersing upward. The SCAB has an arid climate and receives abundant sunshine and little rainfall.

Attainment Status

Table 3.5-3: Study Area 3B Attainment Status summarizes the current attainment status for the criteria air pollutants with the CAAQS and NAAQS for the district within Study Area 3B.

Table 3.5-3: Study Area 3B Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
SCAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Nonattainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segment.
Source: CARB 2023

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from

the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Air Quality

South Coast Air Quality Management District

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace their current CEQA Air Quality Handbook that was approved in 1993. Their current handbook provides guidance on how to evaluate a project's potential to impact air quality. The SCAQMD released updated air quality significance thresholds in March 2023 for criteria air pollutants to address the U.S. EPA's redesignation of the Coachella Valley to extreme non-attainment for the 2008 O_3 NAAQS. These thresholds are presented in Table 3.5-4: SCAQMD Criteria Air Pollutant Thresholds in Study Area 3B. The SCAQMD also requires the implementation of their Localized Significance Thresholds for projects within the district to evaluate potential impacts to sensitive receptors (SCAQMD 2023a).

Table 3.5-4: SCAQMD Criteria Air Pollutant Thresholds in Study Area 3B

Criteria Air Pollutant	Daily Construction Emissions (Pounds)	Daily Operation Emissions (Pounds)
NO_X	100	100
VOC	75	75
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
CO	550	550
Lead	3	3

Source: SCAQMD 2023a

Greenhouse Gases

South Coast Air Quality Management District

SCAQMD staff are convening an ongoing GHG working group to determine appropriate significance thresholds for project emissions. On December 5, 2008, the SCAQMD Governing Board adopted interim GHG significance threshold for projects and provided draft guidance to assist with these determinations (SCAQMD 2023b). For industrial

projects, the SCAQMD considers any project with emissions in excess of 10,000 metric tons of CO_2e emissions, including construction emissions amortized over 30 years and added to the operational GHG emissions, to be potentially significant.

3.5.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segment J, if built, within Study Area 3B are summarized in Table 3.5-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 3B.

Table 3.5-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 3B

Potential Impact	Project Phase	Segment J
Air Quality	Construction	Potential Impact
	O&M	Potential Impact
GHGs	Construction	Potential Impact
	O&M	Potential Impact

Air Quality

As noted in Table 3.5-3: Study Area 3B Attainment Status, the segment associated with Study Area 3B would be in areas currently classified as nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.5.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are summarized in Section 3.5.2.3 Potential Avoidance and/or Minimization Measures.

3.5.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 3B and all AMMs are also applicable to this study area.

3.5.3 Biological Resources

3.5.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segment J. Biological resources in Study Area 3B are under the jurisdiction of the CDFW and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 3B; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segment within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that 11 vegetation communities would be present within the Study Area 3B Segment J. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Urban, annual grassland, and pasture habitats are the predominant habitats present within a 200-foot-wide corridor centered on Segment J. The habitats and approximate area of each habitat that would be within the segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segment J within Study Area 3B would not cross existing habitat that would likely be classified as a sensitive natural community within California. Riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segments in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment J would cross 28 potentially jurisdictional features. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.5.7.1 Existing Conditions, wetland habitats may be present along these jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code

Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, 14 protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segment J. No protected plant species were identified to have a likely potential to occur within 0.25 mile of Segment J. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near the segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

No protected plant species were identified to have a likely potential to occur within 0.25 mile of Segment J.

Protected Wildlife

As detailed in Table 3.5-6: Protected Wildlife Species Likely to Occur in Study Area 3B, 14 protected wildlife species would be likely to occur within portions of Segment J and/or within 0.25 mile of the segment centerline. Unless otherwise denoted, the species were identified to have a CNDDB record within 0.25 mile of the segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within the segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), Segment J would be located within USFWS-designated critical habitat for the coastal California gnatcatcher and San Bernardino kangaroo rat. Segment J would cross approximately 1.7 miles and approximately 0.1 mile of critical habitat for the coastal California gnatcatcher and San Bernardino kangaroo rat, respectively. USFWS-designated critical habitat for the coastal California gnatcatcher is located in undeveloped hills to the northeast of the City of Yorba Linda. USFWS-designated critical habitat for the San Bernardino kangaroo rat is located within the Cajon Wash which flows south from the unincorporated community of Cajon Junction.

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segment J would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 3B.

Table 3.5-6: Protected Wildlife Species Likely to Occur in Study Area 3B

Segment	Species Common Name	Listing Status[100]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [101]
Amphibians and Reptiles				
J	Arroyo toad[102]	FE	0.0	0.1
	California red-legged frog[102]	FT	13.1	11.5
	Western pond turtle[102,103]	FPT	13.1	11.5
	Western spadefoot[102]	FPT	11.8	10.0
Birds				
J	Coastal California gnatcatcher	FT	3.0	2.5
	California least tern	FE, SE, FP	0.2	0.3
	Golden eagle[104]	FP	31.1	29.8
	Least Bell's vireo	SE, FE	0.3	0.1

[100] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered
- FPT: Federally proposed as threatened
- FT: Federally listed as threatened

State listing codes:
- SE: State-listed as endangered
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[101] The buffer includes 0.25 mile on either side of the segment centerline.

[102] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

[103] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

[104] For bald eagles and golden eagles, a one-mile buffer on either side of a segment centerline was used.

Segment	Species Common Name	Listing Status[100]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[101]
	Tricolored blackbird[102]	ST	0.0	0.1
	White-tailed kite[102]	FP	77.7	78.3
Fish				
J	Santa Ana sucker[102]	FT	0.0	0.1
Invertebrates				
J	Delhi Sands flower-loving fly	FE	32.6	32.8
Mammals				
J	San Bernardino kangaroo rat	SE, FE	0.3	0.8
	Stephens' kangaroo rat[102]	ST, FT	11.4	9.5

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segment J would not be located within any BLM-designated ACECs in Study Area 3B.

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segment J would be located within the Plan Area of the Western Riverside County Multiple Species NCCP/HCP. Segment J would cross approximately 1.0 mile of the NCCP/HCP plan area. Within the 200-foot-wide corridor, Segment J would overlap approximately 23.3 acres of the NCCP/HCP plan area. The plan is currently in the implementation stage, so additional research would be needed to determine potential conflicts with the plan.

In addition, Segment J would be located within the Plan Area of the OCTA NCCP/HCP. Segment J would cross approximately 22.0 mile of the NCCP/HCP plan area. Within the 200-foot-wide corridor, Segment J would overlap approximately 534.4 acres of the NCCP/HCP plan area. The plan is currently in the implementation stage, so additional research would be needed to determine potential conflicts with the plan.

Furthermore, the centerline of Segment J would not be located within 0.25 mile of a CDFW-managed land or conservation easement in Study Area 3B. The Special Land Use Designations subsection of Section 3.5.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segment J would not cross any waterbodies in Study Area 3B that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.5-7: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity. A majority of the segment would traverse the lowest connectivity rank. The areas with the highest connectivity ranks would occur where Segment J traverses undeveloped lands at the edge of the Chino Hills.

Table 3.5-7: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 3B

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
J	54.0	0	3.2	0	3.0

Source: CDFW 2019

3.5.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3B are summarized in Table 3.5-8: Biological Resources Potential Impacts for Study Area 3B.

Protected Species and Their Habitat

Impacts to Protected Amphibian, Mammal, and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian, mammal, and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 3B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 3B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Fish Species

Fuel, sediment, or other fluids or pollutants could be discharged into drainages that connect to the drainages occupied by the protected fish species, including the Santa Ana River, which is southeast of the City of Yorba Linda; the centerline of Segment J would be located within 0.25 mile of this feature. Pollutants entering drainages could result in death of the protected fish species. Sediments and other pollutants entering drainages could alter water quality, resulting in reduced fecundity and survivorship of the protected fish species.

Table 3.5-8: Biological Resources Potential Impacts for Study Area 3B

Potential Impact	Project Phase	Segment J
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, fish, invertebrates, and mammals; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	No Impact
	O&M	No Impact
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	Potential Impact: Conflict with allowable use or management of land
	O&M	Potential Impact: Conflict with allowable use or management of land

However, minimal to no impacts to this species are anticipated as it is an aquatic species and in-water work associated with the Study Area 3B segment is minimal or would not occur.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Invertebrate Species

Typical construction and O&M activities could have the potential to impact protected invertebrate species that may occur within construction areas. Impacts, as previously described in Study Area 2 Section 3.3.3.2 Impact Discussion in the Impacts to Protected Invertebrate Species subsection, would not differ within Study Area 3B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Segment J within Study Area 3B would not cross existing habitat that would likely be classified as a sensitive natural community within California. Therefore, construction and O&M activities would not have the potential to result in impacts to riparian habitat or other sensitive natural communities within construction areas.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 3B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities could impact the physical and biological features necessary to support USFWS-designated critical habitat for the coastal California gnatcatcher and San Bernardino kangaroo rat. A more detailed analysis, as well as consultation with USFWS, may be required to determine potential impacts to these critical habitats.

Construction and O&M activities may conflict with the terms and conditions of the OCTA NCCP/HCP or Western Riverside County Multiple Species NCCP/HCP. These plans are currently in the implementation stage, so additional research would be needed to determine potential conflicts with the plans.

3.5.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of

the pipeline installation and associated O&M. These measures are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 3B.

3.5.4 Cultural Resources and Tribal Cultural Resources

3.5.4.1 Existing Conditions

A total of 204 previously documented resources have been identified within the 0.25-mile buffer of Study Area 3B, as detailed in Table 3.5-9: Existing Cultural Resources in Study Area 3B. Of these resources, 51 are within a 200-foot-wide pipeline corridor (comprising 100 feet on either side of the segment centerline). The segment would cross through major cities such as Chino, Chino Hills, and Rialto, as well as I-10, SR-60, I-15, and I-210.

Table 3.5-9: Existing Cultural Resources in Study Area 3B

Segment	Relationship to Segment	Total Identified Resources
J	Within[105]	51
	0.25 mile	153

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 3B was not available. Until further information can be acquired, all of the 51 cultural resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.5.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segment J, if built, within Study Area 3B are summarized in Table 3.5-10: Cultural and Tribal Resources Potential Impacts. All known eligible and unevaluated resources within Study Area 3B were analyzed to determine if Segment J could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 3B that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary route for Segment J as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.5.4.3 Potential Avoidance and/or Minimization Measures.

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources

[105] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

subsection. Construction and O&M activities would have the potential for direct impacts to historical resources identified within Segment J.

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.4.3 Potential Avoidance and/or Minimization Measures.

Table 3.5-10: Cultural and Tribal Resources Potential Impacts for Study Area 3B

Potential Impact	Project Phase	Segment J
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for the segment in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Construction and O&M activities would have the potential for direct impacts to human remains for the segment in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Constructions and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during AB 52 consultation with tribes.

3.5.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where

available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.5.5 Energy

3.5.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within Los Angeles, Orange, Riverside, and San Bernardino counties that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 3B.

Existing Local Energy Use

Electricity

Within Study Area 3B, SCE is the primary provider of electricity (SCE 2023). Additional information about SCE's programs and RPS requirements is included in Study Area 1B Section 3.2.5.1 Existing Conditions in the Existing Local Energy Use subsection. In addition, the OCPA is also a provider of electricity. The OCPA was established under the CCA program in 2021; within Study Area 3B, OCPA serves the City of Buena Park (OCPA 2024). As detailed in Table 3.5-11: Electricity Consumption in 2022 for Counties Crossed by Study Area 3B, approximately 68, 20, 18, and 17 billion kWh of electricity were consumed in Los Angeles, Orange, Riverside, and San Bernardino counties in 2022, respectively.

Table 3.5-11: Electricity Consumption in 2022 for Counties Crossed by Study Area 3B

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	23,255.5	45,229.5	**68,485.0**
Orange County[106]	7,830.1	12,413.6	**20,243.7**
Riverside County	9,060.6	8,720.0	**17,780.6**
San Bernardino County	6,301.9	10,327.8	**16,629.6**

Source: CEC 2022a

OCPA receives electric power from a variety of sources, including renewables such as solar, wind, geothermal, hydropower, and biomass (OCPA 2024). In 2022, the City of

[106] The Orange County figures include data from all of Orange County, which factors in electricity also provided by OCPA. OCPA was established under the CCA program in 2021 (OCPA 2024).

Buena Vista opted to set their default tier for both residential and commercial customers to 100 percent renewable energy from OCPA (City of Buena Park 2022).

Natural Gas

Within Study Area 3B, SoCalGas provides natural gas service (SoCalGas 2024). As detailed in Table 3.5-12: Natural Gas Consumption in 2022 for Counties Crossed By Study Area 3B, approximately 3 billion and 572, 431, and 562 million therms[107] of natural gas were consumed in Los Angeles, Orange, Riverside, and San Bernardino counties in 2022, respectively.

Table 3.5-12: Natural Gas Consumption in 2022 for Counties Crossed By Study Area 3B

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	1,122.3	1,698.0	**2,820.3**
Orange County	351.7	220.8	**572.5**
Riverside County	284.1	146.9	**431.1**
San Bernardino County	267.3	294.8	**562.1**

Source: CEC 2022a

Diesel and Gasoline

Within Study Area 3B, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

As detailed in Table 3.5-13: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3B, approximately 3 billion gasoline fuel sales and 295 million diesel fuel sales were estimated in Los Angeles County; approximately one billion gasoline fuel sales and 66 million diesel fuel sales were estimated in Orange County; approximately 981 million gasoline fuel sales and 173 million diesel fuel sales were estimated in Riverside County; and approximately 915 million gasoline fuel sales and 258 million diesel fuel sales were estimated in San Bernardino County in 2022.

[107] One therm is equal to 100,000 Btu, or 100 kBtu.

Table 3.5-13: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3B

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Los Angeles County	3,070	295
Orange County	1,176	66
Riverside County	981	173
San Bernardino County	915	258

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Solar Resource Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other (CEC 2024). According to the Solar Resources dataset from the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, all of Study Area 3B overlaps the Los Angeles Metro Solar Resource Area.

Los Angeles County

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Los Angeles County subsection, sites identified for potential renewable energy generation are listed in the REMP (County of Los Angeles 2020). Segment J within Study Area 3B would not overlap any approved or in-progress PV solar-generation facilities within Los Angeles County (CEC 2023c).

Orange County

As discussed in Study Area 2 Section 3.3.5.1 Existing Conditions in the Existing Local Energy Use subsection, county-level regulations outlined in the Orange County General Plan provide detailed policies for energy efficiency and goals for managing energy resources. No separate renewable energy plan has been developed by Orange County (County of Orange 2015). Segment J within Study Area 3B would not overlap any

approved or in-progress PV solar-generation facilities within Orange County (CEC 2023c).

Riverside County

In 2014, the County of Riverside created the eRED (eligible renewable energy resource development) program funded by the CEC in order to "…coordinate and encourage…eRED…in the county at the General Plan level." As part of the eRED program, the County makes publicly available maps and analyses of renewable energy-related data. The eRED program is a multi-year collaborative effort between the County of Riverside and other agencies including, but not limited to, the DRECP contributing agencies, Salton Sea Authority, National Renewable Energy Laboratory, CEC, BLM, USFWS, and CDFW (County of Riverside 2024).

In addition to eRED, the County of Riverside's General Plan Land Use Element encourages the development of renewable energy resources and infrastructure. This includes the development of solar, wind, biomass and geothermal resources. Substantial updates to the General Plan are expected in early 2024 and throughout 2025 (County of Riverside 2021). Segment J within Study Area 3B would not overlap any approved or in-progress PV solar-generation facilities within Riverside County (CEC 2023c).

San Bernardino County

The County of San Bernardino's General Plan Renewable Energy and Conservation Element outlines strategies and policies for promoting renewable energy development while conserving natural resources and minimizing environmental impacts. The San Bernardino County Development Code lists renewable energy generation facilities under the transportation, communication and infrastructure land use designation within the Agricultural and Resource Management, Residential, Commercial, and Industrial Zoning Districts. No separate renewable energy plan has been developed for San Bernardino County (County of San Bernardino 2019). Segment J within Study Area 3B would not overlap any approved or in-progress PV solar-generation facilities within San Bernardino County (CEC 2023c).

3.5.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3B are summarized in Table 3.5-14: Study Area 3B Potential Energy Impacts.

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Table 3.5-14: Study Area 3B Potential Energy Impacts

Potential Impact	Project Phase	Segment J
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact
	O&M	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact
	O&M	No Impact

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.7.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.7.3 Potential Avoidance and/or Minimization Measures.

3.5.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.5.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts would be unlikely to result in significant environmental impacts or conflicts with a state or local plan for renewable energy and could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

3.5.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur in Study Area 3B.

3.5.6.1 Existing Conditions

Section 3.5.1 Study Area 3B Description provides a description of the segment, as well as the counties and cities through which the segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 3B are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2024) and DTSC's EnviroStor (DTSC 2024) online databases revealed approximately 41 open cases and 168 closed hazardous materials cases within 1,000 feet of Segment J. Open hazardous materials sites are detailed in Table 3.5-15: Open Hazardous Materials Sites within 1,000 feet of Study Area 3B.

Fire Hazards

The CAL FIRE FHSZs that would be crossed by the Study Area 3B segment are detailed in Table 3.5-16: Fire Hazard Severity Zones Crossed by Study Area 3B. Portions of Segment J would be located within a Very High and High, and Very High FHSZs within SRAs and LRAs, respectively. These areas are recognized by the Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency.

Schools and Day-Care Centers

Schools and day-care centers within 0.5 mile of Study Area 3B are presented in Table 3.5-17: Schools and Day-Care Centers within 0.5 Mile of Study Area 3B.

Airports

Three airports are located within two miles of Segment J. The Chino Airport, Fullerton Municipal Airport, and Rialto Municipal Airport are located approximately 1.2 miles, 1.7 miles, and 0.1 mile from Segment J, respectively. Segment J would be located within the Planning Boundary/Area of Influence designated for the Chino Airport and within designated safety zones designated for the Rialto Municipal Airport.

Table 3.5-15: Open Hazardous Materials Sites within 1,000 feet of Study Area 3B

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[108] (feet)	Media Affected	Regulatory Status
GeoTracker Sites				
Agromin Oc Ontario Green Materials Composting Operations	J	24	Not Specified	Open - Operating
United Pacific 0685	J	41	Not Specified	SWT-No Plan Returned[109]
Former Marvel Cleaners	J	51	Not Specified	Open - Site Assessment
Recycled Wood Products (Rwp), Ontario 4 (Iv)	J	57	Not Specified	Open - Operating
Circle Seal Controls	J	67	Aquifer used for drinking water supply	Open - Verification Monitoring
Ieua Carbon Canyon Wwrf	J	76	Not Specified	Active
Precision Anodizing & Plating Inc	J	83	Not Specified	Pending Review
City Of Placentia	J	143	Not Specified	SWT-No Plan Returned[109]

[108] Distances were calculated based on the approximate center point coordinates provided by GeoTracker and EnviroStor. Depending on the actual property boundaries of each hazardous materials site and/or facility, these sites may be closer than specified.

[109] SWTs are underground storage tanks. These tanks are required to be closed pursuant to Health and Safety Code Section 25292.05, which requires closure of these sites by December 31, 2025. Local permitting agencies (Certified Unified Program Agencies) or the SWRCB oversee compliance (SWRCB 2024). The SWTs are no longer updated in GeoTracker and their status should be checked in Cal EPA's California Environmental Reporting System during future environmental review (Cal EPA 2024).

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[108] (feet)	Media Affected	Regulatory Status
Calcomp Facility	J	187	Other Groundwater (uses other than drinking water)	Open - Remediation
Pbf Energy Atwood Terminal (Formerly Mobil)	J	190	Aquifer used for drinking water supply, Soil	Open - Verification Monitoring
Exxonmobil Atwood Terminal	J	192	Aquifer used for drinking water supply, Soil	Open - Site Assessment
Residual Recovery Group	J	208	Not Specified	Open - Active
West Energy Operating, LLC - Richfield Oil Field - Pxp Project No. 59800004	J	268	Not Specified	Received
Cielo Vista Project Site	J	271	Not Specified	Open - Remediation
California Institution For Men (Cim)- (Brine Pond)	J	281	Not Specified	Open - Closed/with Monitoring
American Lubrication Equipment Company	J	388	Not Specified	Pending Review
Redwood Products	J	500	Not Specified	Open - Operating
Andres Technical Plating	J	518	Not Specified	Pending Review
Orange County North Basin - Trent Tube Division	J	566	Indoor Air, Other Groundwater (uses other than drinking	Open - Site Assessment

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[108] (feet)	Media Affected	Regulatory Status
			water), Soil, Soil Vapor	
Orange County North Basin - A. C. Products, Inc.	J	566	Other Groundwater (uses other than drinking water)	Open - Remediation
Recycled Wood Products (Rwp) Ontario 2	J	576	Not Specified	Open - Operating
Chino Ave LLC	J	619	Soil	Open - Remediation
Orange County North Basin - Howmet Global Fastening Systems Inc. (Formerly Arconic, Alcoa, And Fairchild)	J	709	Aquifer used for drinking water supply, Soil	Open - Remediation
Toll Brothers Alta Vista (Tract 15700)	J	771	Not Specified	Open - Site Assessment
EnviroStor Sites				
Photomation Photo Lab	J	30	Not Specified	Inactive - Needs Evaluation
Cerritos Regional Park	J	139	Not Specified	Refer: Other Agency
Car Canyon Field Cont Ba	J	141	Not Specified	Inactive - Needs Evaluation
Precision Anodizing & Plating, Inc.	J	272	Under Investigation	Active
Placentia Avenue School Site	J	302	Not Specified	Inactive - Needs Evaluation

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[108] (feet)	Media Affected	Regulatory Status
La Palma Plaza	J	352	Other Groundwater (uses other than drinking water), Soil, Soil	Active
Placentia (Van Buren & Orangethorpe)	J	390	Soil	Active
Electra-Gear Div.	J	437	Soil	Active
Essex Group Incorporated	J	472	Not Specified	Refer: Other Agency
Murrietta Circuit Design	J	541	Not Specified	Inactive - Needs Evaluation
California Towel & Linen Supply Co.	J	558	Not Specified	Refer: RWQCB
Former S & S Polishing And Plating	J	661	Soil	Active
Hi Tech Solder	J	713	Not Specified	Inactive - Needs Evaluation
New Elementary School No. 29	J	982	Soil	Inactive - Withdrawn
Middle School No. 9	J	982	Not Specified	Inactive - Withdrawn
Elementary No. 30	J	982	No Media Affected	Inactive - Withdrawn
Stepan Chemical Company	J	993	Not Specified	Refer: RCRA

Sources: DTSC 2024 and SWRCB 2024

Table 3.5-16: Fire Hazard Severity Zones Crossed by Study Area 3B

FHSZ	Segment J (miles)
SRA	
Very High	1.1
LRA	
Non-Wildland/Non-Urban	5.5
Urban Unzoned	21.4
Moderate	2.8
High	3.2
Very High	3.8

Source: CAL FIRE 2024

Table 3.5-17: Schools and Day-Care Centers within 0.5 Mile of Study Area 3B

Segment	Schools	Day-Care Centers
J	78	76
Total	**78**	**76**

Source: U.S. Department of Homeland Security 2024

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segment J in Study Area 3B is managed by the following plans:

- County of Los Angeles OAEOP (County of Los Angeles 2023),
- 2020 County of Los Angeles AHMP (County of Los Angeles 2020),
- Orange County CEMP (County of Orange 2013),
- County of Orange and Orange County LHMP (County of Orange 2021),
- San Bernardino County EOP (County of San Bernardino 2019),
- 2022 San Bernardino County MJHMP (County of San Bernardino 2022),
- Riverside County EOP (County of Riverside 2019),
- County of Riverside Emergency Management Department (EMD) 2022-2025 Strategic Plan (County of Riverside 2022), and
- County of Riverside Multi-Jurisdictional Local HMP (MJLHMP) (County of Riverside 2023).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

3.5.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segment within Study Area 3B are summarized in Table 3.5-18: Study Area 3B Potential Impacts.

Table 3.5-18: Study Area 3B Potential Impacts

Potential Impact	Project Phase	Segment J
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact
	O&M	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact
	O&M	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	Potential Impact
	O&M	Potential Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	Potential Impact
	O&M	Potential Impact
Public Airport and/or Private Airstrip Hazards	Construction	Potential Impact
	O&M	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact
	O&M	Potential Impact
Wildland Fires	Construction	Potential Impact
	O&M	Potential Impact

Impacts are based on the preliminary routes of the segments as engineering for the pipeline has not occurred and the final alignment has not been determined. The potential for these impacts could increase or decrease depending on the final design.

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Based on the resources present in this study area, construction and O&M activities would have a potential to impact the public or the environment in the event of an

accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.6.3 Potential Avoidance and/or Minimization Measures.

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities would have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. However, most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Hazardous Substances in Close Proximity to Schools subsection. A total of 78 schools and 76 day-care centers are located within 0.5 mile of where Segment J would be located. Construction and O&M activities would have a potential for a hazardous emission or impacts resulting from handling hazardous materials within 0.5 mile of a school. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.6.3 Potential Avoidance and/or Minimization Measures.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Existing Hazardous Materials Sites Listed in Government Code Section 65962.5 subsection. Based on the 41 open cases identified within 1,000 feet Segment J within Study Area 3B, temporary or permanent impacts may occur due to existing subsurface contamination that may be present during construction or O&M. Construction and O&M activities would have a potential for existing hazardous materials sites to create a significant hazard to the public or the environment. However, most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Public Airport and/or Private Airstrip Hazards subsection. As previously discussed, Segment J would be located within the planning boundary/Area of Influence designated for the Chino Airport and within designated safety zones designated for the Rialto Municipal Airport.

Construction activities are unlikely, but have a potential to result in a safety hazard or excessive noise for the people residing or working in the portions of Segment J near the

Chino Airport and Rialto Municipal Airport. No impacts would be anticipated to result in safety hazards related to airports during O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.6.3 Potential Avoidance and/or Minimization Measures.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.5.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

Typical impacts and wildfire prevention practices that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Wildland Fires subsection. As previously discussed, CAL FIRE FHSZs would be crossed by Study Area 3B. Approximately 1.1 mile and 3.8 miles of Segment J would be located within a Very High FHSZ within an SRA and LRA, respectively. High heat or sparks from vehicles or equipment would have the potential to ignite dry vegetation and cause fires. However, most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.5.6.3 Potential Avoidance and/or Minimization Measures.

3.5.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B. The impacts that could be anticipated within Study Area 3B would not be expected to differ from those identified within Study Areas 1A and 1B.

3.5.7 Hydrology and Water Quality

3.5.7.1 Existing Conditions

Study Area 3B includes Segment J, which is located in RWRCB Los Angeles Region 4 and Santa Ana Region 8. Water resources in this area are also under the jurisdiction of CDFW South Coast Region 5 and Inland Deserts Region 6 and USACE Los Angeles District.

The following subsections discuss hydrological resource existing conditions in Study Area 3B; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for the pipeline segment within this study area.

Surface Waters

Study Area 3B area would cross four USGS watersheds (USGS 2023a). Segment J would cross the Chino Creek, Middle Santa Ana River, Lower Santa Ana River, and Lower San Gabriel River watersheds. Based on review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, the study area would cross five named waterbodies as listed in Table 3.5-19: Named Waterbodies Crossed by Study Area 3B, as well as 23 unnamed waterbodies. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- three artificial waterways,
- two canals/ditches, and
- 23 streams/rivers.

Table 3.5-19: Named Waterbodies Crossed by Study Area 3B

Waterbody Name	Segment Crossed	Waterbody Classification
Atwood Channel	J	Artificial Waterway
Carbon Creek	J	Stream/River
Chino Creek	J	Artificial Waterway
Coyote Creek	J	Artificial Waterway
Cucamonga Creek	J	Canal/Ditch

Source USGS 2023b

Impaired Surface Waters

As indicated by a review of the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2022a), two impaired water bodies would be crossed by Segment J, as listed in Table 3.5-20: Impaired Waterbodies Crossed by Study Area 3B. Details regarding the pollutants that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).The listings associated with these waterbodies specify that chemical oxygen demand, indicator bacteria, nutrients,

cadmium, copper, lead, and zinc toxicity are the pollutants causing a lack of attainment of water quality standards. The 2020-2022 Integrated Report identified agriculture, animal feeding operations (dairies), urban runoff/storm sewers, and unknown sources as the sources of pollutants.

Table 3.5-20: Impaired Waterbodies Crossed by Study Area 3B

Waterbody Name[110]	RWQCB Jurisdiction	Pollutant
Chino Creek Reach 1B (Mill Creek confluence to start of concrete lined channel)	Regional Board 8 – Santa Ana Region	Chemical Oxygen Demand, Indicator Bacteria, Nutrients
Cucamonga Creek Reach 1 (Valley Reach)	Regional Board 8 – Santa Ana Region	Cadmium, Copper, Lead, Zinc

Source: SWRCB 2022a

Floodplains

According to the FEMA Flood Hazard Layer (FEMA 2023), the study area would cross several floodplains, including the 500-year and 100-year-floodplains. Floodplains that would be crossed the segment within this Study Area are depicted in Attachment E: Hydrological Maps.

Groundwater

The study area would cross five groundwater basins (DWR 2022a). Segment J would cross the Upper Santa Ana Valley-Chino, Upper Santa Ana Valley-Riverside-Arlington, Upper Santa Ana Valey-Rialto Colton, Coastal Plain of Los Angeles – Central, and Coastal Plain of Orange County groundwater basins.

Publicly available data from the DWR (DWR 2022b) was reviewed to estimate depths to groundwater. Groundwater readings from 43 monitoring wells located within two miles of Segment J of the study area were reviewed, as listed in Table 3.5-21: Groundwater Readings within Two Miles of Study Area 3B. Groundwater levels within the study area are expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

[110] Waterbody names of impaired waterbodies are based on data from the SWRCB California 2020-2022 Integrated Report and may differ from waterbody names included in Table 3.5-19: Named Waterbodies Crossed by Study Area 3B, which are taken from USGS NHD data.

Table 3.5-21: Groundwater Readings within Two Miles of Study Area 3B

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
J	43	16.1	417.5

Source: DWR 2022b

3.5.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M Segment J are summarized in Table 3.5-22: Study Area 3B Potential Impacts.

Table 3.5-22: Study Area 3B Potential Impacts

Potential Impact	Project Phase	Segment J
Water Quality Degradation	Construction	Potential Impact
	O&M	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact
	O&M	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact
	O&M	Potential Impact

Surface Waters

As detailed in Section 3.5.7.1 Existing Conditions in the Surface Waters subsection, Study Area 3B would cross 28 mapped waterbodies, including five named and 23 unnamed waterbodies. Segment J would cross two impaired waterbodies as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the Segment J. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for segments that would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.5.7.3 Potential Avoidance and/or Minimization Measures.

Floodplains

Segment J would be installed within and across the floodplains that are detailed in Section 3.5.7.1 Existing Conditions in the Floodplains section. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross floodplains. Construction and O&M activities would not likely cause permanent impacts related to floodplains. Potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.5.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 3B, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area. Construction and O&M activities could cause temporary impacts to groundwater, but most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.5.7.3 Potential Avoidance and/or Minimization Measures.

3.5.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segment J. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 3B and could be implemented to avoid or reduce potential impacts to segments within this study area.

3.5.8 Land Use and Planning

3.5.8.1 Existing Conditions

Section 3.5.1 Study Area 3B Description contains a description of the Segment J. Table 3.5-1: Jurisdictions Crossed by Study Area 3B details the distance that Segment J would traverse each local jurisdiction within Study Area 3B.

Land Use

Most of Segment J would travel along paved public roads within urban areas, excluding the following areas:

- the I-605, SR-71, I-10, and SR-210 crossings;
- the Coyote Creek, Chino Creek, Cucamonga Creek, and Cajon Creek Wash crossings;
- within the Miller Basin Complex and Anaheim Lak;
- north of Yorba Linda Boulevard through a residential area, Chino Hills State Park, and an agricultural area;
- within Ruben S. Ayala Park;
- between South Archibald Avenue and East Riverside Drive through an open space area; and
- between the SR-60 crossing and Slover Avenue through an industrial area.

Surrounding land uses for most of the segment would include residential areas (generally medium-density or high-density) with mixed use, commercial, and industrial areas, as well as parks, interspersed throughout. Larger industrial areas would occur surrounding the segment in the Cities of Anaheim, Chino, Ontario, and Fontana.

General plan land use designations that would be crossed by Segment J within each jurisdiction within Study Area 3B are detailed in Table 3.5-23: General Plan Land Use Designations Crossed by Study Area 3B.[111]

Special Land Use Designations

As described in the following subsections and detailed in Table 3.5-24: Agency-Administered and Protected Lands Crossed by Study Area 3B, Table 3.5-25: Potential Infrastructure and Protected Trails Crossed by Study Area 3B, Table 3.4-23: Agency-Managed and Protected Lands Crossed by Study Area 3A, and Attachment F-1: Special Land Use Designations Maps, Segment J would cross lands administered by federal, state, and local agencies.

[111] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.5-23: General Plan Land Use Designations Crossed by Study Area 3B

Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[112] (acres)
City of Anaheim	High-Density Residential	N/A[113]	17.2
	Industrial	N/A[113]	8.4
	Low-Density Commercial	N/A[113]	16.1
	Medium-Density Residential	<0.1	30.6
	Mixed Use	N/A[113]	0.6
	Open Space and Public Lands	N/A[113]	2.3
	Other	<0.1	13.4
City of Buena Park	High-Density Residential	N/A[113]	2.5
	Low-Density Commercial	N/A[113]	2.7
	Medium-Density Residential	N/A[113]	8.7
	Mixed Use	N/A[113]	11.7
	Open Space and Public Lands	N/A[113]	1.3
City of Cerritos	High-Density Residential	N/A[113]	1.1
	Industrial	0.3	9.3
	Low-Density Commercial	N/A[113]	4.2
	Medium-Density Residential	N/A[113]	13.9
	Open Space and Public Lands	N/A[113]	1.9
	Other	N/A[113]	0.4
City of Chino	High-Density Residential	N/A[113]	6.0
	Industrial	0.1	10.8
	Low-Density Commercial	N/A[113]	0.2
	Medium-Density Residential	N/A[113]	5.6
	Mixed Use	0.1	1.6
	Open Space and Public Lands	1.0	31.6
	Agricultural	2.0	49.0

[112] The corridor includes 100 feet on either side of the pipeline.
[113] This is not applicable because the pipeline would not cross the land use designation.

Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[112] (acres)
City of Chino Hills	High-Density Residential	0.7	19.7
	Industrial	<0.1	2.4
	Low-Density Commercial	0.3	7.2
	Low-Density Residential	0.4	9.3
	Medium-Density Residential	N/A[113]	8.5
	Open Space and Public Lands	1.3	34.5
City of Eastvale	Industrial	0.5	12.6
	Low-Density Commercial	N/A[113]	0.1
	Other	<0.1	0.5
City of Fontana	Industrial	0.2	55.2
	Low-Density Commercial	N/A[113]	6.3
	Medium-Density Residential	N/A[113]	0.4
	Open Space and Public Lands	N/A[113]	0.7
City of Jurupa Valley	Industrial	0.1	6.6
	Open Space and Public Lands	N/A[113]	0.6
City of La Palma	High-Density Residential	N/A[113]	1.3
	Industrial	N/A[113]	0.1
	Low-Density Commercial	N/A[113]	4.7
	Medium-Density Residential	N/A[113]	11.8
City of Lakewood	Low-Density Commercial	N/A[113]	2.7
	Medium-Density Residential	N/A[113]	2.1
City of Ontario	High-Density Residential	<0.1	26.3
	Industrial	0.6	17.8
	Low-Density Commercial	N/A[113]	6.8
	Medium-Density Residential	N/A[113]	20.3
	Mixed Use	0.2	11.5
	Open Space and Public Lands	3.3	78.9
	Other	N/A[113]	0.4

Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[112] (acres)
City of Placentia	High-Density Residential	N/A[113]	4.7
	Industrial	N/A[113]	4.5
	Low-Density Commercial	N/A[113]	2.8
	Medium-Density Residential	N/A[113]	5.7
	Other	N/A[113]	8.3
City of Rialto	High-Density Commercial	N/A[113]	1.3
	High-Density Residential	N/A[113]	1.3
	Industrial	N/A[113]	6.9
	Low-Density Commercial	N/A[113]	13.3
	Medium-Density Residential	N/A[113]	28.7
	Open Space and Public Lands	N/A[113]	11.3
	Other	<0.1	0.1
	Planned Development	0.2	19.3
City of Yorba Linda	High-Density Residential	N/A[113]	2.2
	Low-Density Commercial	0.2	4.5
	Medium-Density Residential	1.0	46.0
	Open Space and Public Lands	0.4	8.9
County of Orange	High-Density residential	N/A[113]	<0.1
	Medium-Density residential	0.3	20.2
	Open Space and Public Lands	0.8	3.6
San Bernardino County	Industrial	N/A[113]	9.8
	Low-Density Commercial	N/A[113]	4.3
	Medium-Density Residential	N/A[113]	14.4

Source: California Governor's OPR 2024

Table 3.5-24: Agency-Administered and Protected Lands Crossed by Study Area 3B

Agency	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[114] (acres)
State			
California State Parks	Chino Hills State Park	1.9	45.9
Local			
Regional			
County of Los Angeles Department of Public Works	Coyote Creek Byway	N/A[115]	0.8
City			
City of Anaheim	John Marshall Park	N/A[115]	0.7
	La Palma Park	N/A[115]	1.6
City of Cerritos	Cerritos Sports Complex	N/A[115]	<0.1
	Gridley Park	N/A[115]	0.2
City of Chino Hills	Hickory Creek Nature Park	N/A[115]	0.7
City of Chino	Ruben S. Ayala Park	0.7	18.9
City of Ontario	Creekside Park	N/A[115]	0.3
	Open Space	N/A[115]	0.1
	Ranch Park	N/A[115]	1.2
City of Rialto	Jerry Eaves Park	N/A[115]	1.7
	Joe Sampson Park	N/A[115]	0.6
	Pacific Electric Trail	N/A[115]	0.2
	Roger Birdsall Park	N/A[115]	0.7
City of Yorba Linda	Shapell Park	N/A[115]	0.1

Source: GreenInfo Network 2023

[114] The corridor includes 100 feet on either side of the pipeline.
[115] This is not applicable because the pipeline would not cross the special land use.

Table 3.5-25: Potential Infrastructure and Protected Trails Crossed by Study Area 3B

Agency	Special Land Use	Number of Times Crossed
Federal		
NPS	Juan Bautista de Anza National Historic Trail	1
	Butterfield Overland National Historic Trail	1
State		
California HSRA	Los Angeles-to-San Diego Route	3
California HSRA	Los Angeles-to-Anaheim Section	1
Regional		
Orange County Water District	Anaheim Lake	1
Orange County Flood Control District	Miller Basin Complex	1

Sources: BLM 2023, California Department of Technology 2024

Section 3.5.3 Biological Resources contains a discussion of HCP/NCCP boundaries that the segment would cross within Study Area 3B. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Lands Administered by Federal Agencies

Segment J would cross the Butterfield Overland National Historic Trail along Del Monte Avenue within the City of Chino Hills. The National Trails office for Regions 6, 7, and 8 of the NPS administers the trail. The office does not manage any land but works with partners to help share and protect national historic trails (NPS 2023c).

Segment J would also cross the Juan Bautista de Anza National Historic Trail southeast of the intersection of E Riverside Drive and Clover Lane within the City of Ontario. The Anza Trail Administrative Office of the NPS administers the trail. The office does not manage any land but works with partners to help maintain, protect, and interpret the trail (NPS 2023b). The 1996 Comprehensive Management and Use Plan (NPS 1996) and the 2023 Foundation Document (NPS 2023a) inform administration and planning decisions for the trail.

Administration of national historic trails adheres to the policies listed in Director's Order #45 and Reference Manual 45 (NPS 2013, NPS 2019). The National Trails System Act of 1968, as amended, governs the activities of the National Trails System, which includes the Butterfield Overland National Historic Trail and the Juan Bautista de Anza National Historic Trail (16 U.S. Code [U.S.C.] § 1241 et seq.).

Lands Administered by State Agencies

Segment J would cross Chino Hills State Park, which is managed by the California State Parks. The Chino Hills State Park General Plan (California State Parks 1999) and Chino Hills State Park Road and Trail Management Plan (California State Parks 2020) inform the long-range development, management, and operation of the park.

Segment J would cross the following three alternatives for the Los Angeles-to-San Diego section of the California High-Speed Rail alignment:

- Corona Option, east of I-15 along Philadelphia Avenue in the City of Ontario;
- San Bernardino I-10 Option, within I-10 west of Cedar Avenue in the unincorporated community of Bloomington; and
- City of San Bernardino Option, south of W Rialto Avenue along S Cactus Avenue in the City of Rialto.

Segment J would also cross the preferred alternative for the Los Angeles-to-Anaheim section of the California High-Speed Rail alignment, east of the intersection of North Pauline Street and East La Palma Avenue in the City of Anaheim. The California HRSA is responsible for planning, designing, building, and operating the high-speed rail system.

Segment J would cross state highways managed by Caltrans.

Lands Administered by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segment J or the corridor would cross the following parks, open space, and trails:

- John Marshall Park and La Palma Park, which are managed by the City of Anaheim;
- Cerritos Sports Park and Gridley Park, which are managed by the City of Cerritos;
- Hickory Creek Nature Park, which is managed by the City of Chino Hills;
- Ruben S. Ayala Park, which is managed by the City of Chino;
- Creekside Park, Ranch Park, and open space between East Riverside Drive and SR-60, which are managed by the City of Ontario;
- Joe Sampson Park, Jerry Eaves Park, Roger Birdsall Park, and the Pacific Electric Trail,[116] which are managed by the City of Rialto;

[116] The trail is managed by a consortium of local jurisdictions, including the City of Claremont, City of Montclair, City of Upland, City of Rancho Cucamonga, City of

- Shapell Park, which is managed by the City of Yorba Lina; and
- Coyote Creek Bikeway, which is maintained by the Los Angeles County Department of Public Works.

Segment J also crosses Anaheim Lake, which is a recharge basin managed by Orange County Water District, and the Miller Basin Complex, which is flood retarding basin managed by the Orange County Flood Control District (Orange County Water District 2012).

3.5.8.2 Impact Discussion

In addition to the previously discussed impacts related to Study Area 3B, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segment to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.5-26: Land Use and Planning Potential Impacts of Study Area 3B.

Table 3.5-26: Land Use and Planning Potential Impacts of Study Area 3B

Potential Impact	Project Phase	Segment J
Divide a community	Construction	No Impact
	O&M	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact
	O&M	Potential Impact

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

Land Uses

Segment J could generally follow existing SoCalGas pipeline corridors and/or public roadways. New temporary or permanent access roads could be needed for the portion of the segment that traverses the Chino Hills. If needed, the permanent access road

Fontana, City of Rialto, and San Bernadino Associated Governments (City of Rancho Cucamonga 2000). This section of the trail falls within the City of Rialto.

footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

Segment J could primarily occur in urban areas and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

Segment J could cross the federally administered Juan Bautista de Anza National Historic Trail and the Butterfield Overland National Historic Trail within private property. The National Historic Trail designation has no effect on the rights of private landowners. Although temporary impacts from construction could occur, the pipeline would not be anticipated to permanently impact physical and historical qualities of the trail or interfere with the nature and purposes of the trail. In addition, O&M of the pipeline would not likely conflict with long-term management and use of the trail. Therefore, no conflicts with this trail would be anticipated.

State

The central portion of Segment J could cross Chino Hills State Park, which is an open space area that provides a critical link in the Puente-Chino Hills biological corridor and helps preserve local biodiversity (California State Parks 2018). Although most impacts would be temporary (excluding any permanent access roads), construction of the pipeline could conflict with this land use. An existing SoCalGas pipeline corridor occurs within the park in the vicinity of Segment J (overlapping briefly in some areas), but any new construction for the segment may not be an allowable use. Construction and O&M activities within the park would require a Right-of-Entry Permit and would need to be consistent with the Chino Hills State Park General Plan and Chino Hills State Park Road and Trail Management Plan.

Segment J could also cross state-managed linear infrastructure, including the state highways, three alternatives for the Los Angeles-to-San Diego section of the California High-Speed Rail alignment, and the preferred alternative for the Los Angeles-to-Anaheim section of the California High-Speed Rail alignment. Segment J could require an encroachment permit from Caltrans for these highway crossings. No environmental review documents or timelines have been publicly distributed for the Los Angeles-to-San Diego section of the alignment (HSRA 2024b). In addition, no current plans for construction of the Los Angeles-to-Anaheim section exist, but a Notice of Intent to prepare an EIS and a Notice of Preparation to prepare an EIR were published in 2020 and an alternatives analysis was published in 2023 (HSRA 2024a). Construction of the pipeline could conflict with implementation and construction of the alignment; however, it is unlikely the timing would overlap. Once constructed, crossing the alignment could require an encroachment permit from the California HSRA.

Local

Segment J could cross the locally-managed Anaheim Lake, which is managed by Orange County Water District, and the Miller Basin Complex, which is managed by the Orange County Flood Control District. Crossing these facilities could require an easement or license agreement with each district.

The segment could cross locally managed parks and/or open space areas, and although impacts would be temporary, construction of the pipeline could conflict with these land uses. As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters. Therefore, coordination with local agencies would be anticipated during future planning efforts.

Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, the segment would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a result of construction and O&M of the pipeline and corridor; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce potential land use conflicts are shown in Table 3.5-27: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 3B. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.5-27: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 3B

Potential Impact	Potential Avoidance and Minimization Measures
Potential land use conflict with Chino Hills State Park	The pipeline could be routed outside the limits of the park or within existing SoCalGas pipeline corridors, to the extent feasible.

3.6 STUDY AREA 3C

3.6.1 Study Area 3C Description

Study Area 3C includes Segments G and I, as depicted in Figure 3.6-1: Study Area 3C Overview Map. The segments would traverse approximately 71 miles of Los Angeles and San Bernardino counties and the cities of Adelanto, Palmdale, Rialto, San Bernardino, and Victorville. These segments are part of the Collection Zone, along with Segments B, D, E, J, K, L, M, and Y. Table 3.6-1: Jurisdictions Crossed by Study Area 3C details the distance in miles that the Study Area 3C segments would cross through each jurisdiction. The segments in this study area would generally connect from the City of Lancaster to the City of Victorville and then travel south through the mountains of the ANF to the City of Rialto.

3.6.1.1 Summary of Potential Impacts

Segments G and I within this study area are preliminary, and the actual routing, engineering, and design, and construction methods for each segment have not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, each segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of Segments G and I and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Figure 3.6-1: Study Area 3C Overview Map summarizes the potential impacts identified for the segments within Study Area 3C.

Table 3.6-1: Jurisdictions Crossed by Study Area 3C

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
G	40	City of Adelanto	3
		City of Palmdale	9
		Unincorporated Los Angeles County	19
		Unincorporated San Bernardino County	9
I	31	City of Adelanto	2
		City of Rialto	<1
		City of San Bernardino	2
		City of Victorville	1
		Unincorporated San Bernardino County	26

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

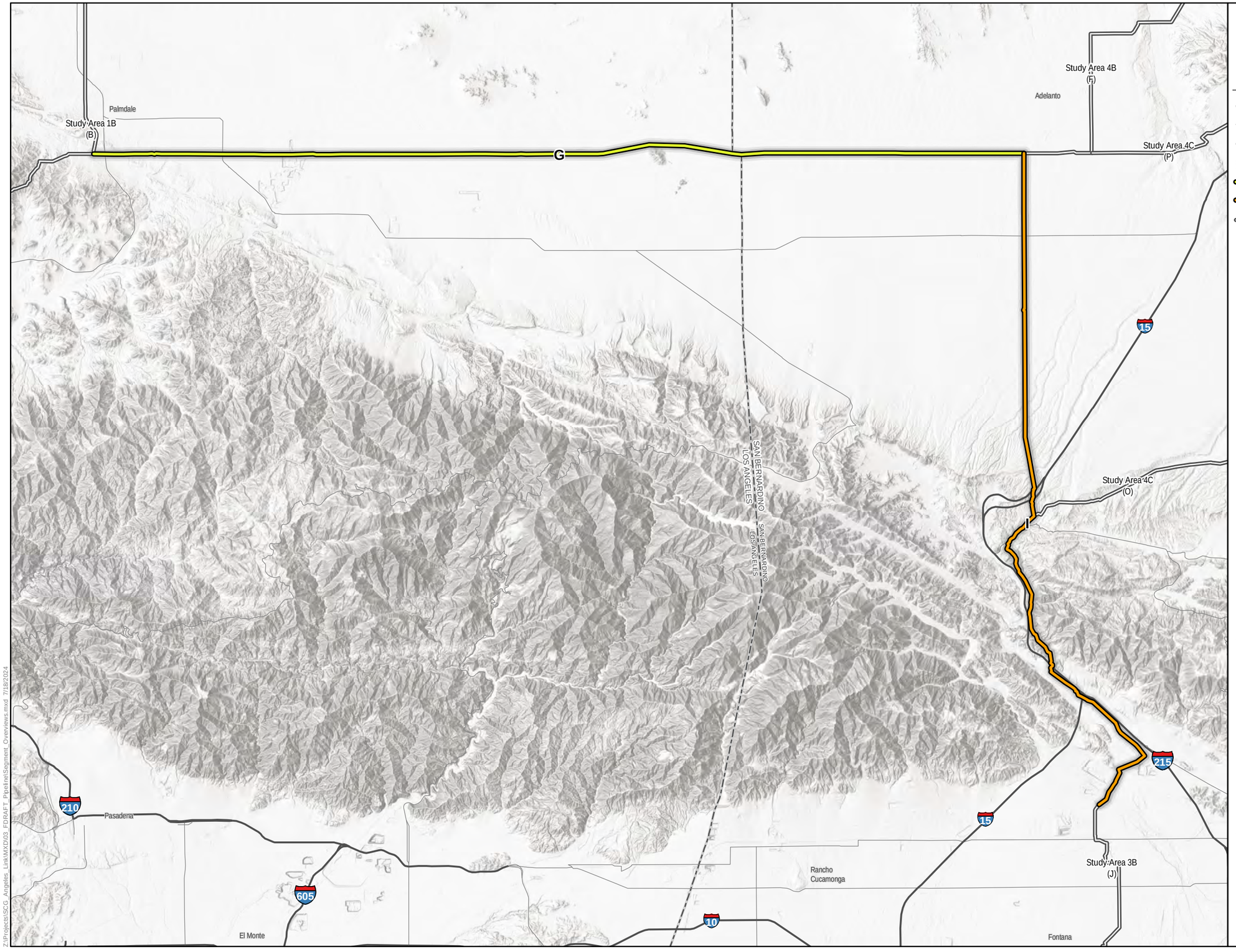


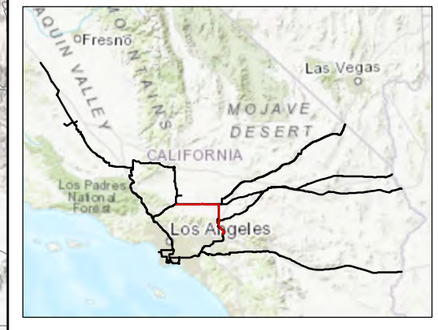
Figure 3.6-1: Study Area 3C Overview Map

Angeles Link Phase 1 Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- G
- I
- Adjacent/Other Study Area Visible



SoCalGas

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Table 3.6-2: Study Area 3C Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of all segments
Biological Resources	• Potential impacts to species and habitat during construction and O&M of all segments • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M of all segments • Potential impacts to wetlands during construction and O&M of all segments • Potential impacts to wildlife movement and migration corridors during construction and O&M of all segments • Potential to conflict with existing NCCPs/ HCPs and other conservation plans during construction and O&M of Segment I
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of all segments • Potential to change the significance of an archaeological resource during construction and O&M of all segments • Potential to disturb human remains during construction and O&M of all segments • Potential to change the significance of a TCR during construction and O&M of all segments
Energy	• Potential impacts to existing energy resources during construction of all segments • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of all segments
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of all segments • Potential for a foreseeable upset or accident conditions during construction and O&M of all segments • Potential impacts to schools in close proximity to pipeline construction and O&M of all segments • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for Segment G

Environmental Factor	Potential Impact
	• Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of all segments • Potential to contribute to wildland fires during construction and O&M of Segment I
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of all segments • Potential impacts to ground water quality and/or depletion during construction and O&M of all segments • Potential impacts to floodplains during construction and O&M for all segments
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M for all segments

3.6.2 Air Quality and Greenhouse Gas Emissions

3.6.2.1 Existing Conditions

Section 3.6.1 Study Area 3C Description provides a description of the segments and the cities and counties that would be crossed by Segments G and I. Study Area 3C is comprised of Segments G and I.

As depicted in Attachment A: Air Basins and Air Districts Maps, Segment G in this study area would be located in the MDAB with approximately 27 miles of Segment G in portions of the basin under the jurisdiction of the AVAQMD and approximately 12 miles in portions of the basin under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). Approximately 20 miles of Segment I would be located in the MDAB under the jurisdiction of the MDAQMD and 18 miles would be located in the SCAB under the jurisdiction of the SCAQMD.

The MDAB encompasses desert portions of southeastern California. The desert's proximity to the Los Angeles region, the San Bernardino Valley, and the prevailing southwest winds leave the basin subject to ground-level O_3 impacting ambient air. The area is also subject to relatively high levels of PM_{10} due to dust that is present in the desert landscape. The SCAB includes the entirety of Orange County as well as non-desert portions of Los Angeles County and San Bernardino County. The basin is bordered to the north by the San Bernardino Mountains, to the east by the San Jacinto Mountains, to the south by the Santa Margarita Mountains, and to the west by the Pacific Ocean During the summer months, it is common for a warm air mass to descend over the cool, moist marine layer. The warm upper layer caps the marine layer and prevents pollutants from dispersing upward. The SCAB has an arid climate and receives abundant sunshine and little rainfall. The local topography and climate result in a high potential for air pollution in the SCAB.

Attainment Status

Table 3.6-3: Study Area 3C Attainment Status details the current attainment status for the criteria air pollutants with the CAAQS and NAAQS for the districts within Study Area 3C.

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Air Quality

Antelope Valley Air Quality Management District

The AVAQMD's CEQA and Federal Conformity Guidelines provides direction on calculating the emissions and assessing the potential impacts from projects within the district (AVAQMD 2016). Table 3.6-4: AVAQMD and MDAQMD Criteria Air Pollutant Thresholds details the applicable annual and daily emissions thresholds for projects within the AVAQMD's jurisdiction. A multi-phased project (e.g., a project with separate construction and operational phases) with phases shorter than one year can be compared to the daily emission threshold while the guidelines state that others should use the annual threshold.

Mojave Desert Air Quality Management District

The MDAQMD's CEQA and Federal Conformity Guidelines provide direction on calculating the emissions and assessing the potential criteria air pollutants from projects within the district (MDAQMD 2020). Annual and daily emissions thresholds for projects within the MDAQMD's jurisdiction are equivalent to those within the AVAQMD's jurisdiction and are detailed in Table 3.6-4: AVAQMD and MDAQMD Criteria Air Pollutant Thresholds. A multi-phased project (e.g., a project with separate construction and operational phases) with phases shorter than one year can be compared to the daily emission threshold while the guidelines state that others should use the annual threshold.

Greenhouse Gases

Antelope Valley Air Quality Management District

The AVAQMD has established a daily CO_2e threshold of 548,000 pounds and an annual CO_2e threshold of 100,000 tons for GHG emissions.

Mojave Desert Air Quality Management District

The MDAQMD has established a daily CO_2e threshold of 548,000 pounds and an annual CO_2e threshold of 100,000 tons for GHG emissions.

3.6.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segments G and I, if built, within Study Area 3C are summarized in Table 3.6-5: Air Quality and Greenhouse Gas Emissions Potential Impacts.

Table 3.6-3: Study Area 3C Attainment Status

Criteria Air Pollutant	CAAQS	FAAQS
MDAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Nonattainment, Unclassified
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A
SCAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Nonattainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segments.
Source: CARB 2023

Table 3.6-4: AVAQMD and MDAQMD Criteria Air Pollutant Thresholds for Study Area 3C

Criteria Air Pollutant	Annual Emissions (Tons)	Daily Emissions (Pounds)
CO	100	548
NO_X	25	137
VOC	25	137
SO_X	25	137
PM_{10}	15	82
$PM_{2.5}$	12	65
H_2S	10	54
Lead	0.6	3

Sources: AVAQMD 2016, MDAQMD 2020

Table 3.6-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 3C

Potential Impact	Project Phase	Segment G	Segment I
Air Quality	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
GHGs	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact

Air Quality

As noted in Table 3.6-3: Study Area 3C Attainment Status, the segments associated with Study Area 3C would be in areas currently classified as nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the segments in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.6.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segments in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are summarized in Section 3.6.2.3 Potential Avoidance and/or Minimization Measures.

3.6.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 3C and all AMMs are also applicable to this study area.

3.6.3 Biological Resources

3.6.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segment G and the portion of I. Biological resources in Study Area 3C are under the jurisdiction of the CDFW and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 3C; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segments within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that 20 vegetation communities would be crossed by Study Area 3C segments. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Desert scrub, urban, mixed chaparral, Joshua tree, sagebrush, and desert wash habitats are the predominant habitats present within a 200-foot-wide corridor centered on each segment. The habitats and approximate area of each habitat that would be within each segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segments within Study Area 3C would cross existing desert riparian, Joshua tree, and lacustrine, habitats that would likely be classified as a sensitive natural communities within California. Segment G and I would be located within desert riparian habitat in the Big Rock Wash and the Cajon Wash, respectively. Segment G and I would be located within Joshua tree habitat in areas west of the city of Victorville and east of the city of Palmdale.

Segment I would be located within lacustrine habitat where the segment crosses the California Aqueduct. However, lacustrine habitat at this location would not be classified as a sensitive natural community because the feature is concrete-lined and non-vegetated.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segments in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment G would cross 29 potentially jurisdictional features and Segment I would cross 30 potentially jurisdictional features. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.6.7.1 Existing Conditions, wetland habitats may be present along these jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, two protected plant species and 11 protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segments G and/or I. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near a segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

As detailed in Table 3.6-6: Protected Plant Species Likely to Occur in Study Area 3C, two protected plant species would be likely to occur within portions of Segments G and/or I in this study area and/or within 0.25 mile of a segment centerline. Unless otherwise noted, the species were identified to have a CNDDB record within 0.25 mile of a segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Protected Wildlife

As detailed in Table 3.6-7: Protected Wildlife Species Likely to Occur in Study Area 3C, 11 protected wildlife species would be likely to occur within portions of Segments G and/or I and/or within 0.25 mile of a segment centerline. Unless otherwise denoted, the species were identified to have a CNDDB record within 0.25 mile of a segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Table 3.6-6: Protected Plant Species Likely to Occur in Study Area 3C

Segment	Species Common Name	Listing Status[117]	Approximate Percentage of:	
			Segment Length Crossed Where the Species is Likely to Occur	Buffer Area Where the Species is Likely to Occur [118]
G	Joshua tree[119]	SC	7.7	8.6
I	Joshua tree[119]	SC	5.3	5.0
	Santa Ana River woollystar	SE, FE	0.9	0.8

Sources: CDFW 2023d and CDFW 2023e

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), USFWS-designated critical habitat for the arroyo toad and San Bernardino kangaroo rat is present within the Cajon Wash, which flows south from the unincorporated community of Cajon Junction. Segment I would cross approximately 0.4 mile and 4.9 miles of USFWS-designated critical habitat for the arroyo toad and San Bernardino kangaroo rat, respectively.

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segments G and I would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 3C.

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segments G and I would not be located within any BLM-designated ACECs in Study Area 3C.

[117] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered

State listing codes:
- SE: State-listed as endangered
- SC: State Candidate for Listing

[118] The buffer includes 0.25 mile on either side of the segment centerline.

[119] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of the range of Joshua tree in California as interpreted by the CDFW (CDFW 2024).

Table 3.6-7: Protected Wildlife Species Likely to Occur in Study Area 3C

Segment	Species Common Name	Listing Status[120]	Approximate Percentage of:	
			Segment Length Crossed Where the Species is Likely to Occur	Buffer Area Where the Species is Likely to Occur [121]
Amphibians and Reptiles				
G	Arroyo toad[122]	FE	0.0	0.3
	California red-legged frog[122]	FT	4.4	4.4
	Desert tortoise	SE, FT	55.4	58.3
	Western pond turtle[122,123]	FPT	0.2	0.4
I	Arroyo toad[122]	FE	1.4	3.0
	California red-legged frog[122]	FT	0.9	4.7
	Desert tortoise[122]	SE, FT	29.28	27.1
	Western pond turtle[122,123]	FPT	0.9	4.7
	Western spadefoot[122]	FPT	0.4	3.0

[120] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered
- FPT: Federally proposed as threatened
- FT: Federally listed as threatened

State listing codes:
- SE: State-listed as endangered
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[121] The buffer includes 0.25 mile on either side of the segment centerline.

[122] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

[123] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

Segment	Species Common Name	Listing Status[120]	Approximate Percentage of:	
			Segment Length Crossed Where the Species is Likely to Occur	Buffer Area Where the Species is Likely to Occur [121]
Birds				
G	Golden eagle[122,124]	FP	6.4	6.4
	Swainson's hawk[122]	ST	23.0	23.3
	Tricolored blackbird[122]	ST	0.0	0.3
	White-tailed kite[122]	FP	25.2	24.5
I	Golden eagle[122,123]	FP	39.9	39.4
	White-tailed kite[122]	FP	17.8	18.1
Mammals				
I	San Bernardino kangaroo rat	SE, FE	18.0	19.4
	Stephens' kangaroo rat[122]	ST, FT	0.3	1.5

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

[124] For bald eagles and golden eagles, a one-mile buffer on either side of a segment centerline was used.

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segments G and I would not be located within the plan area of any NCCP or HCP in Study Area 3C. Furthermore, the centerline of Segment I would cross approximately 0.7 mile of a CDFW-managed land or conservation easement—the Cajon Creek Conservation Easement— within the Cajon Creek Wash. The centerline of Segment G would not be located within 0.25 mile of any CDFW-managed lands or conservation easements in Study Area 3C. The Special Land Use Designations subsection of Section 3.6.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segments G and I would not cross any waterbodies in Study Area 3C that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.6-8: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 3C. The areas with the highest connectivity ranks occur predominantly in Segment I where it would traverse mountainous terrain between the San Gabirel and San Bernardino Mountains, and in Segment G where it would traverse desert scrub to the north of the San Gabriel Mountains.

Table 3.6-8: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 3C

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
G	11.7	0	18.6	4.9	4.3
I	8.2	0	7.4	11.4	4.9

Source: CDFW 2019

3.6.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3C are summarized in Table 3.6-9: Biological Resources Potential Impacts for Study Area 3C.

Table 3.6-9: Biological Resources Potential Impacts for Study Area 3C

Potential Impact	Project Phase	Segment G	Segment I
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and plants; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, mammals, and plants; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation

Potential Impact	Project Phase	Segment G	Segment I
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	No Impact	Potential Impact: Conflict with allowable use or management of land
	O&M	No Impact	Potential Impact: Conflict with allowable use or management of land

Protected Species and Their Habitat

Impacts to Protected Amphibian, Mammal, and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian, mammal, and reptile species that may occur within construction areas. Impacts, as previously described Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 3C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 3C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Plant Species

Typical construction and O&M activities could have the potential to impact protected plant species that may occur within construction areas. Impacts, as previously described in Study Area 1B Section 3.2.3.2 Impact Discussion in the Impacts to Protected Plant Species subsection, would not differ within Study Area 3C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Construction and O&M activities would have the potential to result in impacts to riparian habitat or other sensitive natural communities, including desert riparian and Joshua tree habitats that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wetlands, Riparian Habitat, or Other Sensitive Natural Communities subsection, would not differ within Study Area 3C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.3.3 Potential Avoidance and/or Minimization Measures.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 3C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities could impact the physical and biological features necessary to support USFWS-designated critical habitat for the arroyo toad and San Bernardino kangaroo rat. A more detailed analysis, as well as consultation with USFWS, may be required to determine potential impacts to these critical habitats.

Construction and O&M activities would not conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans.

In addition, construction and O&M activities could conflict with the Cajon Creek Conservation Easement. However, consultation with the CDFW would be required to determine potential conflicts with this CDFW conservation easement.

3.6.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-11: Biological Resources Potential Avoidance and Minimization Measures in Study Area 1B. The impacts would not differ within Study Area 3C.

3.6.4 Cultural Resources and Tribal Cultural Resources

3.6.4.1 Existing Conditions

A total of 158 previously documented resources have been identified within the 0.25-mile buffer of Study Area 3C, as detailed in Table 3.6-10: Existing Cultural Resources in Study Area 3C. Of these resources, 42 are within a 200-foot-wide pipeline corridor (comprising 100 feet on either side of the segment centerline). The segment would be near major cities such as Palmdale and Victorville and it would run along I-15.

Table 3.6-10: Existing Cultural Resources in Study Area 3C

Segment	Relationship to Segment	Total Identified Resources
G	Within[125]	14
	0.25 mile	37
I	Within	28
	0.25 mile	79

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 3C was not available. Until further information can be acquired, all of the 42 cultural resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.6.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segment G and I, if built, within Study Area 3C are summarized in Table 3.6-11: Cultural and Tribal Resources Potential Impacts for Study Area 3C. All known eligible and unevaluated resources within Study Area 3C were analyzed to determine if Segments G and I could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 3C that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary routes for Segments G and I, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.6.4.3 Potential Avoidance and/or Minimization Measures.

[125] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

Table 3.6-11: Cultural and Tribal Resources Potential Impacts for Study Area 3C

Potential Impact	Project Phase	Segment G and I
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for all segments in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Constructions and O&M activities would have the potential for direct impacts to human remains for all segments in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Constructions and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during AB 52 consultation with tribes.

3.6.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.6.5 Energy

3.6.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within Los Angeles and San Bernardino counties that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 3C.

Existing Local Energy Use

Electricity

Within Study Area 3C, SCE is the primary provider of electricity (SCE 2023). Additional information about SCE's programs and RPS requirements is included in Study Area 1B Section 3.2.5.1 Existing Conditions in the Existing Local Energy Use subsection. As detailed in Table 3.6-12: Electricity Consumption in 2022 for Counties Crossed by Study Area 3C, approximately 68 and 17 billion kWh of electricity were consumed in Los Angeles and San Bernardino counties in 2022, respectively.

Table 3.6-12: Electricity Consumption in 2022 for Counties Crossed by Study Area 3C

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	23,255.5	45,229.5	**68,485.0**
San Bernardino County	6,301.9	10,327.8	**16,629.6**

Source: CEC 2022a

Natural Gas

Within Study Area 3C, SoCalGas provides natural gas service (SoCalGas 2024). As detailed in Table 3.6-13: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 3C, approximately 3 billion and 562 million therms[126] of natural gas were consumed in Los Angeles and San Bernardino counties in 2022, respectively.

Diesel and Gasoline

Within Study Area 3C, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

[126] One therm is equal to 100,000 Btu, or 100 kBtu.

Table 3.6-13: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 3C

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	1,122.3	1,698.0	**2,820.3**
San Bernardino County	267.3	294.8	**562.1**

Source: CEC 2022a

As detailed in Table 3.6-14: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3C, approximately 3 billion gasoline fuel sales and 295 million diesel fuel sales were estimated in Los Angeles County and approximately 915 million gasoline fuel sales and 258 million diesel fuel sales were estimated in San Bernardino County in 2022.

Table 3.6-14: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3C

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Los Angeles County	3,070	295
San Bernardino County	915	258

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Desert Renewable Energy Conservation Plan

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Desert Renewable Energy Conservation Plan subsection, the DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties (BLM 2016). Portions of Segments G and I would cross existing BLM-managed lands that are designated within the DRECP area, as depicted in Attachment C: Energy Resources Maps. More specifically, a majority of

Segment G and the northern half of Segment I are within private lands, and the middle of Segment G overlaps public land southwest of the unincorporated community of El Mirage within Los Angeles County. However, a majority of the segments within Study Area 3C follow existing SoCalGas pipeline corridors.

Solar Resource Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other (CEC 2024). According to the Solar Resources dataset from the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, Study Area 3C overlaps the Los Angeles Metro and Tehachapi Solar Resource Areas.

Los Angeles County

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Los Angeles County subsection, sites identified for potential renewable energy generation are listed in the REMP (County of Los Angeles 2020). Segments within Study Area 3C would not overlap any approved or in-progress PV solar-generation facilities within Los Angeles County (CEC 2023c).

San Bernardino County

As discussed in Study Area 3B Section 3.5.5.1 Existing Conditions in the San Bernardino County subsection, county-level regulations outlined in the County of San Bernardino General Plan provide strategies and policies for promoting renewable energy development. No separate renewable energy plan has been developed for San Bernardino County (County of San Bernardino 2019). Segments within Study Area 3C would not overlap any approved or in-progress PV solar-generation facilities within San Bernardino County (CEC 2023c).

3.6.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3C are summarized in Table 3.6-15: Study Area 3C Potential Energy Impacts.

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.5.3 Potential Avoidance and/or Minimization Measures.

Table 3.6-15: Study Area 3C Potential Energy Impacts

Potential Impact	Project Phase	Segment G	Segment I
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact	Potential Impact
	O&M	No Impact	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact	Potential Impact
	O&M	No Impact	No Impact

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection and the Study Area 1B Section 3.2.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Areas 1A and 1B and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.5.3 Potential Avoidance and/or Minimization Measures.

3.6.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.6.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

3.6.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 3C.

3.6.6.1 Existing Conditions

Section 3.6.1 Study Area 3C Description provides a description of each segment, as well as the counties and cities through which each segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 3C are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2024) and DTSC's EnviroStor (DTSC 2024) online databases revealed one open case and three closed hazardous materials cases within 1,000 feet of the segments in Study Area 3C. The open case is summarized in Table 3.6-16: Open Hazardous Materials Sites within 1,000 Feet of Study Area 3C.

Table 3.6-16: Open Hazardous Materials Sites within 1,000 Feet of Study Area 3C

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[127] (feet)	Media Affected	Regulatory Status
37120 47Th Street East USTs	G	250	Soil	Open - Assessment & Interim Remedial Action

Sources: DTSC 2024 and SWRCB 2024

Fire Hazards

The CAL FIRE FHSZs that would be crossed by the Study Area 3C segments are detailed in Table 3.6-17: Fire Hazard Severity Zones Crossed by Study Area 3C. These areas are recognized by the Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency. Some portions of Segment I would be located within High and Very High FHSZs within SRAs and LRAs, respectively.

[127] Distances were calculated based on the approximate center point coordinates provided by GeoTracker and EnviroStor. Depending on the actual property boundaries of each hazardous materials site and/or facility, these sites may be closer than specified.

Table 3.6-17: Fire Hazard Severity Zones Crossed by Study Area 3C

FHSZ	Segment G (miles)	Segment I (miles)
SRA		
Moderate	0.5	3.9
High	0.1	4.7
Very High	--	7.9
LRA		
Non-Wildland/Non-Urban	--	0.2
Moderate	11.9	5.5
Very High	--	2.1

Source: CAL FIRE 2024

Schools and Day-Care Centers

Schools and day-care centers within 0.5 mile of Study Area 3C are presented in Table 3.6-18: Schools and Day-Care Centers within 0.5 Mile of Study Area 3C.

Table 3.6-18: Schools and Day-Care Centers within 0.5 Mile of Study Area 3C

Segment	Schools	Day-Care Centers
G	16	5
I	3	1
Total	**19**	**6**

Source: U.S. Department of Homeland Security 2024

Airports

One airport is located within two miles of Segment I. The Rialto Municipal Airport is located approximately 1.7 miles from Segment I. Segment I would not be located within designated safety zones designated for the Rialto Municipal Airport.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segments G and I in Study Area 3C is managed by the following plans:

- County of Los Angeles OAEOP (County of Los Angeles 2023),
- 2020 County of Los Angeles AHMP (County of Los Angeles 2020),
- San Bernardino County EOP (County of San Bernardino 2019), and
- 2022 San Bernardino County MJHMP (County of San Bernardino 2022).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

3.6.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segments within Study Area 3C are summarized in Table 3.6-19: Study Area 3C Potential Impacts.

Table 3.6-19: Study Area 3C Potential Impacts

Potential Impact	Project Phase	Segment G	Segment I
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	Potential Impact	No Impact
	O&M	Potential Impact	No Impact
Public Airport and/or Private Airstrip Hazards	Construction	No Impact	No Impact
	O&M	No Impact	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Wildland Fires	Construction	No Impact	Potential Impact
	O&M	No Impact	Potential Impact

Impacts are based on the preliminary routes of the segments as engineering for the pipeline has not occurred and the final alignment route has not been determined. The potential for these impacts could increase or decrease depending on the final design.

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Based on the resources present in this study area, construction and O&M activities would be anticipated to have a potential for temporary or permanent impact to the public or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.6.3 Potential Avoidance and/or Minimization Measures.

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities would have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Hazardous Substances in Close Proximity to Schools subsection. A total of 19 schools and six day-care centers would be located within 0.5 mile of where Segments G and I would be located. Construction and O&M activities would have a potential for a hazardous emission or impacts resulting from handling hazardous materials within 0.5 mile of a school. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.6.3 Potential Avoidance and/or Minimization Measures.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Existing Hazardous Materials Sites Listed in Government Code Section 65962.5 subsection.

Based on the one open case identified within 1,000 feet of Segment G within Study Area 3C, temporary or permanent impacts may occur due to existing subsurface contamination that may be present during construction or O&M. Construction and O&M activities would have a potential for existing hazardous materials sites to create a significant hazard to the public or the environment. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

As previously discussed, Segment I would be located within two miles of the Rialto Municipal Airport, but the portion of Segment I would not be located within designated safety zones designated for that airport. Therefore, no safety concerns would be anticipated from construction or O&M activities.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.6.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

Typical impacts and wildfire prevention practices that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Wildland Fires subsection. As previously discussed, CAL FIRE FHSZs would be crossed by Study Area 3C. Approximately 7.9 miles and 2.1 miles of Segment I would be located within a Very High FHSZ within an SRA and LRA, respectively. High heat or sparks from vehicles or equipment would have the potential to ignite dry vegetation and cause fires. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.6.6.3 Potential Avoidance and/or Minimization Measures.

3.6.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B. The impacts that could be anticipated within Study Area 3C would not be expected to differ from those identified within Study Areas 1A and 1B.

3.6.7 Hydrology and Water Quality

3.6.7.1 Existing Conditions

Study Area 3C includes Segment I, which is located within Santa Ana RWQCB Region 8 and Lahontan Region 6 and CDFW Inland Desert Region 6; and Segment G, which is located in Lahontan RWQCB Region 6 and CDFW Inland Desert Region 6 and South Coast Region 5. Water resources in these areas are also under the jurisdiction of USACE Los Angeles District.

The following subsections discuss hydrological resource existing conditions in Study Area 3C; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for pipeline segments within this study area.

Surface Waters

The study area would cross 10 USGS watersheds (USGS 2023a). Segment G would cross the Big Rock Creek-Big Rock Wash, Lake Palmdale-Piute Ponds, Little Rock Wash, Mescal Creek-Rocky Buttes, Rock Creek-Buckhorn Lake, Rosamond Lake, Sheep Creek-El Mirage Lake, and Upper Fremont Wash watersheds. Segment I would cross the Upper Fremont Wash, Bell Mountain Wash-Mojave River, and Lytle Creek watersheds.

Based on the review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Segment G would cross five named and 24 unnamed waterbodies and Segment I would cross five named and 25 unnamed waterbodies. A list of all named waterbodies crossed by the Segment G and Segment I are included in Table 3.6-20: Named Waterbodies Crossed by Study Area 3C. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- two artificial waterways,
- six connectors between waterways,
- four pipelines, and
- 47 streams/rivers.

Impaired Surface Waters

The SWRCB California 2020-2022 Integrated Report Map (SWRCB 2022a) indicates that the study area does not cross any impaired waterbodies.

Floodplains

As indicated by a review of the FEMA Flood Hazard Layer (FEMA 2023), the study area would cross several floodplains, including the 500-year and 100-year-floodplains. Floodplains that would be crossed by the segments within this Study Area are depicted in Attachment E: Hydrological Maps.

Table 3.6-20: Named Waterbodies Crossed by Study Area 3C

Waterbody Name	Segment(s) Crossed	Waterbody Classification
Big Rock Wash	G	Artificial waterway
Fremont Wash	G	Stream/river
Little Rock Wash	G	Artificial waterway
Mescal Creek	G	Stream/river
Rock Creek	G	Artificial waterway
Cajon Wash	I	Stream/river
East Branch of the California Aqueduct	I	Artificial waterway
Lytle Creek Wash	I	Stream/river
Manzanita Wash	I	Stream/river
Oro Grande Wash	I	Stream/river

Source USGS 2023b

Groundwater

Study Area 3C would cross six groundwater basins (DWR 2022a). Segment I would cross the Upper Santa Ana Valley Rialto-Colton, Upper Santa Ana Valley-San Bernardino, Upper Santa Ana Valley-Cajon, and Upper Mojave River Valley groundwater basins. Segment G would cross the Upper Mojave River Valley, El Mirage Valley, and Antelope Valley groundwater basins. Publicly available data from the DWR (DWR 2022b) was reviewed to estimate existing depths to groundwater. Groundwater readings from seven monitoring wells located within two miles of the study area were reviewed, as listed in Table 3.6-21: Groundwater Readings within Two Miles of Study Area 3C. The 2023 groundwater-depth readings at these monitoring wells range from 49.3 feet bgs to 297.1 bgs.

3.6.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segments G and I are summarized in Table 3.6-22: Study Area 3C Potential Impacts.

Table 3.6-21: Groundwater Readings within Two Miles of Study Area 3C

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
G	1	N/A[128]	140.0
I	6	49.3	297.1

Source: DWR 2022b

Table 3.6-22: Study Area 3C Potential Impacts

Potential Impact	Project Phase	Segment G	Segment I
Water Quality Degradation	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact

Surface Waters

As detailed in the Section 3.6.7.1 Existing Conditions in the Surface Waters subsection, Study Area 3C would cross 59 mapped waterbodies, including five named waterbodies and 24 unnamed waterbodies that would be crossed by Segment I and five named waterbodies and 25 unnamed waterbodies that would be crossed by Segment G. No waterbodies that would be crossed by the segments are listed as impaired in the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for segments that would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.6.7.3 Potential Avoidance and/or Minimization Measures.

[128] Not applicable because only one reading was provided.

Floodplains

Segments G and I of the pipeline would be installed within and across the floodplains that are detailed in Section 3.6.7.1 Existing Conditions in the Floodplains section. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area that would cross floodplains. Construction and O&M activities likely not cause permanent impacts related to floodplains. Potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.6.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 3C, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.6.7.3 Potential Avoidance and/or Minimization Measures.

3.6.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segments G and I. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 3C and could be implemented to avoid or reduce potential impacts to segments within this study area.

3.6.8 Land Use and Planning

3.6.8.1 Existing Conditions

Section 3.6.1 Study Area 3C Description contains a description of each segment and Table 3.6-1: Jurisdictions Crossed by Study Area 3C details the distance the segments would traverse each local jurisdiction within Study Area 3C.

Land Use

The western portion of Segment G would travel along paved public roads surrounded by residential areas (mostly medium-density) with commercial areas and parks interspersed before continuing along an unpaved road through an industrial area and rural residential areas. The segment would deviate briefly from the unpaved road near Gray Butte Field through an agricultural area,[129] then continue along unpaved roads for the remainder of the segment through rural residential areas, open space/public land, and an industrial area.

Most of the northern half of Segment I would travel along unpaved roads and paved public roads surrounded mostly by rural residential areas (classified as medium-density residential) with some industrial, commercial, and planned development areas interspersed. The segment would briefly deviate from the paved road to cross the California Aqueduct in the unincorporated community of Baldy Mesa. The segment would cross a residential area and open space before entering the SBNF. Within the SBNF, the segment would travel roughly along unpaved roads as well as cross-county, crossing I-15 multiple times as well as SR-138. Once the segment would exit the SBNF, it would continue mostly along paved roads (deviating briefly to cross I-15 again) surrounded by residential, planned development, open space, and industrial areas. After crossing Cajon Creek Wash along a paved road, the segment would roughly follow an unpaved road through Lytle Creek Wash before terminating.

General plan land use designations that would be crossed by each segment and the corridor within each jurisdiction within Study Area 3C are detailed in Table 3.6-23: General Plan Designations Crossed by Study Area 3C.[130]

Special Land Use Designations

As described in the following subsections and detailed in Table 3.6-24: Agency-Managed and Protected Lands Crossed by Study Area 3C, Table 3.6-25: Linear Infrastructure and Protected Trails Crossed by Study Area 3C, and Attachment F-1: Special Land Use Designations Maps, Segments G and I would cross lands managed by federal, state, and local agencies and a private organization.

[129] The publicly available data layer shows this area as “low-density residential.”

[130] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.6-23: General Plan Designations Crossed by Study Area 3C

Segment	Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[131] (acres)
G	City of Adelanto	Industrial	1.0	21.4
		Medium-Density Residential	1.1	22.0
		Open Space and Public Lands	1.0	24.8
	City of Palmdale	High-Density Residential	N/A[132]	2.0
		Industrial	0.9	25.8
		Low-Density Commercial	<0.1	14.1
		Low-Density Residential	N/A[132]	2.0
		Medium-Density Residential	0.3	49.9
		Mixed Use	N/A[132]	3.1
		Open Space and Public Lands	N/A[132]	1.6
		Other	N/A[132]	2.8
	County of Los Angeles	Industrial	1.0	24.1
		Low-Density Commercial	N/A[132]	2.3
		Low-Density Residential	5.0	271.0
		Medium-Density Residential	<0.1	5.0
		Mixed Use	N/A[132]	0.3
		Open Space and Public Lands	0.1	1.6
		Other	N/A[132]	<0.1
	San Bernardino County	Low-Density Residential	N/A[132]	0.3
		Medium-Density Residential	8.5	208.4

[131] The corridor includes 100 feet on either side of the pipeline.
[132] This is not applicable because the pipeline would not cross the land use designation.

Segment	Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[131] (acres)
		Open Space and Public Lands	N/A[132]	0.2
I	City of Adelanto	Industrial	1.5	36.8
		Low-Density Commercial	N/A[132]	2.3
		Medium-Density Residential	N/A[132]	7.7
	City of Rialto	Planned Development	<0.1	0.8
	City of San Bernardino	Industrial	0.6	22.9
		Low-Density Commercial	<0.1	0.7
		Other	N/A[132]	<0.1
		Planned Development	N/A[132]	3.3
	City of Victorville	Low-Density Commercial	N/A[132]	7.9
		Medium-Density Residential	0.1	11.3
		Planned Development	N/A[132]	0.5
	San Bernardino County	Industrial	1.0	21.9
		Low-Density Commercial	0.1	8.3
		Medium-Density Residential	3.9	162.1
		Open Space and Public Lands	9.7	237.3
		Other	N/A[132]	1.6
		Planned Development	1.2	49.5

Source: California Governor's OPR 2024

Table 3.6-24: Agency-Managed and Protected Lands Crossed by Study Area 3C

Segment	Agency/Organization	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[133] (acres)
Federal				
G	BLM	BLM-Managed Land	0.1	4.8
I	USFS	SBNF	7.6	182.5
Regional				
G	Little Rock Creek Irrigation District (LRCID)	LRCID-Managed Land	0.1	1.3
City				
G	City of Palmdale	Palmdale Oasis Park	N/A[134]	1.2
	City of Palmdale	Palmenthol History Park	N/A[134]	0.3
	City of Palmdale	San Yellen Community Park	N/A[134]	2.4
	City of Palmdale	Planned Park	N/A[134]	0.9
Private Organization				
I	Vulcan Materials Company	Cajon Creek Conservation Bank	N/A[134]	9.6

Sources: CDFW 2023, GreenInfo Network 2023

[133] The corridor includes 100 feet on either side of the pipeline.
[134] This is not applicable because the pipeline would not cross the special land use.

Table 3.6-25: Linear Infrastructure and Protected Trails Crossed by Study Area 3C

Segment	Agency	Special Land Use	Number of Times Crossed
Federal			
I	BLM/NPS	Old Spanish National Historic Trail	5
	USFS	PCT	1
State			
G	California HSRA	Bakersfield-to-Palmdale Section	1
I	DWR	California Aqueduct	1

Sources: BLM 2023, California Department of Technology 2024, USGS 2023, USFS 2022b

Lands Managed by Federal Agencies

Segment G would cross land managed by the BLM east of the unincorporated community of Sun Village at the intersection of E Avenue South and Longview Road and east of Mescal Creek. As detailed in Attachment F-2: Management and Conservation Plans Map, BLM-managed land in this area is managed under the CDCA Plan (BLM 1980), as well as the West Mojave Plan and DRECP (BLM 2016), which are LUPAs to the CDCA Plan (BLM 2006).

Segment I would cross the Old Spanish National Historic Trail in five locations:

- south of the intersection of Phelan Road and Baldy Mesa Road on the border of the communities of Phelan and Oak Hills;
- between Whitehaven Street and Oro Grande Wash in the unincorporated community of Oak Hills;
- northwest of SR-138;
- south of Cajon Boulevard and I-15, north of the Cajon Wash; and
- within Lytle Creek Wash.

The trail is jointly managed by the BLM and NPS. The BLM's Utah State Director leads the BLM's co-administration effort and the National Trails office for Regions 6, 7, and 8 leads the NPS co-administration effort. The Old Spanish National Historic Trail Comprehensive Administrative Strategy outlines the operating procedures for planning, development, and administration of the trail (BLM and NPS 2017). Administration of national historic trails adheres to the policies listed in Director's Order #45, Reference Manual 45, and Manual 6250 (NPS 2013, NPS 2019; BLM 2012).

Segment I would cross a large section of the SBNF along the I-15 and SR-138 corridors. The SBNF is managed by the USFS under the SBNF Land Management Plan (LMP) (USFS 2006). Within this section of the SBNF, Segment I would also cross the PCT southeast of SR-138; the PCT is a National Scenic Trail administered by the USFS in partnership with other agencies and organizations (USFS 2023). The 1982 Pacific Crest National Scenic Trail Comprehensive Plan (USFS 1982) and the 2022 Foundation Document (USFS 2022a) inform management considerations, decisions, and planning efforts for the PCT.

The National Trails System Act of 1968, as amended, governs the activities of the National Trails System, which includes the Old Spanish National Historic Trail and PCT (16 U.S. Code [U.S.C.] § 1241 et seq.).

Lands Managed by State Agencies

Segment I would cross the California Aqueduct west of Baldy Mesa Road, north of the unincorporated community of Oak Hills. The aqueduct is managed by the DWR.

Segment G would cross the Bakersfield-to-Palmdale section of the California High-Speed Rail alignment within the intersection of E Avenue South and Sierra Highway in the City of Palmdale. The California HRSA is responsible for planning, designing, building, and operating the high-speed rail system.

Segments G and I would cross state highways managed by Caltrans.

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segment G would cross land managed by LRCID that is associated with the Little Rock Wash along E Avenue South, east of the City of Palmdale.

The Segment G corridor would cross the following existing parks managed by the City of Palmdale:

- Palmenthol History Park;
- Palmdale Oasis Park; and
- San Yellen Community Park.[135]

The Segment G corridor would also cross one planned park near E Avenue South and 70th Street E in the City of Palmdale.

[135] A portion of the park has yet to be developed.

Lands Managed by Private Organizations

The Segment I corridor would cross the Cajon Creek Conservation Bank along the Cajon Wash. The bank is managed by Vulcan Materials Company and is approved by the USFWS, USACE, and CDFW for mitigation credits associated with Riversidian Alluvial Fan Sage Scrub, various special-status species, and jurisdictional waters (Vulcan Materials Company 2023).

3.6.8.2 Impact Discussion

In addition to potential impacts specifically related to Study Area 3C, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segments to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.6-26: Land Use and Planning Potential Impacts for Study Area 3C.

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

Table 3.6-26: Land Use and Planning Potential Impacts for Study Area 3C

Potential Impact	Project Phase	Segment I	Segment G
Divide a community	Construction	No Impact	No Impact
	O&M	No Impact	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact

Land Uses

The segments could generally follow existing SoCalGas pipeline corridors, public roadways, or unpaved access roads. Some small sections of Segment I do not appear to have any existing access, so new temporary or permanent access roads could be needed in those areas. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

The segments could mostly occur in open space/public land or residential areas and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an

allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

Segment G could cross BLM-managed land along an existing SoCalGas pipeline corridor. Any work outside of existing easements on BLM-managed land would require a grant of land rights. In addition, within the CDCA Plan area, any new pipelines over 12 inches in diameter must be located within one of 16 designated utility planning corridors. Contingent corridors may also be used if a project cannot be sited within one of the designated corridors, but the exception would need to be processed through an amendment to the CDCA Plan (BLM 1980). The portion of Segment G that could cross BLM-managed land would not travel within one of the designated corridors; therefore, a CDCA Plan amendment would be required for the portion of the alignment on BLM-managed land. Further, within the DRECP area, the portion of Segment G that would cross BLM-managed land is designated as GPLs. Renewable energy-related activities are considered in GPLs with a plan amendment if they are consistent with the DRECP plan-wide CMAs, as well as specific CMAs for GPLs (BLM 2016).

Based on mapping within the SBNF LMP, Segment I could cross the SBNF within the USFS's Developed Area Interface (DAI), Back Country (BC), Back County Non-Motorized (BCNM), and Back County Motorized Use Restricted (BCMUR) designations. The DAI and BC designations allow renewable energy resources, and the BCMUR and BCNM allow renewable energy resources by exception. Coordination with the USFS could confirm whether the pipeline could be allowed by exception within the BCMUR and BCNM designations. The DAI, BC, and BCMUR designations allow major utility corridors in designated areas (i.e., the I-15 corridor, which is a designated utility corridor) (USFS 2006). Additionally, the portion of Segment I that would fall within the BCNM designation also would fall within an Inventoried Roadless Area that does not allow road construction or reconstruction (USFS 2006). Work outside of existing easements would require a grant of land rights.

Segment I could cross the federally administered Old Spanish National Historic Trail multiple times on public roads and private and federally managed land. Segment I could also cross the federally administered PCT on USFS-managed land. The National Historic Trail designation has no effect on the rights of private landowners. On federally managed land, easements or land rights may be granted to cross components of the national trails system (16 U.S.C. § 1248). Although temporary impacts from construction could occur, the pipeline would not be anticipated to permanently impact the scenic or historical qualities of these trails or interfere with the nature and purposes of these trails. In addition, O&M of the pipeline would not be anticipated to conflict with the long-term management and use of these trails. Therefore, no conflicts with these trails would be anticipated.

State

The segments could cross state-managed linear infrastructure, including the California Aqueduct, state highways, and the Bakersfield-to-Palmdale section of the California

High-Speed Rail alignment. The segments could require encroachment permits from the DWR and Caltrans for these crossings. No current plans for construction of the Bakersfield-to-Palmdale section exist, but a Final EIR/EIS was prepared for this portion of alignment (California HSRA 2021). Construction of the pipeline could conflict with implementation and construction of the alignment; however, it is unlikely the timing would overlap. Once constructed, crossing the alignment could require an encroachment permit from the California HSRA.

Local

Segment G could cross locally managed parks and land, and although most impacts would be temporary, construction of the pipeline could conflict with these land uses. As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters. Therefore, coordination with local agencies during future planning efforts would be anticipated.

Private Organizations

Segment I could cross a conservation bank managed by the Vulcan Materials Company. Conservation or mitigation banks are permanently protected land that is conserved and managed for its natural resource values. Although most impacts would be temporary, construction of the pipeline could conflict with this land use. Coordination with the Vulcan Materials Company could determine allowable activities within this area.

3.6.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, the segments would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a result of construction and O&M of the pipeline; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce potential land use conflicts are shown in Table 3.6-27: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 3C. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.6-27: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 3C

Potential Impact	Potential Avoidance and Minimization Measures
Land use conflicts with the CDCA Plan/DRECP	The pipeline could be routed outside of BLM-managed land, to the extent feasible, or CDCA Plan/DRECP amendments could be pursued.
Land use conflict with USFS BCMUR and BCNM designations	The pipeline could be routed outside of these designations, to the extent feasible, or coordination could occur with the USFS to determine if the pipeline could be an allowable exception within these designations.
Potential land use conflict with conservation bank	The pipeline could be routed outside of the conservation bank, to the extent feasible.

3.7 STUDY AREA 3D

3.7.1 Study Area 3D Description

Study Area 3D includes Segments E, L, and M of the Evaluated Segments, as depicted in Figure 3.7-1: Study Area 3D Overview Map. The segments would traverse approximately 92 miles of Los Angeles and Kern counties and the cities of Lancaster and Tehachapi. These segments are part of the Collection Zone, along with Segments B, D, G, I, J, K, and Y of the Evaluated Segments. Table 3.7-1: Jurisdictions Crossed by Study Area 3D details the distance in miles that the Study Area 3D segments would cross through each jurisdiction. The segments in this study area would generally connect from the City of Lancaster to the unincorporated community of Mojave and would then travel west through the Tehachapi Valley and Cummings Valley in the Tehachapi Mountains and continue west into the agricultural lands in the San Joaquin Valley.

Table 3.7-1: Jurisdictions Crossed by Study Area 3D

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
E	31	City of Lancaster	4
		Unincorporated Kern County	19
		Unincorporated Los Angeles County	8
L	10	Unincorporated Kern County	10
M	51	City of Tehachapi	<1
		Unincorporated Kern County	51

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

3.7.1.1 Summary of Potential Impacts

Segments E, L, and M within this study area are preliminary, and the actual routing, engineering, and design of the Evaluated Segments, and construction methods for each segment have not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, each segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of the segments and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.7-2: Study Area 3D Potential Impact Summary summarizes the potential impacts identified for the segments within Study Area 3D.

Figure 3.7-1: Study Area 3D Overview Map

Angeles Link Phase 1 Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- E
- L
- M
- Adjacent/Other Study Area Visible

Tehachapi

Study Area 4A (R)

Study Area 3E (K)

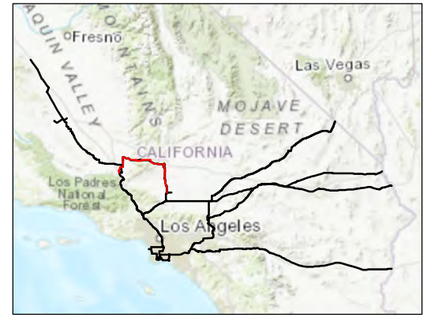
Study Area 1B (B)

Lancaster

KERN VENTURA

KERN LOS ANGELES

LOS ANGELES VENTURA



SoCalGas

INSIGNIA ENVIRONMENTAL

1:277,000

0 4.5 9 Miles

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Table 3.7-2: Study Area 3D Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of all segments
Biological Resources	• Potential impacts to species and habitat during construction and O&M of all segments • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M of all segments • Potential impacts to wetlands during construction and O&M of all segments • Potential impacts to wildlife movement and migration corridors during construction and O&M of all segments
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of all segments • Potential to change the significance of an archaeological resource during construction and O&M of all segments • Potential to disturb human remains during construction and O&M of all segments • Potential to change the significance of a TCR during construction and O&M of all segments
Energy	• Potential impacts to existing energy resources during construction of all segments • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of all segments
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of all segments • Potential for a foreseeable upset or accident conditions during construction and O&M of all segments • Potential impacts to schools in close proximity to pipeline construction and O&M of Segments E and M • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for Segment E • Potential impacts to public airports and/or private airstrips during construction of Segments E and M

Environmental Factor	Potential Impact
	• Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of all segment • Potential to contribute to wildland fires during construction and O&M of Segment M
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of all segments • Potential impacts to ground water quality and/or depletion during construction and O&M of all segments • Potential impacts to floodplains during construction and O&M of all segments
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M of Segments E and M

3.7.2 Air Quality and Greenhouse Gas Emissions

3.7.2.1 Existing Conditions

Section 3.7.1 Study Area 3D Description provides a description of the segments and the cities and counties that would be crossed by Segments E, L, and M. Study Area 3D is comprised of Segments E, L, and M.

As depicted in Attachment A: Air Basins and Air Districts Maps, Segment L would be located in the San Joaquin Valley Air Basin under the jurisdiction of the SJVAPCD. Approximately 14 miles of Segment M would be located in the San Joaquin Valley Air Basin under the jurisdiction of the SJVAPCD and 35 miles would be located in the MDAB under the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD). Segment E would be located entirely in the MDAB with approximately 19 miles under the jurisdiction of the EKAPCD and 11 miles under the jurisdiction of the AVAQMD.

The air basins crossed by this study area have different ground topographies and climate conditions. The San Joaquin Valley is bordered on the west by the Coastal Ranges; on the south by the San Emigdio Mountains, Tehachapi Mountains, and San Gabriel Mountains; on the east by the Sierra Nevada; and on the north by the Sacramento-San Joaquin River Delta and the Sacramento Valley. The topography of the surrounding mountain ranges creates a sheltered valley that tends to trap stable air and air pollutants. The MDAB encompasses desert portions of southeastern California. The desert's proximity to the Los Angeles region, the San Bernardino Valley, and the prevailing southwest winds leave the basin subject to ground-level O_3 impacting ambient air. The area is also subject to relatively high levels of PM_{10} due to dust that is present in the desert landscape.

Attainment Status

Table 3.7-3: Study Area 3D Attainment Status summarizes the current attainment status for the criteria air pollutants with the CAAQS and NAAQS for the districts within Study Area 3D.

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Table 3.7-3: Study Area 3D Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
MDAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Attainment	Unclassified/attainment
PM_{10}	Nonattainment	Unclassified/Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
H_2S	Unclassified/Nonattainment	N/A
Visibility-Reducing Particles	Unclassified	N/A
San Joaquin Valley Air Basin		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
CO	Unclassified/Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segments.
Source: CARB 2023

Air Quality

Antelope Valley Air Quality Management District

The AVAQMD's CEQA and Federal Conformity Guidelines provides direction on calculating the emissions and assessing the potential impacts from projects within the district (AVAQMD 2016). Table 3.7-4: AVAQMD Criteria Air Pollutant Thresholds for Study Area 3D details the applicable annual and daily emissions thresholds for projects within the AVAQMD's jurisdiction. A multi-phased project (e.g., a project with separate construction and operational phases) with phases shorter than one year can be compared to the daily emission threshold while the guidelines state that others should use the annual threshold.

Table 3.7-4: AVAQMD Criteria Air Pollutant Thresholds for Study Area 3D

Criteria Air Pollutant	Annual Emissions (Tons)	Daily Emissions (Pounds)
CO	100	548
NO_X	25	137
VOC	25	137
SO_X	25	137
PM_{10}	15	82
$PM_{2.5}$	12	65
H_2S	10	54
Lead	0.6	3

Sources: AVAQMD 2016, MDAQMD 2020

Eastern Kern Air Pollution Control District

The EKAPCD Guidelines for Implementation of CEQA (EKAPCD 1999) provides air quality significance thresholds for operation of a project but does not include any thresholds for the construction phase of a project. As a result, these operational threshold values were used in the absence of construction significance thresholds. Table 3.7-5: EKAPCD Criteria Air Pollutant Thresholds details the applicable annual emissions thresholds for projects within the EKAPCD's jurisdiction.

San Joaquin Valley Air Pollution Control District

The SJVAPCD's Guidance for Addressing and Mitigating Air Quality Impacts provides guidance on how to evaluate a project's potential to impact air quality, including methods for calculating anticipated criteria air pollutant emissions from the construction and O&M phases of a project (SJVAPCD 2015). Table 3.7-6: SJVAPCD Criteria Air Pollutant Significance Thresholds lists the applicable criteria air pollutant significance thresholds from the SJVAPCD that may apply to the Project.

Table 3.7-5: EKAPCD Criteria Air Pollutant Thresholds for Study Area 3D

Criteria Air Pollutant	Annual Emissions (Tons)
CO	None Identified
NO_X	25
VOC	25
SO_X	27
PM_{10}	15
$PM_{2.5}$	None Identified
H_2S	None Identified
Lead	None Identified

Source: EKAPCD 20222b

Table 3.7-6: SJVAPCD Criteria Air Pollutant Significance Thresholds for Study Area 3D

Criteria Air Pollutant	Annual Construction Emissions Thresholds (Tons)	Annual Operational Emissions Thresholds (Tons)	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
CO	100	100	100
NO_X	10	10	10
ROG	10	10	10
SO_X	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: SJVAPCD 2015

Greenhouse Gases

Antelope Valley Air Quality Management District

The AVAQMD has established a daily CO_2e threshold of 548,000 pounds and a CO_2e threshold of 100,000 tons per year for GHG emissions.

Eastern Kern Air Pollution Control District

The EKAPCD Addendum to CEQA Guidelines Addressing GHG Emission Impacts for Stationary Source Projects When Serving as Lead CEQA Agency (EKAPCD 2012) establishes the process for evaluating stationary source GHG emission impacts for the purposes of CEQA. This document concludes that projects that emit less than 25,000 tons per year of GHGs would be determined to have a less-than-significant individual or cumulatively considerable impact on GHG emissions.

San Joaquin Valley Air Pollution Control District

In 2009, the SJVAPCD adopted its Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009a) and its policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009b).

These documents provide a framework for evaluating a project's potential impacts associated with GHG emissions. In this guidance, the SJVAPCD concludes that no one project could generate enough GHG emissions to noticeably change the global climate temperature; therefore, it does not establish a numeric threshold for GHG emissions.

Consistent with CPUC precedent (CPUC 2020a, CPUC 2020b), in the absence of an established numerical threshold from the SJVAPCD, projects may adopt the South Coast Air Quality Management District's (SCAQMD's) recommended approach for construction emissions by amortizing the construction emissions over a 30-year project lifetime and then comparing those emissions to the significance threshold of 10,000 metric tons CO_2e per year.

3.7.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segments E, L, and M, if built, within Study Area 3D are summarized in Table 3.7-7: Air Quality and Greenhouse Gas Emissions Potential Impacts.

Air Quality

As noted in Table 3.7-3: Study Area 3D Attainment Status, the segments associated with Study Area 3D would be in areas currently classified as nonattainment for O_3, $PM_{2.5}$, PM_{10}, and H_2S. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the segments in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection.

Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.7.2.3 Potential Avoidance and/or Minimization Measures.

Table 3.7-7: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 3D

Potential Impact	Project Phase	Segment E	Segment L	Segment M
Air Quality	Construction	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact
GHGs	Construction	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segments in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are summarized in Section 3.7.2.3 Potential Avoidance and/or Minimization Measures.

3.7.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 3D and all AMMs are also applicable to this study area.

3.7.3 Biological Resources

3.7.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segments E, L, and M. Biological resources in Study Area 3D are under the jurisdiction of the CDFW and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 3D; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segments within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that 25 vegetation communities would be present within Study Area 3D segments. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Annual grassland, deciduous orchard, evergreen orchard, vineyard, irrigated row and field crops, desert scrub, urban, and alkali desert scrub habitats are the predominant habitats present within a 200-foot-wide corridor centered on each segment. The habitats and approximate area of each habitat that would be within each segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segments within Study Area 3D would cross existing lacustrine, riverine, montane riparian, valley foothill riparian, desert riparian, and Joshua tree habitats that would likely be classified as sensitive natural communities within California. Segment E and Segment M would be within Joshua tree habitat near the unincorporated community of Mojave.

Segment L would cross existing lacustrine, riverine habitat where the segment would cross the California Aqueduct and the Arvin Edison Canal. However, lacustrine, riverine habitat at this location would not be classified as a sensitive natural community because the feature is concrete-lined and not vegetated. Lastly, Segment L would cross existing valley foothill riparian habitat where the segment would cross an unnamed drainage near Comanche Creek.

Segment M would cross existing desert riparian and valley foothill riparian habitat where the segment would cross multiple unnamed drainages on the slopes of the Tehachapi

Mountains. Segment M would cross existing lacustrine habitat where the segment crosses a human made pond. However, lacustrine habitat at this location would not be classified as a sensitive natural community because the feature is non-vegetated. Segment M would cross existing montane riparian habitat where the segment would cross an unnamed drainage near Cummings Creek.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segments in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment E would cross 29 potentially jurisdictional features; Segment L would cross 6 potentially jurisdictional features; and Segment M would cross 52 potentially jurisdictional features. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.7.7.1 Existing Conditions, wetland habitats may be present along these jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, three protected plant species and 14 protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segments E, L, and/or M. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near a segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

As detailed in Table 3.7-8: Protected Plant Species Likely to Occur in Study Area 3D, three protected plant species would be likely to occur within portions of Segments E and/or M in this study area and/or within 0.25 mile of a segment centerline. Unless otherwise noted, the species were identified to have a CNDDB record within 0.25 mile of a segment centerline (CDFW 2023d). A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near the segment centerline. A larger area was queried since Project-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Table 3.7-8: Protected Plant Species Likely to Occur in Study Area 3D

Segment	Species Common Name	Listing Status[136]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [137]
E	Joshua tree[138]	SC	1.1	1.0
M	Bakersfield cactus	SE, FE	0.1	0.2
	Joshua tree[138]	SC	4.0	3.7
	Kern mallow[138]	FE	0.0	0.1

Sources: CDFW 2023d and CDFW 2023e

Protected Wildlife

As detailed in Table 3.7-9: Protected Wildlife Species Likely to Occur in Study Area 3D, 14 protected wildlife species would be likely to occur within portions of Segments E, L, and/or M, and/or within 0.25 mile of a segment centerline. Unless otherwise denoted, the species were identified to have a CNDDB record within 0.25 mile of a segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), Segment L would be located within USFWS-designated critical habitat for the California condor and would cross approximately 3.5 miles of critical habitat near the unincorporated community of Grapevine.

[136] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered

State listing codes:
- SE: State-listed as endangered
- SC: State Candidate for Listing

[137] The buffer includes 0.25 mile on either side of the segment centerline.

[138] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of the range of Joshua tree in California as interpreted by the CDFW (CDFW 2024).

Table 3.7-9: Protected Wildlife Species Likely to Occur in Study Area 3D

Segment	Species Common Name	Listing Status[139]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [140]
Amphibians and Reptiles				
E	California red-legged frog[141]	FT	1.6	4.4
	Desert tortoise[141]	SE, FT	36.7	34.0
L	Blunt-nosed leopard lizard	SE, FE, FP	15.6	15.8
	Western pond turtle[141,142]	FPT	7.8	3.1
	Western spadefoot[141]	FPT	7.8	3.1
M	Blunt-nosed leopard lizard[141]	SE, FE, FP	5.2	4.9
	Desert tortoise[141]	SE, FT	15.3	14.5
	Southern rubber boa	ST	35.0	34.3
	Western pond turtle[141,142]	FPT	50.6	52.9

[139] Explanation of listing status codes:

Federal listing codes:
- FDR: Federally Delisted (Recovered)
- FE: Federally listed as endangered
- FPT: Federally proposed as threatened
- FT: Federally listed as threatened

State listing codes:
- SE: State-listed as endangered
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[140] The buffer includes 0.25 mile on either side of the segment centerline.

[141] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

[142] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

Segment	Species Common Name	Listing Status[139]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [140]
	Western spadefoot[141]	FPT	6.4	7.0
Birds				
E	Golden eagle[141,143]	FP	3.2	3.9
	Swainson's hawk	ST	31.5	33.4
	White-tailed kite[141]	FP	28.4	28.9
L	Bald eagle[143]	SE, FDR, FP	18.5	16.7
	California condor[141]	SE, FE, FP	33.9	34.9
	Golden eagle[141, 143]	FP	1.1	2.8
	Swainson's hawk[141]	ST	1.7	3.5
	White-tailed kite[141]	FP	13.9	24.6
M	Golden eagle[141, 143]	FP	57.8	60.3
	Swainson's hawk[141]	ST	23.6	23.6
	White-tailed kite[141]	FP	11.8	14.9
Mammals				
L	Giant kangaroo rat[141]	SE, FE	1.1	2.8
	Nelson's antelope squirrel[141]	ST	1.1	2.8
	San Joaquin kit fox[141]	ST, FE	1.1	2.9
M	Nelson's antelope squirrel[141]	ST	0.3	0.1
	San Joaquin kit fox[141]	ST, FE	5.5	5.4

Sources: CDFW 2023d,CDFW 2023e, and CDFW 2023f

[143] For bald eagles and golden eagles, a one-mile buffer on either side of a segment centerline was used.

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segments E, L, and M would not be located within NOAA-Fisheries-designated critical habitat for any species in Study Area 3D.

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segments E, L, and M would not be located within any BLM-designated ACECs in Study Area 3D.

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segments E, L, and M would not be located within the plan area of any NCCP/HCP.

Furthermore, the centerline of Segments E, L, and M would not be located within 0.25 mile of any CDFW-managed lands or conservation easements in Study Area 3D. The Special Land Use Designations subsection of Section 3.7.8.1 Existing Conditions provides additional information on special land use designations provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segments E, L, and M would not cross any waterbodies in Study Area 3D that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.7-10: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity.

Table 3.7-10: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity for Study Area 3D

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
E	16.7	0	13.8	0	0
L	5.2	0	2.0	3.2	0
M	14.0	0	16.5	12.4	8.2

Source: CDFW 2019

The areas with the highest connectivity ranks would occur predominantly within Segment M where the segment would traverse hilly terrain to the northwest of the Tehachapi Mountains.

3.7.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3D are summarized in Table 3.7-11: Biological Resources Potential Impacts.

Protected Species and Their Habitat

Impacts to Protected Amphibian, Mammal, and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian, mammal, and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 3D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 3D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Plant Species

Typical construction and O&M activities could have the potential to impact protected plant species that may occur within construction areas. Impacts, as previously described in Study Area 1B Section 3.2.3.2 Impact Discussion in the Impacts to Protected Plant Species subsection, would not differ within Study Area 3D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.3.3 Potential Avoidance and/or Minimization Measures.

Table 3.7-11: Biological Resources Potential Impacts for Study Area 3D

Potential Impact	Project Phase	Segment E	Segment L	Segment M
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and plants; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and mammals; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, mammals, and plants; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation
Direct or indirect impacts to state or federally protected	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust;	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust;	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater

Potential Impact	Project Phase	Segment E	Segment L	Segment M
wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)		stormwater runoff; erosion or sedimentation	stormwater runoff; erosion or sedimentation	runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, stat, or federal conservation plans	Construction	No Impact	No Impact	No Impact
	O&M	No Impact	No Impact	No Impact

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Construction and O&M activities could have the potential to result in impacts to riparian habitat or other sensitive natural communities, including montane riparian, valley foothill riparian, desert riparian, and Joshua tree habitats that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wetlands, Riparian Habitat, or Other Sensitive Natural Communities subsection, would not differ within Study Area 3D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.3.3 Potential Avoidance and/or Minimization Measures.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 3D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities could impact the physical and biological features necessary to support USFWS-designated critical habitat for the California condor. A more detailed analysis, as well as consultation with USFWS, may be required to determine potential impacts to this critical habitat.

Construction and O&M activities would not conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans.

3.7.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These AMMs are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-11: Biological Resources Potential Avoidance and Minimization Measures in Study Area 1B. The impacts would not differ within Study Area 3D.

3.7.4 Cultural Resources and Tribal Cultural Resources

3.7.4.1 Existing Conditions

A total of 399 previously documented resources have been identified within the 0.25-mile buffer of Study Area 3D, as detailed in Table 3.7-12: Existing Cultural Resources in Study Area 3D. Of these resources, 98 are within a 200-foot-wide pipeline corridor (comprising 100 feet on either side of the segment centerline).

Table 3.7-12: Existing Cultural Resources in Study Area 3D

Segment	Relationship to Segment	Total Identified Resources
E	Within[144]	35
	0.25 mile	125
L	Within	10
	0.25 mile	13
M	Within	53
	0.25 mile	163

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 3D was not available. Until further information can be acquired, all of the 98 cultural resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.7.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segments E, L, and M, if built, within Study Area 3D are summarized in Table 3.7-13: Cultural and Tribal Resources Potential Impacts for Study Area 3D. All known eligible and unevaluated resources within Study Area 3D were analyzed to determine if Segments E, L, and M could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 3D that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary routes for Segments E, L, and M, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.7.4.3 Potential Avoidance and/or Minimization Measures.

[144] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

Table 3.7-13: Cultural and Tribal Resources Potential Impacts for Study Area 3D

Potential Impact	Project Phase	Segments E, L, and M
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources subsection. Construction and O&M activities would have the potential for direct impacts to historical resources identified within the segments in this study area.

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.4.3 Potential Avoidance and/or Minimization Measures.

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for all segments in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Constructions and O&M activities would have the potential for direct impacts to human remains for all segments in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Constructions and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during Assembly Bill 52 consultation with tribes.

3.7.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.7.5 Energy

3.7.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within Kern and Los Angeles counties that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 3D.

Existing Local Energy Use

Electricity

Within Study Area 3D, PG&E and SCE are the primary providers of electricity (PG&E 2014a and SCE 2023). Additional information about PG&E and SCE's programs and RPS requirements is included in Study Area 1A Section 3.1.5.1 Existing Conditions in the Existing Local Energy Use subsection and Study Area 1B Section 3.2.5.1 Existing Conditions in the Existing Local Energy Use subsection.

As detailed in Table 3.7-14: Electricity Consumption in 2022 for Counties Crossed by Study Area 3D, approximately 15 and 68 billion kWh of electricity were consumed in Kern and Los Angeles counties in 2022, respectively.

Table 3.7-14: Electricity Consumption in 2022 for Counties Crossed by Study Area 3D

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Kern County	2,764.8	1,2096.1	**14,860.9**
Los Angeles County	23,255.5	45,229.5	**68,485.0**

Source: CEC 2022a

Natural Gas

Within Study Area 3D, PG&E and SoCalGas provide natural gas service (PG&E 2014b and SoCalGas 2024). As detailed in Table 3.7-15: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 3D, approximately two and three billion therms[145] of natural gas were consumed in Kern and Los Angeles counties in 2022, respectively.

Diesel and Gasoline

Within Study Area 3D, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is

[145] One therm is equal to 100,000 Btu, or 100 kBtu.

detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

Table 3.7-15: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 3D

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Kern County	99.1	1,674.4	**1,773.6**
Los Angeles County	1,122.3	1,698.0	**2,820.3**

Source: CEC 2022a

As detailed in Table 3.7-16: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3D, approximately 3 billion gasoline fuel sales and 295 million diesel fuel sales were estimated in Los Angeles County and approximately 395 million gasoline fuel sales and 226 million diesel fuel sales were estimated in Kern County in 2022.

Table 3.7-16: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3D

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Kern County	395	226
Los Angeles County	3,070	295

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Desert Renewable Energy Conservation Plan

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Desert Renewable Energy Conservation Plan subsection, the DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside,

San Bernardino, and San Diego counties (BLM 2016). Portions of Segments E and M would cross existing BLM-managed lands that are designated within the DRECP areas, as depicted in Attachment C: Energy Resources Maps. More specifically, a majority of Segment E and the eastern half of Segment M are within private land. In addition, the middle of Segment M overlaps Conservation Areas in the City of Tehachapi within Kern County. Segment M also overlaps the PCT Special Recreation Management Area. Lastly, Segment E overlaps DFAs west of the unincorporated community of Fleta. However, a majority of Segment E within Study Area 3D follows existing SoCalGas pipeline corridors.

Wind Resource Areas

Wind energy is fourth-largest source of electricity in the U.S., following natural gas, coal, and nuclear energy. In California, wind energy projects exist from the northern end of Shasta County in Northern California to the southern end of Imperial County in Southern California. While wind turbines and their facilities exist throughout the state, the majority of wind turbines exist in the following six regions: "…Altamont, East San Diego County, Pacheco, Solano, San Gorgonio, and Tehachapi" (CEC 2024a). Wind resource areas were created by the CEC to group wind electric generating facilities into polygons, based on their proximity to each other (i.e., within 15 miles). These wind resource areas were created based on facilities with a minimum capacity of two MW, although other facilities less than two MW may exist within these resource areas. According to the Wind Resources Dataset from the CEC (CEC 2023c) and as depicted in Attachment C: Energy Resources Maps, Segments E and M within Study Area 3D overlap the Tehachapi Wind Resource Area (CEC 2023c).

Solar Resources Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other (CEC 2024b). According to the Solar Resources dataset from the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, Segments E, L, and M within Study Area 3D overlap the Tehachapi and South Central Valley Solar Resource Areas.

Los Angeles County

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Los Angeles County subsection, sites identified for potential renewable energy generation are listed in the REMP (County of Los Angeles 2020). Segments within Study Area 3D would not overlap any approved or in-progress PV solar-generation facilities within Los Angeles County (CEC 2023d).

Kern County

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Kern County subsection, Kern County provides a list and associated map of the current approved, in-progress, and upcoming wind and solar energy projects within the county (Kern County

Planning and Natural Resources Department 2013). No separate renewable energy plan has been developed for Kern County. As depicted in Attachment C: Energy Resources Maps, Segment E would cross one approved or in-progress PV solar facility or project site in Kern County. Segments L and M would avoid these PV solar facilities (CEC 2023d).

3.7.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3D are summarized in Table 3.7-17: Study Area 3D Potential Energy Impacts.

Table 3.7-17: Study Area 3D Potential Energy Impacts

Potential Impact	Project Phase	Segment E	Segment L	Segment M
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact	Potential Impact	Potential Impact
	O&M	No Impact	No Impact	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact	Potential Impact	Potential Impact
	O&M	No Impact	No Impact	No Impact

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.5.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection and the Study Area 1B Section 3.2.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Areas 1A and 1B, with the with the exception of wind resource areas discussed in Section 3.7.5.1 Existing Conditions in the Wind Resource Areas subsection, and would include short-term construction impacts.

The wind resource area crossed by this study area is expansive and incorporates a large amount of land used for wind turbine facilities in Kern County. The siting and construction of the hydrogen pipeline system may conflict with or obstruct some existing (e.g., existing wind turbine facilities) or planned renewable energy projects in this study area and may conflict with local land uses or zoning identified in Kern County; however, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link.

Typical O&M would require periodic inspections, equipment testing, and repairs of the pipeline and would be anticipated to be less than construction impacts because the pipeline would be located underground, with the exception of some appurtenances. Therefore, O&M activities would likely not conflict with or obstruct any existing or planned future renewable energy and decarbonization goals.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.5.3 Potential Avoidance and/or Minimization Measures.

3.7.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.7.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts could be reduced by the implementation of AMMs previously detailed in Table 3.1 18: Energy Potential Avoidance and Minimization Measures in Study Area 1A. The impacts would not differ within Study Area 3D with the exception of the AMMs detailed in Table 3.7-18: Energy Potential Avoidance and Minimization Measures in Study Area 3D.

Table 3.7-18: Energy Potential Avoidance and Minimization Measures in Study Area 3D

Potential Impact	Potential Avoidance and Minimization Measures
Conflict with state or local plan for renewable energy or energy efficiency	• Pipeline segments could be sited outside of wind resource areas.

3.7.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 3D.

3.7.6.1 Existing Conditions

Section 3.7.1 Study Area 3D Description provides a description of each segment, as well as the counties and cities through which each segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 3D are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed approximately five open cases and 50 closed hazardous materials cases within 1,000 feet of the segments in Study Area 3D. Open hazardous materials sites are detailed in Table 3.7-19: Open Hazardous Materials Sites Within 1,000 Feet of Study Area 3D.

Table 3.7-19: Open Hazardous Materials Sites Within 1,000 Feet of Study Area 3D

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[146] (feet)	Media Affected	Regulatory Status
GeoTracker Sites				
Oasis Travel Stop	E	208	Not Specified	Open - Site Assessment
Former Mobil Mini Mart	E	129	Other Groundwater (uses other than drinking water)	Open - Assessment & Interim Remedial Action
EnviroStor Sites				
Pacific Auto Recycling Center Inc	E	591	Soil, Under Evaluation	Active
S R Kilby Property	E	850	Soil, Soil	Active

[146] Distances were calculated based on the approximate center point coordinates provided by GeoTracker and EnviroStor. Depending on the actual property boundaries of each hazardous materials site and/or facility, these sites may be closer than specified.

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[146] (feet)	Media Affected	Regulatory Status
Jones Auto Repair	E	154	Not Specified	Refer: Other Agency[147]

Sources: DTSC 2024 and SWRCB 2024

Fire Hazards

The CAL FIRE FHSZs that would be crossed by the Study Area 3D segment are detailed in Table 3.7-20: Fire Hazard Severity Zones Crossed by Study Area 3D. Study Area 3D would be located within SRAs and LRAs. These areas are recognized by the Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency. Segment M would be located within Very High and High FHSZs within SRAs and LRAs, respectively.

Table 3.7-20: Fire Hazard Severity Zones Crossed by Study Area 3D

FHSZ	Segment E (miles)	Segment L (miles)	Segment M (miles)
SRA			
Moderate	--	2.0	12.0
High	--	--	23.4
Very High	--	--	1.0
LRA			
Non-Wildland/Non-Urban	--	8.1	9.2
Urban Unzoned	2.2	0.4	0.7
Moderate	16.9	--	3.8
High	--	--	1.0

Source: CAL FIRE 2024

Schools and Day-Care Centers

Schools and day-care centers within 0.5 mile of Study Area 3D are presented in Table 3.7-21: Schools and Day-Care Centers within 0.5 Mile of Study Area 3D.

[147] Sites with a “Refer” in their status are being managed by other agencies besides those more directly related to GeoTracker and EnviroStor.

Table 3.7-21: Schools and Day-Care Centers within 0.5 Mile of Study Area 3D

Segment	Schools	Day-Care Centers
E	12	12
L	0	0
M	0	1
Total	**12**	**13**

Source: U.S. Department of Homeland Security 2024

Airports

Three airports are located within two miles of Segments E and M. The Mojave Airport is located less than 0.2 mile east of Segments E and M. The Tehachapi Municipal Airport is located approximately 1.5 miles north of Segment M. The Rosamund Skypark Airport is located approximately 1.7 miles west of Segment E. Segment M is located within the Planning Boundary/Area of Influence designated for the Mountain Valley Airport and Mojave Airport. Segment E is located within the Planning Boundary/Area of Influence designated for the Mojave Airport.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segments E, L, and M in Study Area 3D is managed by the following plans:

- County of Los Angeles OAEOP (County of Los Angeles 2023),
- 2020 County of Los Angeles AHMP (County of Los Angeles 2020),
- Kern County EOP (County of Kern 2022), and
- Kern MJHMP (County of Kern 2020).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

3.7.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segments within Study Area 3D are summarized in Table 3.7-22: Study Area 3D Potential Impacts.

Impacts are based on the preliminary routes of the segments as engineering for the pipeline has not occurred and the final alignment route has not been determined. The potential for these impacts could increase or decrease depending on the final design.

Table 3.7-22: Study Area 3D Potential Impacts

Potential Impact	Project Phase	Segment E	Segment L	Segment M
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	Potential Impact	No Impact	Potential Impact
	O&M	Potential Impact	No Impact	Potential Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	Potential Impact	No Impact	No Impact
	O&M	Potential Impact	No Impact	No Impact
Public Airport and/or Private Airstrip Hazards	Construction	Potential Impact	No Impact	Potential Impact
	O&M	No Impact	No Impact	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact
Wildland Fires	Construction	No Impact	No Impact	Potential Impact
	O&M	No Impact	No Impact	Potential Impact

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Based on the resources present in this study area, construction and O&M activities would have a potential for temporary or permanent impact to the public or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.6.3 Potential Avoidance and/or Minimization Measures.

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities would have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Hazardous Substances in Close Proximity to Schools subsection. A total of 12 schools and 13 day-care centers are located within 0.5 mile of where Segments E and M would be located. Construction and O&M activities would have a potential for a hazardous emission or impacts resulting from handling hazardous materials within 0.5 mile of a school. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.6.3 Potential Avoidance and/or Minimization Measures.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Existing Hazardous Materials Sites Listed in Government Code Section 65962.5 subsection.

Based on the five open cases identified within 1,000 feet of Segment E within Study Area 3D, temporary or permanent impacts may occur due to existing subsurface contamination that may be present during construction or O&M. Construction and O&M activities would have a potential for existing hazardous materials sites to create a significant hazard to the public or the environment. Most of the potential impacts could

be reduced through the implementation of the AMMs detailed in Section 3.7.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Public Airport and/or Private Airstrip Hazards subsection.

As previously discussed, Segment M is located within the Planning Boundary/Area of Influence designated for the Mountain Valley Airport and Mojave Airport, and Segment E is located within the Planning Boundary/Area of Influence designated for the Mojave Airport.

Construction activities are unlikely, but have a potential to result in a safety hazard or excessive noise for the people residing or working in the portions of Segments E and M near the Mojave Airport and Mountain Valley Airports. No impacts would be anticipated to result in safety hazards related to airports during O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.6.3 Potential Avoidance and/or Minimization Measures.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.7.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

Typical impacts and wildfire prevention practices that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Wildland Fires subsection. As previously discussed, approximately 1.0 mile of Segment M would be located within the CAL FIRE Very High FHSZ within an SRA and LRA. High heat or sparks from vehicles or equipment would have the potential to ignite dry vegetation and cause fires. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.6.3 Potential Avoidance and/or Minimization Measures.

3.7.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization

Measures for Study Area 1B. The impacts that could be anticipated within Study Area 3D would not be expected to differ from those identified within Study Areas 1A and 1B.

3.7.7 Hydrology and Water Quality

3.7.7.1 Existing Conditions

Segment L is located in Central Valley RWQCB Region 5, CDFW Central Region 5, and USACE Sacramento District. Segment M is located within Central Valley RWQCB Region 5 and Lahontan Region 6, CDFW Central Region 5, and USACE Sacramento District and Los Angeles District. Segment E is located within Lahontan RWQCB Region 6, CDFW Central Region 4 and South Coast Region 5, and USACE Los Angeles District.

The following subsections discuss hydrological resource existing conditions in Study Area 3D; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for pipeline segments within this study area.

Surface Waters

The study area crosses 15 USGS watersheds (USGS 2023a). Segment E would cross the Amargosa Creek, Bissell Hills, Cottonwood Creek-Tylerhorse Canyon, Rosamond Lake, and Tropico Hill-Oak Creek watersheds. Segment L would cross the El Paso Creek, Grapevine Creek, and Liveoak Canyon-Pastoria Creek watersheds. Segment M would cross the Bissell Hills, Caparell Creek-Frontal Kern Lake Bed, Lake Paulina-Comanche Creek, Tehachapi Creek, Tejon Creek, Tropico Hill-Oak Creek, and Upper Cache Creek watersheds

Based on the review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Segment E would cross one named waterbody and 28 unnamed waterbodies; Segment L would cross three named waterbodies and three unnamed waterbodies; and Segment M would cross five named waterbodies and 47 unnamed waterbodies.

A list of all named waterbodies crossed by the study area are included in Table 3.7-23: Named Waterbodies Crossed by Study Area 3D. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- one artificial waterway,
- 17 pipelines, and
- 69 streams/rivers.

Impaired Surface Waters

As indicated by a review of the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2022a), one impaired water body would be crossed by Segment L, as listed in Table 3.7-24: Impaired Waterbodies Crossed by Study Area 3D. Details regarding the pollutants that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b). The listing associated with the waterbody specifies that pH is the pollutant causing a lack of attainment of water quality

standards for certain waterbodies within the study area and does not identify a source of the pollutant.

Table 3.7-23: Named Waterbodies Crossed by Study Area 3D

Waterbody Name	Segment(s) Crossed	Waterbody Classification
El Paso Creek	L	Stream/river
California Aqueduct	L	Artificial waterway
Grapevine Creek	L	Stream/river
Brite Creek	M	Stream/river
Chanac Creek	M	Stream/river
Comanche Creek	M	Stream/river
Cummings	M	Stream/river
Tejon Creek	M	Stream/river
Amargosa Creek	E	Stream/river

Source: USGS 2023b

Table 3.7-24: Impaired Waterbodies Crossed by Study Area 3D

Waterbody Name[148]	RWQCB Jurisdiction	Pollutant
California Aqueduct (Panoche Creek to Grapevine)	Regional Board 5 - Central Valley Region	pH

Source: SWRCB 2022a

Floodplains

The FEMA Flood Hazard Layer (FEMA 2023) shows the study area would cross several floodplains, including the 500-year and 100-year-floodplains. Floodplains that would be crossed by the segments within this study area are depicted in Attachment E: Hydrological Maps.

Groundwater

The study area would cross eight groundwater basins (DWR 2022a). Segment L would cross the San Joaquin Valley-White Wolf groundwater basin. Segment M would cross the San Joaquin Valley-White Wolf, San Joaquin Valley-Kern County, Cummings Valley, Brite Valley, Tehachapi Valley West, Tehachapi Valley East, and Fremont Valley

[148] Waterbody names of impaired waterbodies are based on data from the SWRCB California 2020-2022 Integrated Report and may differ from waterbody names included in Table 3.7-23: Named Waterbodies Crossed by Study Area 3D, which are taken from USGS NHD data.

groundwater basins. Segment E would cross the Fremont Valley and Antelope Valley groundwater basins.

Publicly available data from the DWR (DWR 2022b) was reviewed to estimate existing depths to groundwater. Groundwater readings from 15 monitoring wells located within two miles of the study area were reviewed, as listed in Table 3.7-25: Groundwater Readings within Two Miles of Study Area 3D. The 2022 and 2023 groundwater-depth readings at these monitoring wells range from 39.0 feet bgs to 686.5 bgs. Groundwater levels within the study area are expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

Table 3.7-25: Groundwater Readings within Two Miles of Study Area 3D

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
L	6	419.5	686.5
M	7	311.2	516.9
E	2	39.0	67.0

Source: DWR 2022b

3.7.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segments E, L, and M are detailed in Table 3.7-26: Study Area 3D Potential Impacts.

Surface Waters

As detailed in the Section 3.7.7.1 Existing Conditions in the Surface Waters subsection, Study Area 3D would cross 87 mapped waterbodies, including: one named waterbody and 28 unnamed waterbodies that would be crossed by Segment E; three named waterbodies and three unnamed waterbodies that would be crossed by Segment L; and five named waterbodies and 47 unnamed waterbodies that would be crossed by Segment M. Segment L would cross one impaired waterbody as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for segments that would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced

through the implementation of the AMMs detailed in Section 3.7.7.3 Potential Avoidance and/or Minimization Measures.

Table 3.7-26: Study Area 3D Potential Impacts

Potential Impact	Project Phase	Segment E	Segment L	Segment M
Water Quality Degradation	Construction	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact

Floodplains

Segments L, M, and E would be installed within and across the floodplains that are detailed in Section 3.7.7.1 Existing Conditions in the Floodplains subsection. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area that would cross floodplains. Construction and O&M activities would likely not cause permanent impacts related to floodplains. Potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.7.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 3D, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.7.7.3 Potential Avoidance and/or Minimization Measures.

3.7.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segments E, L, and M. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 3D and could be implemented to avoid or reduce potential impacts to segments within this study area.

3.7.8 Land Use and Planning

3.7.8.1 Existing Conditions

Section 3.7.1 Study Area 3D Description contains a description of each segment and Table 3.7-1: Jurisdictions Crossed by Study Area 3D details the distance the segments would traverse each local jurisdiction within Study Area 3D.

Land Use

The southern portion of Segment E would travel mostly along paved public roads surrounded by industrial and residential areas with some mixed use and commercial areas and parks interspersed. Once the segment would travel north from the unincorporated community of Rosamond, it would mostly follow unpaved roads through rural residential areas and open space with some commercial and industrial areas. The segment would travel directly adjacent to two solar fields within the unincorporated community of Mojave. The northern portion of the segment would follow paved roads through the central portion of the community (i.e., residential and commercial areas).

The northern portion Segment L would travel along paved and unpaved roads surrounded by agricultural land before crossing an industrial area parallel to Grapevine Creek. The segment would cross Grapevine Creek then it would parallel the creek through an agricultural area before crossing the California Aqueduct. The segment would continue through an agricultural area before terminating at a paved road.

The southwestern portion of Segment M would travel along public paved roads surrounded by agricultural land before continuing east through agricultural land and the Tejon Hills(i.e., rural residential areas and open space/public lands). The segment would continue traveling mostly along paved and unpaved roads surrounded by residential areas with some open space, agricultural areas, and commercial areas interspersed, as well as would briefly travel through open space near the California Correctional Institution. East of the City of Tehachapi, the segment would travel southeast through rural residential areas and open space/public lands within Cameron Canyon and a wind farm, before roughly traveling along unpaved and paved roads and terminating in the unincorporated community of Mojave. The eastern portion of the segment would be surrounded mostly by agricultural and residential areas with some commercial, open space, and industrial areas interspersed.

General plan land use designations that would be crossed by each segment and the corridor within each jurisdiction within Study Area 3D are detailed in Table 3.7-27: General Plan Land Use Designations Crossed by Study Area 3D.[149]

[149] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.7-27: General Plan Land Use Designations Crossed by Study Area 3D

Segment	Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[150] (acres)
E	City of Lancaster	High-Density Residential	N/A[151]	2.5
		Industrial	N/A[151]	22.0
		Low-Density Commercial	N/A[151]	10.4
		Medium-Density Residential	N/A[151]	3.1
		Mixed Use	N/A[151]	7.7
		Open Space and Public Lands	N/A[151]	0.7
	County of Los Angeles	Agricultural	N/A[151]	0.1
		Industrial	N/A[151]	22.9
		Low-Density Residential	<0.1	23.8
		Medium-Density Residential	2.4	51.1
		Other	N/A[151]	4.2
	Kern County	Agricultural	N/A[151]	5.3
		High-Density Commercial	0.7	14.7
		High-Density Residential	3.9	86.1
		Industrial	2.9	71.9
		Low-Density Commercial	1.3	33.1
		Low-Density Residential	N/A[151]	<0.1
		Medium-Density Residential	6.4	169.6
		Open Space and Public Lands	3.2	87.8
L	Kern County	Agricultural	9.2	222.3
		Industrial	1.3	31.2

[150] The corridor includes 100 feet on either side of the pipeline.
[151] This is not applicable because the pipeline would not cross the land use designation.

Segment	Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[150] (acres)
M	City of Tehachapi	Open Space and Public Lands	N/A[151]	0.3
	Kern County	Agricultural	29.8	727.3
		High-Density Commercial	N/A[151]	1.8
		High-Density Residential	3.4	77.6
		Industrial	0.2	5.0
		Low-Density Commercial	1.6	40.4
		Medium-Density Residential	6.3	147.7
		Open Space and Public Lands	8.6	208.2
		Other	N/A[151]	0.4
		Planned Development	N/A[151]	12.1

Source: California Governor's OPR 2024

Special Land Use Designations

As described in the following subsections and detailed in Table 3.7-28: Agency-Managed and Protected Lands Crossed by Study Area 3D, Table 3.7-29: Linear Infrastructure and Protected Trails Crossed by Study Area 3D, and Attachment F-1: Special Land Use Designations Maps, Segments E, L, and M would cross lands managed by federal, state, and local agencies. Section 3.7.3 Biological Resources contains a discussion of HCP/NCCP boundaries that the segments would cross within Study Area 3D. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Lands Managed by Federal Agencies

Segments E and M would cross parcels managed by the BLM. As detailed in Attachment F-2: Management and Conservation Plans Map, BLM-managed land in this area is managed under the CDCA Plan (BLM 1980), as well as the West Mojave Plan and DRECP, which are LUPAs to the CDCA Plan (BLM 2006).

In addition, Segment E would cross the Edwards AFB, which is managed by the DoD. The mission of the base includes radar, weapons, and aircraft testing and development (412th Test Wing 2020).

Segment M would cross the PCT at a location northeast of the intersection of Tehachapi Willow Springs Road and Oak Creek Road; this portion of the PCT occurs on private land. The PCT is a National Scenic Trail managed by the USFS in partnership with other local, state, and federal agencies and organizations (USFS 2023). The 1982 Pacific Crest National Scenic Trail Comprehensive Plan (USFS 1982) and the 2022 Foundation Document (USFS 2022a) inform management considerations, decisions, and planning efforts for the PCT.

Segment M would cross the Butterfield Overland National Historic Trail in two locations along North Rancho Drive and Rancho Road near the western terminus of the segment. Segment L would also cross the trail in two locations within agricultural land near the northern and southern portions of the segment. The National Trails office for Regions 6, 7, and 8 of the NPS administers the trail. The office does not manage any land but works with partners to help share and protect national historic trails (NPS 2023). Administration of national historic trails adheres to the policies listed in Director's Order #45 and Reference Manual 45 (NPS 2013, NPS 2019).

The National Trails System Act of 1968, as amended, governs the activities of the National Trails System, which includes the Butterfield Overland National Historic Trail and the PCT (16 U.S. Code [U.S.C.] § 1241 et seq.).

Lands Managed by State Agencies

Segment L would cross the California Aqueduct north of Edmunston Pumping Plant Road in Kern County. The aqueduct is managed by the DWR.

Table 3.7-28: Agency-Managed and Protected Lands Crossed by Study Area 3D

Segment	Agency	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor (acres)[152]
Federal				
E	BLM	BLM-Managed Land	0.1	5.0
	DoD	Edwards AFB	0.5	9.5
M	BLM	BLM-Managed Land	N/A[153]	4.0
State				
M	California State Lands Commission (CSLC)	CLSC-Managed Land	0.2	5.2
Regional/Special District				
E	Antelope Valley Cemetery District	Lancaster Cemetery	N/A[153]	0.6
	Kern County	Mojave East Park	N/A[153]	<0.1
	Kern County	Rosamond Park	N/A[153]	0.3
L	Kern County	Williamson Act Property	4.4	139.3
M	Kern County	Williamson Act Property	7.2	266.8
	Tehachapi-Cummings County Water District/Tehachapi Valley Recreation & Park District	Brite Valley Aquatic Recreation Area	0.3	6.6

Sources: California Department of Conservation 2023, DISDI 2024, GreenInfo Network 2023

[152] The corridor includes 100 feet on either side of the pipeline.
[153] This is not applicable because the pipeline would not cross the special land use.

Table 3.7-29: Linear Infrastructure and Protected Trails Crossed by Study Area 3D

Segment	Agency	Special Land Use	Number of Times Crossed
Federal			
L	NPS	Butterfield Overland National Historic Trail	2
M	USFS	PCT	1
	NPS	Butterfield Overland National Historic Trail	2
State			
L	DWR	California Aqueduct	1
M	HRSA	Bakersfield-to-Palmdale Section	3
Local			
M	Arvin Edison Water Storage District	Arvin Edison Canal	1
M	LADWP	Los Angeles Aqueduct/Second Los Angeles Aqueduct	1

Sources: BLM 2023, California Department of Technology 2024, USGS 2023, USFS 2022b

Segment M would cross one parcel managed by the CSLC within the unincorporated community of Mojave. Segment M would also cross the Bakersfield-to-Palmdale section of the California High-Speed Rail alignment in three locations southeast of the City of Tehachapi:

- along Highline Road;
- along Tehachapi Willow Springs Road; and
- within a wind farm east of Tehachapi Willow Springs Road.

The California HRSA is responsible for planning, designing, building, and operating the high-speed rail system.

Segment E would cross state highways managed by Caltrans.

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segments L and M would cross Williamson Act properties. The Williamson Act allows local governments to enter into contracts with private landowners to restrict land to agricultural or related open space uses. Participating counties and cities establish their own rules regarding uses of these properties. The most similar use for Kern County includes the erection, construction, alteration, operation, and maintenance of gas, electric, water, and communication utility facilities and similar public service facilities by corporations and companies under the jurisdiction of the CPUC and by public agencies (Kern County 2013).

Segment M would cross the Los Angeles Aqueduct/Second Los Angeles Aqueduct along Anjanette Avenue, west of the unincorporated community of Mojave. The aqueducts are managed by the LADWP. Segment M would also cross the Arvin Edison Canal along North Rancho Drive and east of North Rancho Drive. The canal is managed by the Arvin Edison Water Storage District.

Segment M would cross the Brite Valley Aquatic Recreation Area, which is a reservoir and recreation area owned by the Tehachapi-Cummings County Water District and operated by the Tehachapi Valley Recreation & Park District.

Segment E would cross the following parks:

- Rosamond Park and Mojave East Park, which are managed by Kern County; and
- Lancaster Cemetery, which is managed by the Antelope Valley Cemetery District.

Segment L would not cross any parks.

3.7.8.2 Impact Discussion

In addition to potential impacts specifically related to Study Area 3D, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segments to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.7-30: Land Use and Planning Potential Impacts for Study Area 3D.

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

Table 3.7-30: Land Use and Planning Potential Impacts for Study Area 3D

Potential Impact	Project Phase	Segment E	Segment L	Segment M
Divide a community	Construction	No Impact	No Impact	No Impact
	O&M	No Impact	No Impact	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact	No Impact	Potential Impact
	O&M	Potential Impact	No Impact	Potential Impact

Land Uses

The segments could generally follow existing SoCalGas pipeline corridors, public roadways, or unpaved access roads. Some larger sections of Segments L and M do not appear to have any existing access, so new temporary or permanent access roads could be needed in those areas. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

The segments could mostly occur in residential, open space, or agricultural areas and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

Segments E and M could cross BLM-managed land with Segment E occurring along an existing SoCalGas pipeline corridor. Any work outside of existing easements on BLM-managed land would require a grant of land rights. In addition, within the CDCA Plan area, any new pipelines over 12 inches in diameter must be located within one of 16 designated utility planning corridors. Contingent corridors may also be used if a project cannot be sited within one of the designated corridors, but the exception would need to be processed through an amendment to the CDCA Plan (BLM 1980). The portions of Segments E and M that could cross BLM-managed land would not travel within one of the designated corridors; therefore, a CDCA Plan amendment would be required for the portions of the alignment on BLM-managed land. Further, within the DRECP area, the portions of Segments E and M that could cross BLM-managed land are designated as DFAs. Renewable energy development is allowed within DFAs if it is consistent with the DRECP plan-wide CMAs, as well as specific CMAs for DFAs (BLM 2016).

Segment E could also cross the Edwards AFB with a small portion occurring along an existing SoCalGas pipeline corridor. Because the segment could cross the base within public roads, construction and O&M of the pipeline would not likely interfere with the mission of the base. New easement would be required for any encroachment from the pipeline or construction activities within the limits of the base.

Segments L and M could cross the federally administered Butterfield Overland National Historic Trail multiple times on public roads and private land. The National Historic Trail designation has no effect on the rights of private landowners and therefore no conflict with this land use would exist. Segment M could also cross the federally administered PCT on private land. Portions of the PCT are protected through easements on non-federal lands; therefore, further review could determine if there is an underlying easement along this portion of the trail. Although temporary impacts from construction could occur, the pipeline would not be anticipated to permanently impact the scenic or historical qualities of these trails or interfere with the nature and purposes of these trails. In addition, O&M of the pipeline would not be anticipated to conflict with the long-term management and use of these trails. Therefore, no conflicts with these trails would be anticipated.

State

The segments could cross state-managed linear infrastructure, including the California Aqueduct, state highways, and the Bakersfield-to-Palmdale section of the California High-Speed Rail alignment. The segments could require encroachment permits from the DWR and Caltrans for these crossings. No current plans for construction of the Bakersfield-to-Palmdale section exist, but a Final EIR/EIS was prepared for this portion of alignment (California HSRA 2021). Construction of the pipeline could conflict with implementation and construction of the alignment; however, it is unlikely the timing would overlap. Once construction, crossing the alignment could require an encroachment permit from the California HSRA.

Segment M could cross CSLC-managed land in one location. Any work outside of existing easements on CSLC-managed land would require the issuance of a lease.

Local

Segment M could cross locally managed infrastructure, including the Los Angeles Aqueduct/Second Los Angeles Aqueduct, the Arvin Edison Canal, and the Brite Valley Aquatic Recreation Area (a reservoir), which could require an easement or license agreement with the LADWP, Arvin Edison Water Storage District, and Tehachapi-Cummings County Water District, respectively. Additionally, Segments L and M could cross privately owned Williamson Act properties that have specified agricultural or open space land use designations authorized under the California Land Conservation Act of 1965, which would require development to be consistent with these use designations. Similar uses to the pipeline were identified for these properties within Kern County.

Segment E could also cross locally managed parks, and although most impacts would be temporary, construction of the pipeline could conflict with these land uses. As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Therefore, coordination with local agencies would be anticipated during future planning efforts.

3.7.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, the segments would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a result of construction and O&M of the pipeline; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce potential land use conflicts are shown in Table 3.7-31: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 3D. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.7-31: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 3D

Potential Impact	Potential Avoidance and Minimization Measures
Land use conflict with the CDCA Plan	The pipeline could be routed outside of BLM-managed land, to the extent feasible, or a CDCA Plan amendment could be pursued.

3.8 STUDY AREA 3E

3.8.1 Study Area 3E Description

Study Area 3E includes Segment K of the Evaluated Segments, as depicted in Figure 3.8-1: Study Area 3E Overview Map. The segment would traverse approximately 55 miles of Kern, Ventura, and Los Angeles counties and the City of Santa Clarita. This segment is part of the Collection zone, along with Segments B, D, E, G, I, J, L, M, and Y of the Evaluated Segments. Table 3.8-1: Jurisdictions Crossed by Study Area 3E details the distance in miles that the Segment K would cross through each jurisdiction. Segment K connects to Segment L north of the unincorporated community of Lebec and terminates at the south end in the City of Santa Clarita.

Table 3.8-1: Jurisdictions Crossed by Study Area 3E

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
K	55	City of Santa Clarita	6
		Unincorporated Kern County	14
		Unincorporated Los Angeles County	29
		Unincorporated Ventura County	6

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

3.8.1.1 Summary of Potential Impacts

Segment K within this study area is preliminary, and the actual routing, engineering, and design of the Evaluated Segments, and construction methods for the segment has not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, the segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of Segment K and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.8-2: Study Area 3E Potential Impact Summary summarizes the potential impacts identified for the segment within Study Area 3E.

Table 3.8-2: Study Area 3E Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of the segment
Biological Resources	• Potential impacts to species and habitat during construction and O&M of the segment • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M of the segment • Potential impacts to wetlands during construction and O&M of the segment • Potential impacts to wildlife movement and migration corridors during construction and O&M of the segment • Potential to conflict with existing NCCPs/HCPs and other conservation plans during construction and O&M of the segment
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of the segment • Potential to change the significance of an archaeological resource during construction and O&M of the segment • Potential to disturb human remains during construction and O&M of the segment • Potential to change the significance of a TCR during construction and O&M of the segment
Energy	• Potential impacts to existing energy resources during construction of the segment • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of the segment
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of the segment • Potential for a foreseeable upset or accident conditions during construction and O&M of the segment • Potential impacts to schools in close proximity to pipeline construction and O&M of the segment • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for the segment

Environmental Factor	Potential Impact
	• Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of the segment • Potential to contribute to wildland fires during construction and O&M of the segment
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of the segment • Potential impacts to ground water quality and/or depletion during construction and O&M of the segment • Potential impacts to floodplains during construction and O&M of the segment
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M of the segment

Figure 3.8-1: Study Area 3E Overview Map

Angeles Link Phase 1 Environmental Analysis

Study Area 3D (L)

KERN VENTURA KERN VENTURA

KERN LOS ANGELES KERN LOS ANGELES

K

5

LOS ANGELES VENTURA LOS ANGELES VENTURA

Santa Clarita

Study Area 1B (B)

Study Area 3F (Y)

- Interstate
- State Highway
- County Boundary

Segment

- K
- Adjacent/Other Study Area Visible

SoCalGas

INSIGNIA ENVIRONMENTAL

1:313,000

0 5 10 Miles

Z:\Projects\SCG_Angeles_Link\MXD\03_FDRAFT_Pipeline\Segment_Overviews.mxd 7/18/2024

3.8.2 Air Quality and Greenhouse Gas Emissions

3.8.2.1 Existing Conditions

Section 3.8.1 Study Area 3E Description provides a description of the segment and the cities and counties that would be crossed by Segment K. Study Area 3E is comprised of Segment K.

As depicted in Attachment A: Air Basins and Air Districts Maps, Segment K would be located within three air basins. Approximately twelve miles of Segment K are located within the San Joaquin Valley Air Basin under the jurisdiction of the SJVAPCD, approximately seven miles of Segment K are located within the South Central Coast Air Basin under the jurisdiction of the Ventura County Air Pollution Control District (VCAPCD), and 36 miles of Segment K are located within the South Coast Basin under the jurisdiction of SCAQMD.

The air basins crossed by this study area have different ground topographies and climate conditions. The San Joaquin Valley is bordered on the west by the Coastal Ranges; on the south by the San Emigdio Mountains, Tehachapi Mountains, and San Gabriel Mountains; on the east by the Sierra Nevada; and on the north by the Sacramento-San Joaquin River Delta and the Sacramento Valley. The topography of the surrounding mountain ranges creates a sheltered valley that tends to trap stable air and air pollutants. The South Central Coast Air Basin includes several coastal mountain ranges including the Sierra Madre Mountains, as well as smaller valleys, including the Santa Maria Valley. The basin is bordered to the east by the San Emigdio Mountains and the Temblor Range, to the south by the Santa Monica Mountains, and to the west by the Pacific Ocean. The SCAB includes the entirety of Orange County as well as non-desert portions of Los Angeles County and San Bernardino County. The basin is bordered to the north by the San Bernardino Mountains, to the east by the San Jacinto Mountains, to the south by the Santa Margarita Mountains, and to the west by the Pacific Ocean.

Attainment Status

Table 3.8-3: Study Area 3E Attainment Status summarizes the current attainment status for criteria air pollutants with the CAAQS and NAAQS for the districts within Study Area 3E.

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform

whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Air Quality

South Coast Air Quality Management District

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace its current CEQA Air Quality Handbook, which was approved in 1993 and provides guidance for evaluating a project's potential to impact air quality based on both the construction and O&M daily emissions for the project. The SCAQMD released updated air quality significance thresholds in March 2023 for criteria air pollutants to address the U.S. EPA's redesignation of the Coachella Valley to extreme non-attainment for the 2008 O_3 NAAQS. These thresholds are presented in Table 3.8-4: SCAQMD Criteria Air Pollutant Thresholds for Study Area 3E. The SCAQMD also requires the implementation of its Localized Significance Thresholds for projects within the district to evaluate potential impacts to sensitive receptors (SCAQMD 2024a).

San Joaquin Valley Air Pollution Control District

The SJVAPCD's Guidance for Addressing and Mitigating Air Quality Impacts provides guidance for evaluating a project's potential to impact air quality, including methods for calculating anticipated criteria air pollutant emissions from the construction and O&M phases of a project (SJVAPCD 2015). Table 3.8-5: SJVAPCD Criteria Air Pollutant Significance Thresholds for Study Area 3E details the applicable criteria air pollutant significance thresholds from the SJVAPCD that may apply to Angeles Link.

Ventura County Air Pollution Control District

The VCAPCD's Ventura County Air Quality Assessment Guide (VCAPCD 2003) provides recommended significance criteria for development projects. The document provides daily emission significance thresholds for NO_x and VOCs (referred to as reactive organic compounds by the VCAPCD). Emissions of other criteria air pollutants are considered above the significance threshold if they violate state or federal ambient air quality standards or make a substantial contribution to an existing exceedance of a state or federal ambient air quality standard. Table 3.8-6: VCAPCD Criteria Air Pollutant Thresholds for Study Area 3E details the applicable criteria air pollutant daily emission significance thresholds from the VCAPCD.

Greenhouse Gases

South Coast Air Quality Management District

SCAQMD staff are convening an ongoing GHG working group to determine appropriate significance thresholds for project emissions. On December 5, 2008, the SCAQMD Governing Board adopted interim GHG significance threshold for projects and provided draft guidance to assist with these determinations (SCAQMD 2024b). For industrial projects, the SCAQMD considers any project with emissions in excess of 10,000 metric tons per year of CO_2e emissions, including construction emissions amortized over 30 years and added to the operational GHG emissions, to be potentially significant.

Table 3.8-3: Study Area 3E Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
San Joaquin Valley Air Basin		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A
South Central Coast Air Basin		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Unclassified
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A
SCAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Criteria Air Pollutant	CAAQS	NAAQS
Sulfates	Attainment	N/A
Lead	Attainment	Nonattainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segment.
Source: CARB 2023

Table 3.8-4: SCAQMD Criteria Air Pollutant Thresholds for Study Area 3E

Criteria Air Pollutant	Daily Construction Emissions (Pounds)	Daily Operation Emissions (Pounds)
NO_X	100	100
VOC	75	75
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
CO	550	550
Lead	3	3

Source: SCAQMD 2024a

Table 3.8-5: SJVAPCD Criteria Air Pollutant Significance Thresholds for Study Area 3E

Criteria Air Pollutant	Annual Construction Emissions Thresholds (Tons)	Annual Operational Emissions Thresholds (Tons)	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
CO	100	100	100
NO_X	10	10	10
ROG	10	10	10
SO_X	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: SJVAPCD 2015

Table 3.8-6: VCAPCD Criteria Air Pollutant Thresholds for Study Area 3E

Criteria Air Pollutant	Daily Emissions (Pounds)
CO	None Identified[154]
NO_X	25
VOC	25
SO_X	None Identified
PM_{10}	None Identified
$PM_{2.5}$	None Identified
H_2S	None Identified
Lead	None Identified

Source: VCAPCD 2003

San Joaquin Valley Air Pollution Control District

In 2009, the SJVAPCD adopted its Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009a) and its policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009b).

These documents provide a framework for evaluating a project's potential impacts associated with GHG emissions. In this guidance, the SJVAPCD concludes that no one project could generate enough GHG emissions to noticeably change the global climate temperature; therefore, it does not establish a numeric threshold for GHG emissions.

Consistent with CPUC precedent (CPUC 2020a, CPUC 2020b), in the absence of an established numerical threshold from the SJVAPCD, projects may adopt the South Coast Air Quality Management District's (SCAQMD's) recommended approach for construction emissions by amortizing the construction emissions over a 30-year project lifetime and then comparing those emissions to the significance threshold of 10,000 metric tons CO2e per year.

[154] Significance thresholds for CO, SO_X, PM_{10}, $PM_{2.5}$, H_2S, and lead are not identified by the VCAPCD. Emissions of the Criteria air pollutants in areas under the jurisdiction of the VCAPCD are considered above the significance threshold if they violate state or federal ambient air quality standards, which are detailed in the following links: https://www.epa.gov/criteria-air-pollutants/naaqs-table and https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards.

Ventura County Air Pollution Control District

The VCAPCD has not developed a significance threshold for GHG emissions; however, CARB established an applicability threshold for operators of facilities including hydrogen production facilities of 25,000 metric tons or more of CO_2e per year (CARB 2019).

3.8.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segment K, if built, within Study Area 3E are summarized in Table 3.8-7: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 3E.

Table 3.8-7: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 3E

Potential Impact	Project Phase	Segment K
Air Quality	Construction	Potential Impact
	O&M	Potential Impact
GHGs	Construction	Potential Impact
	O&M	Potential Impact

Air Quality

As noted in Table 3.8-3: Study Area 3E Attainment Status, the segment associated with Study Area 3E would be in areas currently classified as nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.8.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are summarized in Section 3.8.2.3 Potential Avoidance and/or Minimization Measures.

3.8.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 3E and all AMMs are also applicable to this study area.

3.8.3 Biological Resources

3.8.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segment K. Biological resources in Study Area 3E are under the jurisdiction of the CDFW and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 3E; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segment within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that 21 vegetation communities would be present within the Study Area 3E segment. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Annual grassland, urban, coastal scrub, and mixed chapparal habitats are the predominant habitats present within a 200-foot-wide corridor centered on Segment K. The habitats and approximate area of each habitat that would be within the segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segment K within Study Area 3E would cross existing montane riparian, valley foothill riparian, and wet meadow habitats that would likely be classified as a sensitive natural communities within California. Segment K would contain montane riparian and valley foothill riparian habitat where the route crosses the Santa Clara River. Segment K would contain wet meadow habitat to the west of Castac Lake.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segment in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment K would cross 60 potentially jurisdictional features. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.8.7.1 Existing Conditions, wetland habitats may be present along these

jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, two protected plant species and 20 protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segment K. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near the segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

As detailed in Table 3.8-8: Protected Plant Species Likely to Occur in Study Area 3E, two protected plant species would be likely to occur within portions of Segment K in this study area and/or within 0.25 mile of the segment centerline. Unless otherwise noted, the species were identified to have a CNDDB record within 0.25 mile of the segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within the segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Protected Wildlife

As detailed in Table 3.8-9: Protected Wildlife Species Likely to Occur in Study Area 3E, 20 protected wildlife species would be likely to occur within portions of Segment K in this study area and/or within 0.25 mile of the segment centerline. Unless otherwise noted, the species were identified to have a CNDDB record within 0.25 mile of the segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within the segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), Segment K would be located within USFWS-designated critical habitat for the for the California condor, arroyo toad, least Bell’s vireo, and southwestern willow flycatcher. Segment K would cross approximately 5.2 miles of

critical habitat for the California Condor near the unincorporated community of Grapevine, California. Segment K would cross approximately 0.3 mile, 1.3 miles, and less than 0.1 mile of critical habitat for the arroyo toad, least Bell's vireo, and southwestern willow flycatcher, respectively. USFWS-designated critical habitat for those species is located along the Santa Clara River near the City of Santa Clarita.

Table 3.8-8: Protected Plant Species Likely to Occur in Study Area 3E

Segment	Species Common Name	Listing Status[155]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [156]
K	California Orcutt grass	SE, FE	13.8	14.0
	Tracy's eriastrum[157]	SR	0.0	0.1

Sources: CDFW 2023de and CDFW 2023e

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segment K would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 3E.

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segment K would not be located within any BLM-designated ACECs in Study Area 3E.

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segment K would not be located within the plan area of any NCCP or HCP in Study Area 3E.

[155] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered

State listing codes:
- SE: State-listed as endangered
- SR: State-listed as rare

[156] The buffer includes 0.25 mile on either side of the segment centerline.

[157] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of the range of Joshua tree in California as interpreted by the CDFW (CDFW 2024).

Table 3.8-9: Protected Wildlife Species Likely to Occur in Study Area 3E

Segment	Species Common Name	Listing Status[158]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[159]
Amphibians and Reptiles				
K	Arroyo toad[160]	FE	0.8	2.7
	Blunt-nosed leopard lizard[160]	SE, FE, FP	2.0	2.3
	California red-legged frog[160]	FT	44.2	40.0
	Southern rubber boa	ST	7.0	7.0
	Western pond turtle[161]	FPT	47.7	45.9
	Western spadefoot[160]	FPT	4.7	6.7
Birds				
K	Bald eagle[162]	SE, FDR, FP	0.0	0.4
	California condor[160]	SE, FE, FP	9.3	9.4

[158] Explanation of listing status codes:

Federal listing codes:
- FDR: Federally Delisted (Recovered)
- FE: Federally listed as endangered
- FPT: Federally proposed as threatened
- FT: Federally listed as threatened

State listing codes:
- SE: State-listed as endangered
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[159] The buffer includes 0.25 mile on either side of the segment centerline.

[160] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

[161] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

[162] For bald eagles and golden eagles, a one-mile buffer on either side of a segment centerline was used.

Segment	Species Common Name	Listing Status[158]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [159]
	Coastal California gnatcatcher[160]	FT	0.0	<0.1
	Golden eagle[160, 162]	FP	70.9	72.2
	Least Bell's vireo[160]	SE, FE	2.4	1.5
	Southwestern willow flycatcher[160]	SE, FE	<0.1	0.7
	Swainson's hawk[160]	ST	0.5	0.7
	Tricolored blackbird[160]	ST	0.3	0.7
	White-tailed kite	FP	35.9	35.1
Fish				
K	Santa Ana sucker	FT	0.2	0.8
	Unarmored threespine stickleback	SE, FE, FP	0.6	1.1
Mammals				
K	Giant kangaroo rat[160]	SE, FE	2.0	2.3
	Nelson's antelope squirrel[160]	ST	2.0	2.3
	San Joaquin kit fox[160]	ST, FE	2.0	2.3

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

Furthermore, the centerline of Segment K would be located within 0.25 mile of a CDFW-managed land or conservation easement—Peace Valley Ecological Reserve—north of Pyramid Lake in Study Area 3E. In addition, Segment K would cross approximately 0.2 mile of the Castaic Conservation Easement in three locations near the City of Santa Clarita. The Special Land Use Designations subsection of Section 3.8.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segment K would not cross any waterbodies in Study Area 3E that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.8-10: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 3E. The highest areas of connectivity occur where the segment would traverse undeveloped canyons and mountainous terrain between the City of Santa Clarita and the unincorporated community of Grapevine. The segment would cross or be located near I-5 which limits eastward and westward wildlife movement within Study Area 3E. The lowest areas of connectivity occur where the Segment would traverse the City of Santa Clarita.

Table 3.8-10: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 3E

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
K	13.1	0.1	3.6	35.3	3.3

Source: CDFW 2019

3.8.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3E are summarized in Table 3.8-11: Biological Resources Potential Impacts for Study Area 3E.

Table 3.8-11: Biological Resources Potential Impacts for Study Area 3E

Potential Impact	Project Phase	Segment K
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, mammals, reptiles, bird, fish, and plants; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	Potential Impact: Conflict with allowable use or management of land
	O&M	Potential Impact: Conflict with allowable use or management of land

Protected Species and Their Habitat

Impacts to Protected Amphibian, Mammal, and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian, mammal, and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 3E.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Fish Species

Typical construction and O&M activities could have the potential to impact protected fish species that may occur within construction areas. Impacts, as previously described in Study Area 3B Section 3.5.3.2 Impact Discussion in the Impacts to Protected Fish Species subsection, would not differ within Study Area 3E.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 3E.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Plant Species

Typical construction and O&M activities could have the potential to impact protected plant species that may occur within construction areas. Impacts, as previously described in Study Area 1B Section 3.2.3.2 Impact Discussion in the Impacts to Protected Plant Species subsection, would not differ within Study Area 3E.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Construction and O&M activities associated with the pipeline installation would have the potential to result in impacts to riparian habitat or other sensitive natural communities, including montane riparian, valley foothill riparian, and wet meadow habitats that may occur within construction areas. Impacts, as previously described in Study Area 1A

Section 3.1.3.2 Impact Discussion in the Wetlands, Riparian Habitat, or Other Sensitive Natural Communities subsection, would not differ within Study Area 3E.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.3.3 Potential Avoidance and/or Minimization Measures.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 3E.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities could impact the physical and biological features necessary to support USFWS-designated critical habitat for the California condor, arroyo toad, least Bell's vireo, and southwestern willow flycatcher. A more detailed analysis, as well as consultation with USFWS, may be required to determine potential impacts to these critical habitats.

Construction and O&M activities would not conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans.

In addition, construction and O&M activities could conflict with the Castaic Conservation Easement or the Peace Valley Ecological Reserve. However, consultation with the CDFW would be required to determine potential conflicts with these CDFW-managed or -operated lands.

3.8.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-11: Biological Resources Potential Avoidance and Minimization Measures in Study Area 1B. The impacts would not differ within Study Area 3E.

3.8.4 Cultural Resources and Tribal Cultural Resources

3.8.4.1 Existing Conditions

A total of 115 previously documented resources have been identified within the 0.25-mile buffer of Study Area 3E, as detailed in Table 3.8-12: Existing Cultural Resources in Study Area 3E. Of these resources, 30 are within a 200-foot-wide pipeline corridor (comprising 100 feet on either side of the segment centerline).

Table 3.8-12: Existing Cultural Resources in Study Area 3E

Segment	Relationship to Segment	Total Identified Resources
K	Within[163]	30
	0.25 mile	85

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 3E was not available. Until further information can be acquired, all of the 30 cultural resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.8.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segment K, if built, within Study Area 3E are summarized in Table 3.8-13: Cultural and Tribal Resources Potential Impacts. All known eligible and unevaluated resources within Study Area 3E were analyzed to determine if the Segment K or 200-foot-wide corridor could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 3E that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary route for Segments K, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in 3.8.4.3 Potential Avoidance and/or Minimization Measures.

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources subsection. Constructions and O&M activities would have the potential for direct impacts to historical resources identified within segments in this study area.

[163] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.7.4.3 Potential Avoidance and/or Minimization Measures.

Table 3.8-13: Cultural and Tribal Resources Potential Impacts for Study Area 3E

Potential Impact	Project Phase	Segment K
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for all segments in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Constructions and O&M activities would have the potential for direct impacts to human remains for all segments in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Constructions and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during Assembly Bill 52 consultation with tribes.

3.8.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed

in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.8.5 Energy

3.8.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within Kern, Los Angeles, and Ventura counties that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 3E.

Existing Local Energy Use

Electricity

Within Study Area 3E, PG&E and SCE are the primary providers of electricity (PG&E 2014a and SCE 2023). Additional information about PG&E and SCE's programs and RPS requirements is included in Study Area 1A Section 3.1.5.1 Existing Conditions in the Existing Local Energy Use subsection and Study Area 1B Section 3.2.5.1 Existing Conditions in the Existing Local Energy Use subsection.

As detailed in Table 3.8-14: Electricity Consumption in 2022 for Counties Crossed by Study Area 3E, approximately 15, 68, and 5.6 billion kWh of electricity were consumed in Kern, Los Angeles, and Ventura counties in 2022, respectively.

Table 3.8-14: Electricity Consumption in 2022 for Counties Crossed by Study Area 3E

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Kern County	2,764.8	1,2096.1	**14,860.9**
Los Angeles County	23,255.5	45,229.5	**68,485.0**
Ventura County	2,037.4	3,521.6	**5,558.9**

Source: CEC 2022a

Natural Gas

Within Study Area 3E, PG&E and SoCalGas provide natural gas service (PG&E 2014b and SoCalGas 2024). As detailed in Table 3.8-15: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 3E, approximately two billion, three billion, and 171 million therms[164] of natural gas were consumed in Kern, Los Angeles, and Ventura counties in 2022, respectively.

[164] One therm is equal to 100,000 Btu, or 100 kBtu.

Table 3.8-15: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 3E

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Kern County	99.1	1,674.4	**1,773.6**
Los Angeles County	1,122.3	1,698.0	**2,820.3**
Ventura County	103.2	67.8	**171.0**

Source: CEC 2022a

Diesel and Gasoline

Within Study Area 3E, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

As detailed in Table 3.8-16: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3E, approximately 395 million gasoline fuel sales and 226 million diesel fuel sales were estimated in Kern County; approximately three billion gasoline fuel sales and 295 million diesel fuel sales were estimated in Los Angeles County; and approximately 303 million gasoline fuel sales and 40 million diesel fuel sales were estimated in Ventura County in 2022.

Table 3.8-16: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3E

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Kern County	395	226
Los Angeles County	3,070	295
Ventura County	303	40

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation.

However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Los Angeles County

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Los Angeles County subsection, sites identified for potential renewable energy generation are listed in the REMP (County of Los Angeles 2020). Segment K within Study Area 3E would not overlap any approved or in-progress PV solar-generation facilities within Los Angeles County (CEC 2023c).

Kern County

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Kern County subsection, Kern County provides a list and associated map of the current approved, in-progress, and upcoming wind and solar energy projects within the county (Kern County Planning and Natural Resources Department 2013). No separate renewable energy plan has been developed for Kern County. Segment K within Study Area 3E would not overlap any approved or in-progress PV solar-generation facilities within Kern County (CEC 2023c).

Ventura County

The Ventura County General Plan emphasizes the integration of sustainable technologies in commercial and industrial developments, promoting energy-efficient initiatives. Additionally, it supports the production of alternative energy and fuels on industrial-designated land to reduce dependence on petroleum-based fuels and minimize GHG emissions (County of Ventura 2020). The Ventura County Non-Coastal Zoning Ordinance lists energy production from renewable sources under the open space, agricultural, residential and special purposes zones. No separate renewable energy plan has been developed for Ventura County (County of Ventura 2024). Segment K within Study Area 3E would not overlap any approved or in-progress PV solar-generation facilities within Ventura County (CEC 2023c).

3.8.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3E are summarized in Table 3.8-17: Study Area 3E Potential Energy Impacts.

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Table 3.8-17: Study Area 3E Potential Energy Impacts

Potential Impact	Project Phase	Segment K
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact
	O&M	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact
	O&M	No Impact

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.5.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.5.3 Potential Avoidance and/or Minimization Measures.

3.8.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.8.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

3.8.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 3E.

3.8.6.1 Existing Conditions

Section 3.8.1 Study Area 3E Description provides a description of the segment, as well as the counties and cities through which the segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 3E are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed approximately five open cases and 12 closed hazardous materials cases within 1,000 feet of Segment K. Open hazardous materials sites are detailed in Table 3.8-18: Open Hazardous Materials Sites Within 1,000 Feet of Study Area 3E.

Fire Hazards

The CAL FIRE FHSZs that would be crossed by the Study Area 3E segment are detailed in Table 3.8-19: Fire Hazard Severity Zones Crossed by Study Area 3E. Study Area 3E would be located within SRAs and LRAs. These areas are recognized by the Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency.

Schools and Day-Care Centers

Schools and day-care centers within 0.5 mile of Study Area 3E are presented in Table 3.8-20: Schools and Day-Care Centers within 0.5 Mile of Study Area 3E.

Airports

No airports or private airstrips are within two miles of Segment K.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segment K in Study Area 3E is managed by the following plans:

- County of Los Angeles OAEOP (County of Los Angeles 2023),
- 2020 County of Los Angeles AHMP (County of Los Angeles 2020),
- Kern County EOP (County of Kern 2022),
- Kern MJHMP (County of Kern 2020),
- 2021 Ventura County Operational Area EOP (County of Ventura 2021), and
- Ventura County MJHMP (County of Ventura 2022).

Table 3.8-18: Open Hazardous Materials Sites Within 1,000 Feet of Study Area 3E

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[165] (feet)	Media Affected	Regulatory Status
EnviroStor Sites				
Castaic Lake Water Agency - Whittaker Off-Site Groundwater Contamination	K	230	Aquifer used for drinking water, well	Active
Saugus Industrial Center (Former Keysor-Century Corp.)	K	853	Aquifer used for drinking water supply, contaminated surface/structure, indoor air, soil, soil vapor	Active
Valencia Town Center Cinema Garage	K	538	Not Specified	Refer: 1248 Local Agency[166]
Terry York Honda	K	743	Not Specified	Refer: 1248 Local Agency
Terry York Chrysler	K	756	Not Specified	Refer: 1248 Local Agency

Sources: DTSC 2024 and SWRCB 2024

[165] Distances were calculated based on the approximate center point coordinates provided by GeoTracker and EnviroStor. Depending on the actual property boundaries of each hazardous materials site and/or facility, these sites may be closer than specified.

[166] Sites with a “Refer” in their status are being managed by other agencies besides those more directly related to GeoTracker and EnviroStor.

Table 3.8-19: Fire Hazard Severity Zones Crossed by Study Area 3E

FHSZ	Segment K (miles)
SRA	
Moderate	0.8
High	14.0
Very High	18.0
LRA	
Very High	2.2

Source: CAL FIRE 2024

Table 3.8-20: Schools and Day-Care Centers within 0.5 Mile of Study Area 3E

Segment	Schools	Day-Care Centers
K	8	12

Source: U.S. Department of Homeland Security 2024

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

Airports

No airports or private airstrips are within two miles of Segment K.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segment K in Study Area 3E is managed by the following plans:

- County of Los Angeles OAEOP (County of Los Angeles 2023),
- 2020 County of Los Angeles AHMP (County of Los Angeles 2020),
- Kern County EOP (County of Kern 2022),
- Kern MJHMP (County of Kern 2020),
- 2021 Ventura County Operational Area EOP (County of Ventura 2021), and
- Ventura County MJHMP (County of Ventura 2022).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

3.8.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segment within Study Area 3E are summarized in Table 3.8-21: Study Area 3E Potential Impacts.

Table 3.8-21: Study Area 3E Potential Impacts

Potential Impact	Project Phase	Segment K
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact
	O&M	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact
	O&M	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	Potential Impact
	O&M	Potential Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	Potential Impact
	O&M	Potential Impact
Public Airport and/or Private Airstrip Hazards	Construction	No Impact
	O&M	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact
	O&M	Potential Impact
Wildland Fires	Construction	Potential Impact
	O&M	Potential Impact

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Based on the resources present in this study area, construction and O&M activities could have a potential for temporary or permanent impact to the public or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.6.3 Potential Avoidance and/or Minimization Measures.

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M

activities could have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Hazardous Substances in Close Proximity to Schools subsection. A total of eight schools and 12 day-care centers are located within 0.5 mile of where Segment K would be located. Construction and O&M activities have a potential for a hazardous emission or impacts resulting from handling hazardous materials within 0.5 mile of a school. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.6.3 Potential Avoidance and/or Minimization Measures.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Existing Hazardous Materials Sites Listed in Government Code Section 65962.5 subsection.

Based on the five open cases identified within 1,000 feet of the segment within Study Area 3E, temporary or permanent impacts may occur due to existing subsurface contamination that may be present during construction or O&M. Construction and O&M activities would have the potential for existing hazardous materials sites to create a significant hazard to the public or the environment. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

No airports or private airstrips are located within two miles of Segment K. Therefore, there is no potential for temporary or permanent impacts to airports or private airstrips near the pipeline during construction and O&M.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.8.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

Typical impacts and wildfire prevention practices that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Wildland Fires subsection. As previously discussed, approximately 18.0 miles and 2.2 miles of Segment K would be located within the CAL FIRE Very High

FHSZ within an SRA and LRA, respectively. High heat or sparks from vehicles or equipment would have the potential to ignite dry vegetation and cause fires. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.8.6.3 Potential Avoidance and/or Minimization Measures.

3.8.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B. The impacts that could be anticipated within Study Area 3E would not be expected to differ from those identified within Study Areas 1A and 1B.

3.8.7 Hydrology and Water Quality

3.8.7.1 Existing Conditions

Segment K is located in the RWQCB Los Angeles Region 4 and RWQCB Central Valley Region 5. Water resources in these areas are also under the jurisdiction of CDFW Central Region 4 and South Coast Region 5 and USACE Sacramento District and Los Angeles District. The following subsections discuss hydrological resource existing conditions in Study Area 3E; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for the pipeline segment within this study area.

Surface Waters

The study area would cross six USGS watersheds (USGS 2023a). Segment K would cross the Grapevine Creek, Liveoak Canyon-Pastoria Creek, Upper Piru Creek, Castaic Creek, Upper Santa Clara River, and Lower Piru Creek watersheds.

Based on the review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Segment K would cross 53 unnamed waterbodies and seven named waterbodies. A list of all named waterbodies crossed by the study area are included in Table 3.8-22: Named Waterbodies Crossed by Study Area 3E. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- one artificial waterway,
- three connectors between waterways, and
- 56 streams/rivers.

Table 3.8-22: Named Waterbodies Crossed by Study Area 3E

Waterbody Name	Segment(s) Crossed	Waterbody Classification
Castaic Creek	K	Artificial waterway
Gorman Creek	K	Stream/river
Newhall Creek	K	Stream/river
Placerita Creek	K	Stream/river
Santa Clara River	K	Stream/river
South Fork Santa Clara River	K	Stream/river
West Branch of the California Aqueduct	K	Connector between waterways

Source: USGS 2023b

Impaired Surface Waters

As indicated by a review of the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2023a), one impaired water body would be crossed by Segment K, as listed in

Table 3.8-23: Impaired Waterbodies Crossed by Study Area 3E. Details regarding the pollutant that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b). The listing associated with the waterbody specifies that Chloride, chlorpyrifos, toxicity, and water temperature are the pollutants causing a lack of attainment of water quality standards for certain waterbodies within the study area and identifies nonpoint sources, point sources, and unknown sources as the sources of the pollutant.

Table 3.8-23: Impaired Waterbodies Crossed by Study Area 3E

Waterbody Name[167]	RWQCB Jurisdiction	Pollutant
Santa Clara River Reach 6 (West Pier Highway 99 to Bouquet Canyon Road)	Regional Board 4 – Los Angeles	Chloride, chlorpyrifos, toxicity, water temperature

Source: SWRCB 2022a

Floodplains

As indicated by a review of the FEMA Flood Hazard Layer (FEMA 2023), Study Area 3E would cross several floodplains, including the 500-year and 100-year-floodplains. Floodplains that would be crossed by the segments within this Study Area are depicted in Attachment E: Hydrological Maps.

Groundwater

Study Area 3E would cross five groundwater basins (DWR 2022a). Segment K would cross the San Joaquin Valley-White Wolf, Castac Lake Valley, Cuddy Canyon Valley, Hungry Valley, and Santa Clara River Callye-Santa Clara River Valley East groundwater basins.

Publicly available monitoring well data from DWR (DWR 2022b) provide existing depths bgs to groundwater. Groundwater readings from 31 monitoring wells located within two miles of Study Area 3E were reviewed, as listed in Table 3.8-24: Groundwater Readings within Two Miles of Study Area 3E. The 2022 groundwater-depth readings at these monitoring wells range from 0.3 feet bgs to 211.6 bgs. Groundwater levels within the study area are expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

[167] Waterbody names of impaired waterbodies are based on data from the SWRCB California 2020-2022 Integrated Report and may differ from waterbody names included in Table 3.8-22: Named Waterbodies Crossed by Study Area 3E, which are taken from USGS NHD data.

3.8.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segment K are detailed in Table 3.8-25: Study Area 3E Potential Impacts.

Table 3.8-24: Groundwater Readings within Two Miles of Study Area 3E

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
K	31	0.3	211.6

Source: DWR 2022b

Table 3.8-25: Study Area 3E Potential Impacts

Potential Impact	Project Phase	Segment K
Water Quality Degradation	Construction	Potential Impact
	O&M	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact
	O&M	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact
	O&M	Potential Impact

Surface Waters

As detailed in Section 3.8.7.1 Existing Conditions in the Surface Waters subsection, Segment K would cross seven named waterbodies and 53 unnamed waterbodies including one impaired waterbody as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for segments that would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.8.7.3 Potential Avoidance and/or Minimization Measures.

Floodplains

Segment K would be installed within and across the floodplains that are detailed in the Floodplains portion of Section 3.8.7.1 Existing Conditions in the Floodplains subsection. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area that would cross floodplains. Construction and O&M activities would likely not cause permanent impacts related to floodplains. Potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.8.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 3E, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.8.7.3 Potential Avoidance and/or Minimization Measures.

3.8.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segment K. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 3E and could be implemented to avoid or reduce potential impacts to segments within this study area.

3.8.8 Land Use and Planning

3.8.8.1 Existing Conditions

Section 3.8.1 Study Area 3E Description contains a description of Segment K and Table 3.8-1: Jurisdictions Crossed by Study Area 3E details the distance Segment K would traverse each local jurisdiction within Study Area 3E.

Land Use

The northern portion of Segment K would cross agricultural areas and open space (designated as Planned Development) before crossing I-5 and continuing through the Hungry Valley SVRA. The segment would cross I-5 again near Pyramid Lake and continue through open space/public lands associated with the ANF before crossing I-5 two more times within an industrial area north of the unincorporated community of Castaic. The remainder of the segment would generally travel along paved public roads, excluding crossings of Castaic Creek, I-5, and the Santa Clara River. Surrounding land uses for the southern portion of the segment would include residential areas with some open space/public lands, commercial, mixed use, and industrial areas associated with the unincorporated community of Castaic and the City of Santa Clarita.

General plan land use designations that would be crossed by Segment K and the corridor within each jurisdiction within Study Area 3E are detailed in Table 3.8-26: General Plan Land Use Designations Crossed by Study Area 3E.[168]

Special Land Use Designations

As described in the following subsections and detailed in Table 3.8-27: Agency-Managed and Protected Lands Crossed by Study Area 3E, Table 3.8-28: Aqueducts and Protected Trails Crossed by Study Area 3E, and Attachment F-1: Special Land Use Designations Maps, Segment K would cross lands managed by federal, state, and local agencies. Section 3.8.3 Biological Resources contains a discussion of HCP/NCCP boundaries that the segments would cross within Study Area 3E. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

[168] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.8-26: General Plan Land Use Designations Crossed by Study Area 3E

Jurisdiction	General Plan Land Use Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[169] (acres)
City of Santa Clarita	High-Density Residential	N/A[170]	1.1
	Industrial	<0.1	1.5
	Low-Density Commercial	<0.1	25.8
	Mixed Use	<0.1	15.0
	Open Space and Public Lands	0.6	20.0
	Other	N/A[170]	0.2
	Planned Development	0.5	19.9
County of Los Angeles	Industrial	3.7	98.8
	Low-Density Commercial	0.1	14.2
	Low-Density Residential	0.8	18.7
	Medium-Density Residential	N/A[170]	15.6
	Mixed Use	0.2	5.2
	Open Space and Public Lands	14.6	348.6
	Other	0.1	9.5
County of Ventura	Open Space and Public Lands	5.8	140.4
Kern County	Agricultural	2.6	62.7
	High-Density Commercial	N/A[170]	<0.1
	Low-Density Commercial	N/A[170]	<0.1
	Low-Density Residential	<0.1	0.4
	Open Space and Public Lands	1.2	32.4
	Planned Development	9.8	240.7

Source: California Governor's OPR 2024

[169] The corridor includes 100 feet on either side of the pipeline.
[170] This is not applicable because the pipeline would not cross the land use designation.

Table 3.8-27: Agency-Managed and Protected Lands Crossed by Study Area 3E

Agency/Organization	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor [171] (acres)
Federal			
BLM	BLM-Managed Land	1.3	32.6
USFS	ANF	10.3	248.1
State			
California State Parks	Hungry Valley SVRA	8.8	213.9
CDFW	DWR Mitigation Property (proposed Peace Valley Ecological Reserve)	1.0	19.3
Regional			
County of Los Angeles	William S. Hart Regional Park	N/A[172]	0.1
Kern County	Williamson Act Property	2.0	50.7
Mountains Recreation and Conservation Authority (MRCA)	Cold Creek Valley Preserve	2.1	50.4
City			
City of Santa Clarita	Round Mountain Open Space[173]	0.7	17.7
	South Fork River Trail Open Space[173]	1.1	18.3

Sources: California Department of Conservation 2023, CDFW 2023a, GreenInfo Network 2023

[171] The corridor includes 100 feet on either side of the pipeline.
[172] This is not applicable because the pipeline would not cross the special land use.
[173] A CDFW conservation easement overlaps this open space area.

Table 3.8-28: Aqueducts and Protected Trails Crossed by Study Area 3E

Agency	Special Land Use	Number of Times Crossed
Federal		
NPS	Butterfield Overland National Historic Trail	2
State		
DWR	California Aqueduct (West Branch)	2

Sources: BLM 2023, USGS 2023

Lands Managed by Federal Agencies

Segment K would travel along the Butterfield Overland National Historic Trail in two locations:

- approximately 0.4 mile along Ralphs Ranch Road south of the unincorporated community of Lebec; and
- approximately 3.2 miles along Railroad Avenue and Newhall Avenue in the City of Santa Clarita.

The National Trails office for Regions 6, 7, and 8 of the NPS administers the trail. The office does not manage any land but works with partners to help share and protect national historic trails (NPS 2023). Administration of national historic trails adheres to the policies listed in Director's Order #45 and Reference Manual 45 (NPS 2013, NPS 2019). The National Trails System Act of 1968, as amended, governs the activities of the National Trails System, which includes the Butterfield Overland National Historic Trail (U.S. Congress 1968).

Segment K would cross land managed by the BLM along Alamos Campground Road, which is managed under the South Coast Resource Management Plan (RMP) (BLM 1994), as detailed in Attachment F-2: Management and Conservation Plans Map.

The central portion of Segment K would cross the ANF, which is managed by the USFS under the ANF LMP (USFS 2006).

Lands Managed by State Agencies

Segment K would cross the Hungry Valley SVRA south of the unincorporated community of Lebec, which is managed by California State Parks. The Hungry Valley SVRA General Plan informs the long-range development, management, and operation of the park (California State Parks 1981). The Hungry Valley SVRA General Plan Update is currently underway and in the public scoping period for the associated EIR (California State Parks 2023).

Segment K would cross the California Aqueduct (West Branch) at a location along Pyramid Lake Road north of Pyramid Lake and at a location within the ANF east of I-5. The aqueduct is managed by the DWR.

Segment K would cross a mitigation property acquired by the CDFW from the DWR as mitigation for the State Water Project. It is being considered for designation as the Peace Valley Ecological Reserve (CDFW 2023b). Segment K would also cross a CDFW conservation easement that overlaps with locally managed open space as discussed in the following section.

Segment K would cross state highways managed by Caltrans.

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segment K would cross Williamson Act properties in Kern County. The Williamson Act allows local governments to enter into contracts with private landowners to restrict land to agricultural or related open space uses. Participating counties and cities establish their own rules regarding uses of these properties. The most similar use for Kern County includes the erection, construction, alteration, operation, and maintenance of gas, electric, water, and communication utility facilities and similar public service facilities by corporations and companies under the jurisdiction of the CPUC and by public agencies (Kern County 2013).

Segment K or the corridor would cross the following parks and open space areas:

- Cold Creek Valley Preserve, which is managed by the MRCA;
- Round Mountain Open Space and South Fork River Trail Open Space, which are managed by the City of Santa Clarita and overlap with a CDFW conservation easement; and
- William S. Hart Regional Park, which is managed by Los Angeles County.

3.8.8.2 Impact Discussion

In addition to potential impacts specifically related to Study Area 3E, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segment to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.8-29: Land Use and Planning Potential Impacts for Study Area 3E.

Table 3.8-29: Land Use and Planning Potential Impacts for Study Area 3E

Potential Impact	Project Phase	Segment K
Divide a community	Construction	No Impact
	O&M	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact
	O&M	Potential Impact

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

Land Uses

Segment K could generally follow existing SoCalGas pipeline corridors, public roadways, or unpaved access roads. Several portions of Segment K that would overlap with existing SoCalGas pipeline corridors do not appear to have adjacent existing access, so new temporary or permanent access roads could be needed in those areas. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

Segment K could occur primarily in open space/public lands and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

Segment K could cross BLM-managed land roughly along an existing SoCalGas pipeline corridor. Any work outside of existing easements on BLM-managed land would require a grant of land rights.

Segment K could also cross the ANF roughly along an existing SoCalGas pipeline corridor within the USFS's DAI and BCNM designations. The DAI designation allows renewable energy resources and major utility corridors in designated areas (i.e., the I-5 corridor is a designated utility corridor). The BCNM designation allows renewable energy resources by exception and does not allow major utility corridors. Coordination with the USFS could confirm whether the pipeline could be allowed by exception. In addition, the portion of Segment K that would fall within the BCNM designation would also fall within an Inventoried Roadless Area that does not allow road construction or reconstruction (USFS 2006). Work outside of existing easements would require a grant of land rights.

Segment K could cross the federally administered Butterfield Overland National Historic Trail within public roads in the City of Santa Clarita and County of Los Angeles. Although temporary impacts from construction could occur, the pipeline would not be anticipated to permanently impact the historical qualities of this trail or interfere with the nature and purposes of these trail. In addition, O&M of the pipeline would not be anticipated to conflict with the long-term management and use of this trail. Therefore, no conflicts with this trail would be anticipated.

State

Segment K could cross the Hungry Valley SVRA along an existing SoCalGas pipeline corridor. The Hungry Valley SVRA provides off-highway vehicle recreation opportunities while protecting natural and cultural resources. Construction activities could temporarily impact recreational activities and resources, but permanent impacts from the pipeline are not anticipated as the Hungry Valley SVRA General Plan states that existing utilities do not pose any conflicts (California State Parks 1981). Construction and O&M activities would need to be consistent with the general plan and a Right-of-Entry Permit from California State Parks would be required.

Segment K could also cross a CDFW-managed mitigation property, as well as a conservation easement, roughly along existing SoCalGas pipeline corridors. Conservation easements permanently limit uses of the land to protect specific conservation values (e.g., species or habitat), and CDFW mitigation properties are typically underlain with this type of easement. In addition, the mitigation property is being considered by the CDFW for designation as an ecological reserve, which would be maintained primarily for the protection of specialized terrestrial or aquatic habitat types and rare, threatened, or endangered species (14 CCR § 630). Although most impacts would be temporary, construction of the pipeline could conflict with management of the property and the terms of the conservation easement. Further review of the easements could identify whether specific restrictions and/or allowable uses within the easement agreements pertain to the construction and O&M activities.

Segment K could cross state-managed linear infrastructure, including the California Aqueduct and state highways. The segment could require encroachment permits from the DWR and Caltrans for these crossings.

Local

The northern portion of Segment K could cross privately owned Williamson Act properties that have specified agricultural or open space land use designations authorized under the California Land Conservation Act of 1965, which would require development to be consistent with these use designations. Similar uses to the pipeline were identified for these properties within Kern County.

Segment K could also cross locally managed parks and open space areas, and although impacts would be temporary, construction of the pipeline could conflict with these land uses. As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has

preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Therefore, coordination with local agencies would be anticipated during future planning efforts.

3.8.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, Segment K would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a result of construction and O&M of the pipeline; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce potential land use conflicts are shown in Table 3.8-30: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 3E. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.8-30: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 3E

Potential Impact	Potential Avoidance and Minimization Measures
Land use conflict with USFS BCNM designation	The pipeline could be routed outside of this designation, to the extent feasible, or coordination could occur with the USFS to determine if the pipeline could be an allowable exception within this designation.
Potential land use conflicts with a CDFW-managed mitigation property and CDFW conservation easement	The terms and conditions of the easement underlying the mitigation property, as well as the conservation easement overlapping the Santa Round Mountain Open Space and South Fork River Trail Open Space, could be reviewed for conflicts or the pipeline could be routed outside of these areas, to the extent feasible.

3.9 STUDY AREA 3F

3.9.1 Study Area 3F Description

Study Area 3F includes Segment Y of the Evaluated Segments, as depicted in Figure 3.9-1: Study Area 3F Overview Map. The segment would traverse approximately 49 miles of Los Angeles County and the cities of Bell, Burbank, Carson, Compton, Glendale, Huntington Park, Los Angeles, Lynwood, Maywood, San Fernando, South Gate, and Vernon. The segment is part of the Collection Zone, along with Segments B, D, E, G, I, J, K, L, and M of the Evaluated Segments. Table 3.9-1: Jurisdictions Crossed by Study Area 3F details the distance in miles that the Study Area 3F segment would cross through each jurisdiction. Segment Y connects to Segment B on the north end and connects to Segments T and W of the Central Zone then terminates at Segment D of the Collection Zone on the south end.

Table 3.9-1: Jurisdictions Crossed by Study Area 3F

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
Y	49	City of Bell	<1
		City of Burbank	3
		City of Carson	4
		City of Compton	4
		City of Glendale	5
		City of Huntington Park	2
		City of Los Angeles	21
		City of Lynwood	2
		City of Maywood	<1
		City of San Fernando	1
		City of South Gate	3
		City of Vernon	2
		Unincorporated Los Angeles County	2

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

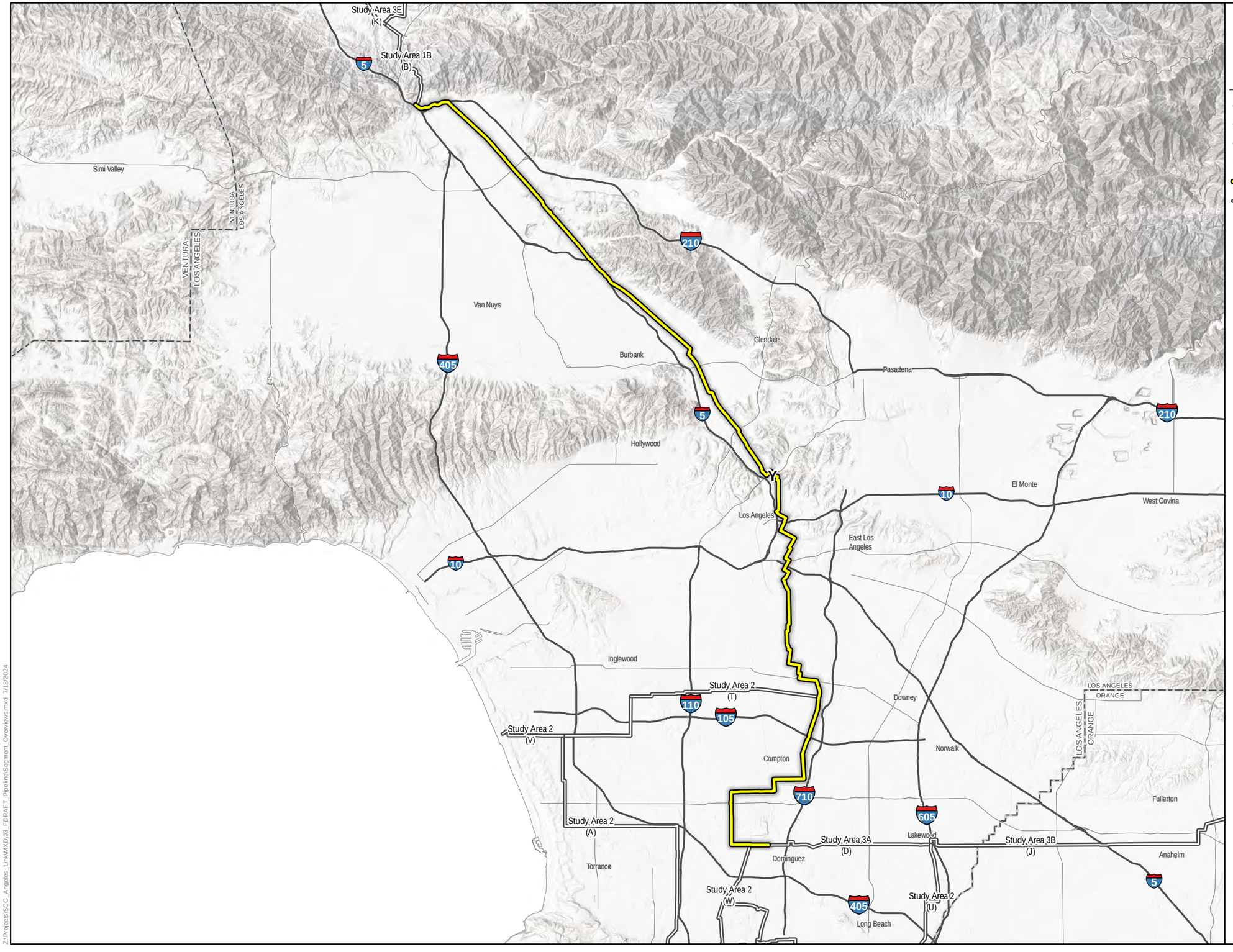
3.9.1.1 Summary of Potential Impacts

Segment Y within this study area is preliminary, and the actual routing, engineering, and design of the Evaluated Segments, and construction methods for the segment has not been determined; therefore, the impacts to existing resources cannot be quantified at

this time. Further, the segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of Segment Y and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.9-2: Study Area 3F Potential Impact Summary summarizes the potential impacts identified for the segment within Study Area 3F.

Figure 3.9-1: Study Area 3F Overview Map

Angeles Link Phase 1 Environmental Analysis



Segment

- Interstate
- State Highway
- County Boundary
- Segment: Y
- Adjacent/Other Study Area Visible

SoCalGas

INSIGNIA ENVIRONMENTAL

1:264,000

0 4.5 9 Miles

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Table 3.9-2: Study Area 3F Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of the segment
Biological Resources	• Potential impacts to species and habitat during construction and O&M of the segment • Potential impacts to wetlands during construction and O&M of the segment • Potential impacts to wildlife movement and migration corridors during construction and O&M of the segment
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of the segment • Potential to change the significance of an archaeological resource during construction and O&M of the segment • Potential to disturb human remains during construction and O&M of the segment • Potential to change the significance of a TCR during construction and O&M of the segment
Energy	• Potential impacts to existing energy resources during construction of the segment • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of the segment
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of the segment • Potential for a foreseeable upset or accident conditions during construction and O&M of the segment • Potential impacts to schools in close proximity to pipeline construction and O&M of the segment • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for the segment • Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of the segment • Potential to contribute to wildland fires during construction and O&M of the segment

Environmental Factor	Potential Impact
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of the segment • Potential impacts to ground water quality and/or depletion during construction and O&M of the segment • Potential impacts to floodplains during construction and O&M for the segment
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M of the segment

3.9.2 Air Quality and Greenhouse Gas Emissions

3.9.2.1 Existing Conditions

Section 3.9.1 Study Area 3F Description provides a description of the segment and the cities and counties that would be crossed by Segment Y. Study Area 3B includes Segment Y.

As depicted in Attachment A: Air Basins and Air Districts Maps, Segment Y is located in the SCAB, under the jurisdiction of the SCAQMD. The local topography and climate result in a high potential for air pollution in the SCAB. During the summer months, it is common for a warm air mass to descend over the cool, moist marine layer. The warm upper layer caps the marine layer and prevents pollutants from dispersing upward. The SCAB has an arid climate and receives abundant sunshine and little rainfall.

Attainment Status

Table 3.9-3: Study Area 3F Attainment Status summarizes the current attainment status for the criteria air pollutants with the CAAQS and NAAQS within Study Area 3F.

Table 3.9-3: Study Area 3F Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
SCAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Nonattainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segment.
Source: CARB 2023

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are

further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Air Quality

South Coast Air Quality Management District

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace their current CEQA Air Quality Handbook that was approved in 1993. Their current handbook provides guidance on how to evaluate a project's potential to impact air quality. The SCAQMD released updated air quality significance thresholds in March 2023 for criteria air pollutants to address the U.S. EPA's redesignation of the Coachella Valley to extreme non-attainment for the 2008 O_3 NAAQS. These thresholds are presented in Table 3.9-4: SCAQMD Criteria Air Pollutant Thresholds for Study Area 3F. The SCAQMD also requires the implementation of their Localized Significance Thresholds for projects within the district to evaluate potential impacts to sensitive receptors (SCAQMD 2023a).

Table 3.9-4: SCAQMD Criteria Air Pollutant Thresholds for Study Area 3F

Criteria Air Pollutant	Daily Construction Emissions (Pounds)	Daily Operation Emissions (Pounds)
NO_X	100	100
VOC	75	75
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
CO	550	550
Lead	3	3

Source: SCAQMD 2023a

Greenhouse Gases

South Coast Air Quality Management District

SCAQMD staff are convening an ongoing GHG working group to determine appropriate significance thresholds for project emissions. On December 5, 2008, the SCAQMD Governing Board adopted interim GHG significance threshold for projects and provided draft guidance to assist with these determinations (SCAQMD 2023b). For industrial projects, the SCAQMD considers any project with emissions in excess of 10,000 metric

tons of CO_2e emissions, including construction emissions amortized over 30 years and added to the operational GHG emissions, to be potentially significant.

3.9.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segment Y, if built, within Study Area 3F are summarized in Table 3.9-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 3F.

Table 3.9-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 3F

Potential Impact	Project Phase	Segment Y
Air Quality	Construction	Potential Impact
	O&M	Potential Impact
GHGs	Construction	Potential Impact
	O&M	Potential Impact

Air Quality

As noted in Table 3.9-1: Jurisdictions Crossed by Study Area 3F, the segment associated with Study Area 3 would be in areas currently classified as nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.9.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are summarized in Section 3.9.2.3 Potential Avoidance and/or Minimization Measures.

3.9.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 3F and all AMMs are also applicable to this study area.

3.9.3 Biological Resources

3.9.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segment Y. Biological resources in Study Area 3F are under the jurisdiction of the CDFW and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 3F, potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segment within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that seven vegetation communities would be present within the Study Area 3F segment. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Urban habitat is the predominant habitat present within a 200-foot-wide corridor centered on Segment Y. The habitats and approximate area of each habitat that would be within the segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segment Y within Study Area 3F would not cross any riparian habitat or sensitive natural communities that would likely be classified as a sensitive natural community within California. Riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segment in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment Y would cross 11 potentially jurisdictional features. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.9.7.1 Existing Conditions, wetland habitats may be present along these jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code

Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, eight protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segment Y. No protected plant species were identified to have a likely potential to occur within 0.25 mile of Segment Y. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near the segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

No protected plant species were identified to have a likely potential to occur within 0.25 mile of Segment Y.

Protected Wildlife

As detailed in Table 3.9-6: Protected Wildlife Species Likely to Occur in Study Area 3F, eight protected wildlife species would be likely to occur within portions of Segment Y and/or within 0.25 mile of the segment centerline. No CNDDB records of protected wildlife species were identified within 0.25 mile of the segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within the segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), no USFWS-designated critical habitat for any species is present within the 200-foot-wide corridor centered on Segment Y.

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segment Y would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 3F.

Table 3.9-6: Protected Wildlife Species Likely to Occur in Study Area 3F

Segment	Species Common Name	Listing Status[174]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [175]
Amphibians and Reptiles				
Y	Arroyo toad	FE	<0.1	0.2
	California red-legged frog	FT	0.5	1.9
	Western pond turtle[176]	FPT	0.5	1.9
	Western spadefoot	FPT	<0.1	1.1
Birds				
Y	Tricolored blackbird	ST	0.0	0.2
	White-tailed kite	FP	99.7	97.3
Invertebrates				
Y	Crotch bumble bee	SC	0.0	0.1
	Palos Verdes blue butterfly	FE	0.0	1.1

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segment Y would not be located within any BLM-designated ACECs in Study Area 3F.

[174] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered
- FPT: Federally proposed as threatened
- FT: Federally listed as threatened

State listing codes:
- SC: State candidate for listing
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[175] The buffer includes 0.25 mile on either side of the segment centerline.

[176] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segment Y would not be located within the plan area of any NCCP or HCP in Study Area 3F.

Furthermore, the centerline of Segment Y would not be located within 0.25 mile of any CDFW-managed lands or conservation easements in Study Area 3F. The Special Land Use Designations subsection of Section 3.9.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segment Y would not cross any waterbodies in Study Area 3F that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.9-7: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity for Study Area 3F. The segments within Study Area 3F would generally traverse the lowest connectivity rank.

Table 3.9-7: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity for Study Area 3F

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
Y	47.5	0	0	1.1	0

Source: CDFW 2019

3.9.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3F are summarized in Table 3.9-8: Biological Resources Potential Impacts for Study Area 3F.

Table 3.9-8: Biological Resources Potential Impacts for Study Area 3F

Potential Impact	Project Phase	Segment Y
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians and reptiles, birds, and invertebrates; mortality or injury of protected species.
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	No Impact
	O&M	No Impact
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	No Impact
	O&M	No Impact

Protected Species and Their Habitat

Impacts to Protected Amphibian and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 3F.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.9.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected avian species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 3F.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.9.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Invertebrate Species

Typical construction and O&M activities could have the potential to impact protected invertebrate species that may occur within construction areas. Impacts, as previously described in Study Area 2 Section 3.3.3.2 Impact Discussion in the Impacts to Protected Invertebrate Species subsection, would not differ within Study Area 3F with the exception of impacts to Crotch bumble bee. Construction activities may crush or destroy foraging resources of this species resulting in a reduction in food sources. This reduction in food resources could result in reduced fecundity and survivorship. Construction activities could disturb or destroy nesting resources consisting of bare ground, rodent burrows, leaf litter, and other areas that could support bee colonies. Impacts to these areas could result in death or injury of bees.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.9.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Segment Y within Study Area 3F would not cross existing habitat that would likely be classified as a sensitive natural community within California. Therefore, construction and O&M activities would not have the potential to result in impacts to riparian habitat or other sensitive natural communities within construction areas.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 3F.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.9.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities would not conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans.

3.9.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.3-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 2. The impacts would not differ within Study Area 3F with the exception of AMMs detailed in Table 3.9-9: Biological Resources Potential Avoidance and Minimization Measures for Study Area 3F to avoid and minimize impacts to protected plant and invertebrate species.

Table 3.9-9: Biological Resources Potential Avoidance and Minimization Measures for Study Area 3F

Potential Impact	Potential Avoidance and Minimization Measures
Damage or loss of bee nesting areas.	• Pre-construction bee surveys could be conducted. • Impacts to nesting areas of bees could be avoided and minimized.

3.9.4 Cultural Resources and Tribal Cultural Resources

3.9.4.1 Existing Conditions

A total of 267 previously documented resources have been identified within the 0.25-mile buffer of Study Area 3F, as detailed in Table 3.9-10: Existing Cultural Resources in Study Area 3F. Of these resources, 52 are within a 200-foot-wide pipeline corridor (comprising 100 feet on either side of the segment centerline). Segment Y would cross through major cities such as San Fernando, Burbank, Los Angeles, and Lynwood as well as cross major highways such as I-110, U.S. Route 101, I-10, SR-60, I-105, and SR-91.

Table 3.9-10: Existing Cultural Resources in Study Area 3F

Segment	Relationship to Segment	Total Identified Resources
Y	Within[177]	52
	0.25 mile	215

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 3F was not available. Until further information can be acquired, all of the 52 cultural resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.9.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segment Y, if built, within Study Area 3F are summarized in Table 3.9-11: Cultural and Tribal Resources Potential Impacts. All known eligible and unevaluated resources within Study Area 3F were analyzed to determine if Segment Y could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 3F that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary route for Segment Y, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.9.4.3 Potential Avoidance and/or Minimization Measures.

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources

[177] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

subsection. Constructions and O&M activities would have the potential for direct impacts to historical resources identified within Segment Y in this study area.

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.9.4.3 Potential Avoidance and/or Minimization Measures.

Table 3.9-11: Cultural and Tribal Resources Potential Impacts for Study Area 3F

Potential Impact	Project Phase	Segment Y
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for all segments in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Constructions and O&M activities would have the potential for direct impacts to human remains for all segments in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Constructions and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during Assembly Bill 52 consultation with tribes.

3.9.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where

available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.9.5 Energy

3.9.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within Los Angeles County that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 3F.

Existing Local Energy Use

Electricity

County of Los Angeles

Within Study Area 3F in Los Angeles County, SCE is the primary provider of electricity (SCE 2023). Additional information about SCE's programs and RPS requirements is included in Study Area 1B Section 3.2.5.1 Existing Conditions in the Existing Local Energy Use subsection. As detailed in Table 3.9-12: Electricity Consumption in 2022 for Counties Crossed by Study Area 3F, approximately 68 billion kWh of electricity were consumed in Los Angeles County in 2022.

Table 3.9-12: Electricity Consumption in 2022 for Counties Crossed by Study Area 3F

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	23,255.5	45,229.5	**68,485.0**

Source: CEC 2022a

City of Los Angeles

Within Study Area 3F in the City of Los Angeles, the LADWP is the primary provider of electricity (LADWP 2020). Additional information about LADWP's renewable electricity sources and usage is included in Study Area 1B Section 3.2.5.1 Existing Conditions in the City of Los Angeles subsection.

Natural Gas

Within Study Area 3F, SoCalGas provides natural gas service (SoCalGas 2024). As detailed in Table 3.9-13: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 3F, approximately three billion therms[178] of natural gas were consumed in Los Angeles County in 2022.

[178] One therm is equal to 100,000 Btu, or 100 kBtu.

Table 3.9-13: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 3F

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Los Angeles County	1,122.3	1,698.0	**2,820.3**

Source: CEC 2022a

Diesel and Gasoline

Within Study Area 3F, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

As detailed in Table 3.9-14: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3F, approximately three billion gasoline fuel sales and 295 million diesel fuel sales were estimated in Los Angeles County in 2022.

Table 3.9-14: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 3F

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Los Angeles County	3,070	295

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Solar Resource Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other (CEC 2024). According to the Solar Resources dataset from

the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, the majority of Study Area 3F overlaps the Los Angeles Metro Solar Resource Area.

Los Angeles County

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Los Angeles County subsection, sites identified for potential renewable energy generation are listed in the REMP (County of Los Angeles 2020). Segment Y within Study Area 3F would not overlap any approved or in-progress PV solar-generation facilities within Los Angeles County (CEC 2023c).

3.9.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 3F are summarized in Table 3.9-15: Study Area 3F Potential Energy Impacts.

Table 3.9-15: Study Area 3F Potential Energy Impacts

Potential Impact	Project Phase	Segment Y
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact
	O&M	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact
	O&M	No Impact

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.5.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.5.3 Potential Avoidance and/or Minimization Measures.

3.9.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.9.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

3.9.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 3F.

3.9.6.1 Existing Conditions

Section 3.9.1 Study Area 3F Description provides a description of the segment, as well as the counties and cities through which the segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 3F are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed approximately 125 open cases and 427 closed hazardous materials cases within 1,000 feet of Segment Y. Open hazardous materials sites are detailed in Table 3.9-16: Open Hazardous Materials Sites within 1,000 feet of Study Area 3F.

Fire Hazards

CAL FIRE FHSZs would be crossed by Study Area 3F. Approximately 2.6 miles of Segment Y would be located within a Very High FHSZ within an LRA. Segment Y would not be located within any FHSZ within an SRA. These areas are recognized by the Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency.

Schools and Day-Care Centers

Schools and day-care centers within 0.5 mile of Study Area 3F are presented in Table 3.9-17: Schools and Day-Care Centers within 0.5 Mile of Study Area 3F.

Airports

Three airports are located within two miles of Segment Y. The Hollywood Burbank Bob Hope Airport, Compton/Woodly Airport, and Whiteman Airport are located within two miles of Segment Y. Segment Y is not located within Planning Boundaries/Areas of Influence designated for these airports.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segment Y in Study Area 3F is managed by the following plans:

- County of Los Angeles OAEOP (County of Los Angeles 2023) and
- 2020 County of Los Angeles AHMP (County of Los Angeles 2020).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

Table 3.9-16: Open Hazardous Materials Sites within 1,000 feet of Study Area 3F

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
GeoTracker Sites				
Lynwood Dairy	Y	21	Soil	Open - Remediation
Huntington Dairy Arco	Y	29	Other Groundwater (uses other than drinking water), Soil	Open - Eligible for Closure
Ahr Signs, Inc.	Y	29	Not Specified	Open - Site Assessment
United Station #39	Y	33	Aquifer used for drinking water supply	Open - Remediation
Arco #6169	Y	36	Aquifer used for drinking water supply	Open - Remediation
Serkis Arco	Y	37	Other Groundwater (uses other than drinking water)	Open - Remediation
7 Days Food Store	Y	39	Aquifer used for drinking water supply	Open - Remediation
Former Southern California Plating Company	Y	39	Aquifer used for drinking water supply, Soil	Open - Site Assessment
Grayson Power Plant	Y	66	Not Specified	Open - Site Assessment
Barkens Hard Chrome Inc.	Y	73	Aquifer used for drinking water supply, Other Groundwater (uses	Open - Site Assessment

[179] Distances were calculated based on the approximate center point coordinates provided by GeoTracker and EnviroStor. Depending on the actual property boundaries of each hazardous materials site and/or facility, these sites may be closer than specified.

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
			other than drinking water), Sediments, Soil, Under Investigation	
Sfpp, L.P. Watson Station	Y	75	Other Groundwater (uses other than drinking water), Soil	Open - Site Assessment
Chromal Plating & Grinding Co.	Y	83	Other Groundwater (uses other than drinking water), Soil	Open - Site Assessment
Former Soco-Lynch Corp	Y	86	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Inactive
Bechler Trust Property	Y	102	Aquifer used for drinking water supply	Open - Assessment & Interim Remedial Action
Lubricating Specialties	Y	106	Not Specified	Pending Review
Fueling Station Brock Bus Line	Y	110	Aquifer used for drinking water supply	Open - Inactive
Courtaulds Aerospace	Y	111	Aquifer used for drinking water supply	Open - Remediation
Mondo Chrome Facility (Former)	Y	116	Other Groundwater (uses other than drinking water), Soil Vapor	Open - Site Assessment
Former Aerol Co.	Y	135	Aquifer used for drinking water supply	Open - Remediation
Former Infinity Outdoor Facility	Y	142	Not Specified	Open - Site Assessment

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
Marrs Fabulous Cleaners	Y	148	Soil Vapor	Open - Site Assessment
Newlowe Properties	Y	164	Aquifer used for drinking water supply	Open - Remediation
Former U.S. Flare Corporation - 12154 Montague Street (Mole Richardson Company - Rexford)	Y	164	Not Specified	Open - Eligible for Closure
Alloy Processing	Y	174	Not Specified	Pending Review
Yolandas Plating	Y	191	Not Specified	Pending Review
Morton Int'l Whittaker Corp.	Y	204	Aquifer used for drinking water supply	Open - Inactive
Excello Plating Co., Inc	Y	213	Aquifer used for drinking water supply	Open - Remediation
Bronze-Way Plating Facility	Y	244	Soil, Soil Vapor	Open - Site Assessment
Former U.S. Flare Corporation - 12200 Montague Street (Phyllis Brown Trust)	Y	261	Not Specified	Open - Eligible for Closure
Lacy Street Productions	Y	321	Soil, Soil Vapor	Open - Site Assessment
Ponam Ltd, Inc	Y	325	Not Specified	Pending Review
Franciscan Ceramics	Y	326	Not Specified	Open - Inactive

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
Former U.S. Flare Corporation - 12224 Montague Street (Lichstein)	Y	334	Not Specified	Open - Site Assessment
Sun Valley Landfill	Y	339	Not Specified	Open - Operating
Domar Precision Inc	Y	352	Not Specified	Pending Review
Interstate Brands Corporation	Y	368	Aquifer used for drinking water supply	Open - Remediation
Wontronics/Hi Electronics	Y	382	Not Specified	Open - Site Assessment
10130 Adella LLC	Y	383	Soil	Open - Eligible for Closure
Gene's Plating Works	Y	385	Not Specified	Pending Review
Jervis B Webb Co	Y	385	Not Specified	Open - Site Assessment
Bco - Universal Cast Iron	Y	402	Not Specified	Open - Site Assessment
Stainless Steel Products Inc.	Y	408	Aquifer used for drinking water supply	Open - Site Assessment
Jesse's Plating (Former Hvc)	Y	417	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Site Assessment
Former U.S. Flare Corporation - 12109-12115 Branford St (Branford	Y	427	Not Specified	Open - Site Assessment

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
Investments LLC)				
Evonik Corporation - La (East)	Y	433	Not Specified	SWT - No Plan Returned[180]
Shell - Carson Terminal	Y	453	Aquifer used for drinking water supply, Soil	Open - Remediation
Keyston Brothers	Y	460	Not Specified	Open - Eligible for Closure
General Inspection Laboratories	Y	462	Not Specified	Open - Inactive
Ippolito Family Properties, LLC	Y	473	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Site Assessment
Los Angeles River Improvement Project	Y	511	Not Specified	Open - Inactive
Bradley Landfill & Recycling (Valley Reclamation - L.A. By-Products Pit 2)	Y	537	Not Specified	Open - Closed/with Monitoring

[180] SWTs are underground storage tanks. These tanks are required to be closed pursuant to Health and Safety Code Section 25292.05, which requires closure of these sites by December 31, 2025. Local permitting agencies (Certified Unified Program Agencies) or the SWRCB oversee compliance (SWRCB 2024). The SWTs are no longer updated in GeoTracker, and their status should be checked in Cal EPA's California Environmental Reporting System during future environmental review (Cal EPA 2024).

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
Los Angeles Chemical Company	Y	597	Not Specified	Open - Inactive
South City Gas, Dba Cudahy Fuel Stop	Y	614	Not Specified	SWT-No Plan Returned[180]
Ford Leasing Development Company (Former Zero Corp)	Y	624	Soil, Soil Vapor	Open - Remediation
Metal Finishing Marketers Inc	Y	635	Not Specified	Pending Review
Alpha Medical Resources; Cinema Set Decorating; Me	Y	645	Aquifer used for drinking water supply	Open - Inactive
Lockheed Plant B1	Y	675	Aquifer used for drinking water supply	Open - Assessment & Interim Remedial Action
Southern San Fernando Basin Well Fields Remediation Planning Project	Y	690	Not Specified	Open - Active
Alcazar Maintenance Yard	Y	708	Aquifer used for drinking water supply, Soil	Open - Inactive
Carson Ii Industrial Property	Y	739	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Remediation
Avco Company	Y	780	Not Specified	Open - Inactive
Hollywood Burbank Airport	Y	781	Aquifer used for drinking water	Open - Site Assessment

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
Replacement Terminal			supply, Contaminated Surface / Structure, Indoor Air, Soil, Soil Vapor	
Winall #1	Y	788	Other Groundwater (uses other than drinking water), Soil	Open - Remediation
EnviroStor Sites				
Superior Plating	Y	17	Not Specified	Inactive - Needs Evaluation
Lnl Anodizing	Y	32	Not Specified	Inactive - Needs Evaluation
Profile Plastics	Y	72	Not Specified	Refer: RWQCB[181]
Ledger Landfill	Y	78	Not Specified	Inactive - Needs Evaluation
Alert Plating	Y	87	Not Specified	Refer: RWQCB
Huntington Park City Dump	Y	100	Not Specified	Refer: RWQCB
Green's Cleaners	Y	130	Other Groundwater (uses other than drinking water), Soil, Soil Vapor, Indoor Air	Active
Former Soco-Lynch Corp. Facility/Former Western Chemical & Manufacturing Company	Y	183	Other Groundwater (uses other than drinking water), Under Investigation	Active

[181] Sites with a "Refer" in their status are being managed by other agencies besides those more directly related to GeoTracker and EnviroStor.

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
Dameron Alloy Foundries	Y	206	Soil	Refer: 1248 Local Agency
Armoloy Of Southern California	Y	210	Not Specified	Refer: RCRA
L N L Anodizing	Y	213	Not Specified	Inactive - Needs Evaluation
Former Jesse's Plating	Y	225	Soil, Soil Vapor	Inactive - Needs Evaluation
Superior Chrome Plating Co.	Y	240	Not Specified	Refer: Other Agency
Pro-Circuits	Y	266	Not Specified	Refer: Other Agency
Sunland Chemical	Y	282	Other Groundwater (uses other than drinking water), Soil, Soil Vapor, Under Investigation	Active
South Gate Middle School No. 2	Y	289	Not Specified	Inactive - Needs Evaluation
Arcadia, Inc.	Y	301	Not Specified	Refer: Other Agency
Drilube Company	Y	301	Not Specified	Refer: RWQCB
Chem-Tech Systems, Inc	Y	303	Not Specified	Refer: RCRA
Bechler Trust	Y	320	Not Specified	Refer: 1248 Local Agency
Glendale Public Services Department	Y	327	Not Specified	Refer: Other Agency
Hickey Pipe And Supply Co.	Y	333	Not Specified	Refer: Other Agency

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
(Hickey Properties)				
John Deere	Y	334	Not Specified	Refer: Other Agency
Kennington	Y	346	Other Groundwater (uses other than drinking water), Soil	Active
Macdermid Inc	Y	395	Not Specified	Active
Electromatic, Inc. - Los Angeles	Y	412	Not Specified	Refer: Other Agency
South Bay Plating	Y	437	Not Specified	Refer: RCRA
Grover Products Company	Y	437	Not Specified	Refer: Other Agency
South Gate New Elem Sch No. 7A-Park Site	Y	446	Not Specified	Inactive - Needs Evaluation
Rheem Manufacturing Co.	Y	447	Not Specified	Inactive - Needs Evaluation
Usar Huntington Park	Y	451	Not Specified	Inactive - Needs Evaluation
Integral Partners Funding Site (Former Hellman Property)	Y	462	Soil, Soil Vapor	Active
Central Region High School #15	Y	473	Soil	Inactive - Needs Evaluation
Industrial Metal Plating	Y	495	Soil	Refer: EPA
Avenue 34	Y	514	Under Investigation	Active
Los Feliz Charter School For The Arts	Y	518	Under Investigation	Inactive - Needs Evaluation

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
Morton International Whittaker Corporation	Y	520	Other Groundwater (uses other than drinking water), Soil, Soil Vapor	Active
American Racing Equip, Inc. #1	Y	542	Not Specified	Refer: Other Agency
American Racing Equip, Inc. #2	Y	542	Not Specified	Refer: Other Agency
Hr Textron	Y	566	Not Specified	Inactive - Needs Evaluation
Pdq Auto Salvage	Y	569	Not Specified	Inactive - Needs Evaluation
Loreto Street Elementary School Addition	Y	574	NMA	Inactive - Withdrawn
Tam Ceramics, Inc.	Y	576	Not Specified	Refer: Other Agency
Truesdale Center - La Dwp	Y	596	Soil, Soil Vapor, Soil, Soil, Soil	Active
Electro Sheen Industries, Inc.	Y	609	Not Specified	Refer: Other Agency
Compton Foundry	Y	615	Soil	Inactive - Needs Evaluation
La River Impr Sec Vli	Y	664	Not Specified	Inactive - Needs Evaluation
Grover Products Co.	Y	691	Under Investigation	Active
Central Region Middle School #9, Site 26	Y	692	Soil, Soil Vapor	Inactive - Needs Evaluation
Dip Braze, Inc.	Y	799	Not Specified	Refer: Other Agency
Nsc Long Bch	Y	815	Not Specified	Inactive - Needs Evaluation

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[179] (feet)	Media Affected	Regulatory Status
Welch's Uniform Facility (Former)	Y	849	Other Groundwater (uses other than drinking water), Soil, Soil Vapor	Active
Cal Pac Chemical Co Inc	Y	852	Soil	Active
Filtrol Corp.	Y	857	Not Specified	Refer: Other Agency
Taylor Yard - Parcel G1	Y	872	Soil, Under Investigation, Contaminated Surface/Structure, Soil	Active
Cal Pac Chemical Co Inc	Y	914	Not Specified	Active
Thermal Technologies	Y	918	Not Specified	Refer: EPA
Ultramet	Y	924	Soil	Inactive - Action Required
La Dist Maint Yard	Y	937	Not Specified	Inactive - Needs Evaluation
Former Turbo Products	Y	949	Not Specified	Refer: EPA
Seam Master Industries (Saia)	Y	988	Contaminated Surface/Structure, Indoor Air, Soil, Soil Vapor	Active
Nelson Name Plate Co	Y	998	Not Specified	Refer: RWQCB

Sources: DTSC 2024 and SWRCB 2024

Table 3.9-17: Schools and Day-Care Centers within 0.5 Mile of Study Area 3F

Segment	Schools	Day-Care Centers
Y	159	133

Source: U.S. Department of Homeland Security 2024

3.9.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segment within Study Area 3F are summarized in Table 3.9-18: Study Area 3F Potential Impacts.

Table 3.9-18: Study Area 3F Potential Impacts

Potential Impact	Project Phase	Segment Y
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact
	O&M	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact
	O&M	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	Potential Impact
	O&M	Potential Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	Potential Impact
	O&M	Potential Impact
Public Airport and/or Private Airstrip Hazards	Construction	No Impact
	O&M	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact
	O&M	Potential Impact
Wildland Fires	Construction	Potential Impact
	O&M	Potential Impact

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Based on the resources present in this study area, construction and O&M activities could have a potential for temporary or permanent impact to the public or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.9.6.3 Potential Avoidance and/or Minimization Measures.

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities could have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.9.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Hazardous Substances in Close Proximity to Schools subsection. A total of 159 schools and 133 day-care centers are located within 0.5 mile of where Segment Y would be located. Construction and O&M activities could have a potential for a hazardous emission or impacts resulting from handling hazardous materials within 0.5 mile of a school. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.9.6.3 Potential Avoidance and/or Minimization Measures.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Existing Hazardous Materials Sites Listed in Government Code Section 65962.5 subsection.

Based on the 125 open cases identified within 1,000 feet of the segment within Study Area 3F, temporary or permanent impacts may occur due to existing subsurface contamination that may be present during construction or O&M. As a result, construction and O&M activities could have a potential for existing hazardous materials sites to create a significant hazard to the public or the environment. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.9.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

As previously discussed, Segment Y would be located within two miles of the Hollywood Burbank Bob Hope Airport, Compton/Woodly Airport, and Whiteman Airport, but the portion of Segment Y would not be within the planning boundary/Area of Influence designated for those airports. Therefore, no safety concerns would be anticipated from construction or O&M activities.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.9.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

Typical impacts and wildfire prevention practices that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Wildland Fires subsection. As previously discussed, approximately 2.6 miles of Segment Y would be located within the CAL FIRE Very High FHSZ within an LRA. High heat or sparks from vehicles or equipment would have the potential to ignite dry vegetation and cause fires. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.9.6.3 Potential Avoidance and/or Minimization Measures.

3.9.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B. The impacts that could be anticipated within Study Area 3F would not be expected to differ from those identified within Study Areas 1A and 1B.

3.9.7 Hydrology and Water Quality

3.9.7.1 Existing Conditions

Segment Y is located in RWQCB Los Angeles Region 4. Water resources in these areas are also under the jurisdiction of CDFW South Coast Region 5 and USACE Los Angeles District.

The following subsections discuss hydrological resource existing conditions in Study Area 3F; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for the pipeline segment within this study area.

Surface Waters

Study Area 3F would cross two USGS watersheds (USGS 2023a). Segment Y would cross the Lower Los Angeles River and Upper Los Angeles River watersheds.

Based on the review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Segment Y would cross four unnamed waterbodies and seven named waterbodies. A list of all named waterbodies crossed by the Study Area are included in Table 3.9-19: Named Waterbodies Crossed by Study Area 3F. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- five artificial waterways,
- one canal/ditch,
- one connector between waterways, and
- four streams/rivers.

Table 3.9-19: Named Waterbodies Crossed by Study Area 3F

Waterbody Name	Segment Crossed	Waterbody Classification
Arroyo Seco	Y	Artificial waterway
Compton Creek	Y	Artificial waterway
Los Angeles River	Y	Artificial waterway
Pacoima Wash	Y	Stream/river
Second Los Angeles Aqueduct	Y	Connector between waterways
Tujunga Wash	Y	Artificial waterway
Verdugo Wash	Y	Artificial waterway

Source: USGS 2023b

Impaired Surface Waters

As indicated by a review of the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2023a), six impaired water bodies would be crossed by Segment Y, as listed

in Table 3.9-20: Impaired Waterbodies Crossed by Study Area 3F. Details regarding the pollutants that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b). The listings associated with the waterbodies specify that ammonia, copper, indicator bacteria, trash, cyanide, lead, selenium, nutrients, oil, and zinc are the pollutants causing a lack of attainment of water quality standards for certain waterbodies within the study area and identify nonpoint sources, surface runoff, urban runoff, natural sources as the sources of the pollutant.

Table 3.9-20: Impaired Waterbodies Crossed by Study Area 3F

Waterbody Name[182]	RWQCB Jurisdiction	Pollutant
Tujunga Wash (LA River to Hansen Dam)	Regional Board 4 – Los Angeles	Ammonia, copper, indicator bacteria, trash
Burbank Western Channel	Regional Board 4 – Los Angeles	Copper, cyanide, indicator bacteria, lead, selenium, trash
Verdugo Wash Reach 1 (LA River to Verdugo Road)	Regional Board 4 – Los Angeles	Copper, indicator bacteria, trash
Arroyo Seco Reach 1 (LA River to West Holly Avenue)	Regional Board 4 – Los Angeles	Indicator bacteria, trash
Los Angeles River Reach 2 (Carson to Figueroa Street)	Regional Board 4 – Los Angeles	Ammonia, copper, indicator bacteria, lead, nutrients, oil, trash
Compton Creek	Regional Board 4 – Los Angeles	Indicator bacteria, trash, zinc

Source: SWRCB 2022a

Floodplains

As indicated by a review of the FEMA Flood Hazard Layer (FEMA 2023), Study Area 3F would cross several floodplains, including the 500-year and 100-year-floodplains. Floodplains that would be crossed by the segments within the study area are depicted in Attachment E: Hydrological Maps.

Groundwater

The study area would cross three groundwater basins (DWR 2022a). Segment Y would cross the San Fernando Valley, Coastal Plain of Los Angeles-Central, and Coastal Plain

[182] Waterbody names of impaired waterbodies are based on data from the SWRCB California 2020-2022 Integrated Report and may differ from waterbody names included in Table 3.9-19: Named Waterbodies Crossed by Study Area 3F, which are taken from USGS NHD data.

of Los Angeles-West Coast groundwater basins. Floodplains that would be crossed by the segments within this study area are shown in Attachment E: Hydrological Maps.

Publicly available monitoring well data from DWR (DWR 2022b) was reviewed to estimate existing depths to groundwater. Groundwater readings from 11 monitoring wells located within two miles of the study area were reviewed, as listed in Table 3.9-21: Groundwater Readings within Two Miles of Study Area 3F. The 2022 groundwater-depth readings at these monitoring wells range from 13.6 feet bgs to 330.6 bgs. Groundwater levels within Study Area 3F are expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

Table 3.9-21: Groundwater Readings within Two Miles of Study Area 3F

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
Y	11	13.6	330.6

Source: DWR 2022b

3.9.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segment Y are detailed in Table 3.9-22: Study Area 3F Potential Impacts.

Table 3.9-22: Study Area 3F Potential Impacts

Potential Impact	Project Phase	Segment Y
Water Quality Degradation	Construction	Potential Impact
	O&M	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact
	O&M	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact
	O&M	Potential Impact

Surface Waters

As detailed in Section 3.9.7.1 Existing Conditions in the Surface Waters subsection, Segment Y would cross four unnamed waterbodies and seven named waterbodies including six impaired waterbodies as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for segments that would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.9.7.3 Potential Avoidance and/or Minimization Measures.

Floodplains

Segment Y would be installed within and across the floodplains that are detailed in Section 3.9.7.1 Existing Conditions in the Floodplains subsection. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross floodplains. Construction and O&M activities would likely not cause permanent impacts related to floodplains. Potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.9.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 3F, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.9.7.3 Potential Avoidance and/or Minimization Measures.

3.9.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segment Y. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 3F and could be implemented to avoid or reduce potential impacts to segments within this study area.

3.9.8 Land Use and Planning

3.9.8.1 Existing Conditions

Section 3.9.1 Study Area 3F Description contains a description of Segment Y and Table 3.9-1: Jurisdictions Crossed by Study Area 3F details the distance the segment would traverse each local jurisdiction within Study Area 3F.

Land Use

Most of Segment Y would travel along public roads within urban areas through several cities within the County of Los Angeles.

Surrounding land uses would include mostly residential areas with commercial, industrial, and mixed use areas and parks interspersed. Larger industrial areas would occur within the cities of Vernon, Compton, and Carson.

General plan land use designations that would be crossed by Segment Y within each jurisdiction within Study Area 3F are detailed in Table 3.9-23: General Plan Land Use Designations Crossed by Study Area 3F.[183]

Special Land Use Designations

As described in the following subsections and detailed in Table 3.9-24: Agency-Managed and Protected Lands Crossed by Study Area 3F, Table 3.9-25: Linear Infrastructure and Protected Trails Crossed by Study Area 3F, and Attachment F-1: Special Land Use Designations Maps, Segment Y would cross lands managed by federal, state, and local agencies. Section 3.9.3 Biological Resources contains a discussion of HCP/NCCP boundaries that the segments would cross within Study Area 3F. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Lands Managed by Federal Agencies

Segment Y would cross the Old Spanish National Historic Trail on North Cumming Street in the City of Los Angeles. The trail is jointly managed by the BLM and NPS. The BLM's Utah State Director leads the BLM's co-administration effort and the National Trails office for Regions 6, 7, and 8 leads the NPS co-administration effort. The Old Spanish National Historic Trail Comprehensive Administrative Strategy outlines the operating procedures for planning, development, and administration of the trail (BLM and NPS 2017).

[183] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.9-23: General Plan Land Use Designations Crossed by Study Area 3F

Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[184] (acres)
City of Bell	Low-Density Commercial	N/A[185]	1.3
	Medium-Density Residential	N/A[185]	0.1
	Open Space and Public Lands	N/A[185]	1.4
City of Burbank	High-Density Residential	N/A[185]	5.6
	Low-Density Commercial	N/A[185]	14.5
	Medium-Density Residential	N/A[185]	9.6
	Open Space and Public Lands	N/A[185]	0.7
	Other	N/A[185]	2.3
City of Carson	High-Density Residential	N/A[185]	0.8
	Industrial	0.3	27.1
	Low-Density Commercial	0.4	8.9
	Medium-Density Residential	N/A[185]	8.2
	Mixed Use	N/A[185]	0.2
	Open Space and Public Lands	N/A[185]	1.6
	Other	N/A[185]	0.2
City of Compton	High-Density Residential	N/A[185]	0.1
	Industrial	N/A[185]	6.7
	Low-Density Commercial	N/A[185]	3.3
	Medium-Density Residential	N/A[185]	12.9
	Mixed Use	N/A[185]	8.1
	Open Space and Public Lands	0.5	22.6
	Other	<0.1	1.4

[184] The corridor includes 100 feet on either side of the pipeline.
[185] This is not applicable because the pipeline would not cross the land use designation.

Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[184] (acres)
City of Glendale	High-Density Residential	N/A[185]	1.3
	Industrial	N/A[185]	0.2
	Low-Density Commercial	N/A[185]	25.1
	Medium-Density Residential	N/A[185]	0.1
	Mixed Use	N/A[185]	23.8
	Open Space and Public Lands	N/A[185]	1.1
	Other	N/A[185]	5.3
City of Huntington Park	High-Density Residential	N/A[185]	2.0
	Industrial	N/A[185]	0.3
	Low-density Commercial	N/A[185]	13.5
	Medium-density Residential	N/A[185]	3.2
	Open Space and Public Lands	N/A[185]	4.7
City of Los Angeles	High-density Commercial	N/A[185]	3.5
	High-density Residential	N/A[185]	51.6
	Industrial	0.1	72.6
	Low-Density Commercial	<0.1	48.2
	Medium-Density Residential	N/A[185]	49.7
	Mixed Use	N/A[185]	0.1
	Open Space and Public Lands	0.2	22.2
	Other	<0.1	0.3
City of Lynwood	High-Density Residential	N/A[185]	2.1
	Low-Density Commercial	<0.1	15.7
	Medium-Density Residential	N/A[185]	0.6
	Mixed Use	N/A[185]	0.2
	Open Space and Public Lands	0.1	4.3
	Other	N/A[185]	0.3
City of Maywood	Industrial	N/A[185]	0.6
	Medium-Density Residential	N/A[185]	0.2

Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[184] (acres)
City of San Fernando	High-Density Residential	N/A[185]	2.4
	Industrial	<0.1	4.1
	Low-Density Commercial	N/A[185]	2.2
	Medium-Density Residential	N/A[185]	7.1
	Mixed Use	N/A[185]	0.8
	Other	<0.1	0.5
City of South Gate	High-Density Residential	N/A[185]	5.6
	Industrial	N/A[185]	6.4
	Low-Density Commercial	N/A[185]	0.1
	Medium-Density Residential	<0.1	13.4
	Mixed Use	N/A[185]	11.1
	Open Space and Public Lands	N/A[185]	0.1
City of Vernon	High-Density Residential	N/A[185]	0.1
	Industrial	<0.1	19.8
	Low-Density Commercial	N/A[185]	0.1
	Medium-Density Residential	N/A[185]	2.8
	Other	N/A[185]	<0.1
County of Los Angeles	Industrial	N/A[185]	5.2
	Low-Density Commercial	N/A[185]	7.3
	Medium-Density Residential	N/A[185]	7.2
	Mixed Use	N/A[185]	2.0
	Open Space and Public Lands	N/A[185]	1.1

Source: California Governor's OPR 2024

Table 3.9-24: Agency-Managed and Protected Lands Crossed by Study Area 3F

Agency	Special Land Use	Approximate Length Distance Crossed (miles)	Approximate Area within Corridor[186] (acres)
State			
California State Parks	Rio de Los Angeles State Park	N/A[187]	3.3
Regional			
County of Los Angeles	East Rancho Dominguez Park	N/A[187]	1.0
	Washington Avenue Park	N/A[187]	0.1
MRCA	Los Angeles River Center and Gardens	N/A[187]	1.3
City			
City of Burbank	McCambridge Park and Recreation Center	N/A[187]	0.8
City of Carson	Mills Park	N/A[187]	0.3
City of Compton	Greenleaf Parkway	N/A[187]	1.8
City of Glendale	Cerritos Park	N/A[187]	0.4
	Pelanconi Park	N/A[187]	1.0
City of Huntington Park	Salt Lake Park	N/A[187]	4.9
City of Los Angeles	Arroyo Seco	<0.1	0.3
	Cypress Park Recreation Center	N/A[187]	0.4
	Evergreen Recreation Center	N/A[187]	1.0
	Hansen Dam Golf Course	N/A[187]	4.2
	Ramon Garcia Recreation Center	0.1	2.7
	Southern Avenue Greenway	N/A[187]	0.1

[186] The corridor includes 100 feet on either side of the pipeline.
[187] This is not applicable because the pipeline would not cross the special land use.

Agency	Special Land Use	Approximate Length Distance Crossed (miles)	Approximate Area within Corridor[186] (acres)
City of Lynwood	Senator Lara Linear Park	N/A[187]	0.1
	Yvonne Burke-John D. Ham Park	0.1	3.5
City of Maywood	Benito Juarez Park	N/A[187]	<0.1
City of South Gate	Triangle Park	N/A[187]	0.3

Source: GreenInfo Network 2023

Table 3.9-25: Linear Infrastructure and Protected Trails Crossed by Study Area 3F

Agency	Special Land Use	Number of Times Crossed
Federal		
NPS	Butterfield Overland National Historic Trail	1
	Juan Bautista de Anza National Historic Trail	5
BLM/NPS	Old Spanish National Historic Trail	1
State		
California HSRA	Palmdale-to-Burbank Section	2
	Burbank-to-Los Angeles Section	1
	Los Angeles-to-San Diego Section	8
	Los Angeles-to-Anaheim Section	1
Local		
LADWP	Second Los Angeles Aqueduct	1

Sources: BLM 2023, California Department of Technology 2024, USGS 2023

Segment Y would cross the Butterfield Overland National Historic Trail at the intersection of Sichel Street and Alhambra Road in the City of Los Angeles. The National Trails office for Regions 6, 7, and 8 of the NPS administers the trail. The office does not manage any land but works with partners to help share and protect national historic trails (NPS 2023).

Segment Y would cross the Juan Bautista de Anza National Historic Trail in the following locations in the City of Los Angeles:

- at the intersection of West Milford St and San Fernando Road;
- near the intersection of San Fernando Road and Los Angeles Street;
- near the intersection of San Fernando Road and Pepper Avenue;
- along North Figueroa Street; and
- northwest of the West Avenue 33 and Artesian Street intersection.

The Anza Trail Administrative Office of the NPS administers the trail. The office does not manage any land but works with partners to help maintain, protect, and interpret the trail (NPS 2023b). The 1996 Comprehensive Management and Use Plan (NPS 1996) and the 2023 Foundation Document (NPS 2023a) inform administration and planning decisions for the trail.

Administration of national historic trails adheres to the policies listed in Director's Order #45, Reference Manual 45, and Manual 6250 (NPS 2013, NPS 2019; BLM 2012).

The National Trails System Act of 1968, as amended, governs the activities of the National Trails System, which includes the Old Spanish National Historic Trail, Butterfield Overland National Historic Trail, and the Juan Bautista de Anza National Historic Trail (16 U.S. Code [U.S.C.] § 1241 et seq.).

Lands Managed by State Agencies

The Segment Y corridor would cross Rio de Los Angeles State Park, which is managed by California State Parks. The Rio de Los Angeles State Park General Plan informs the long-range development, management, and operation of the park (California State Parks 2005).

Segment Y would cross the following alternatives for the Palmdale-to-Burbank section of the California High-Speed Rail alignment:

- the preferred alternative, northwest of the intersection of Glenoaks Boulevard and Gain Street in the City of Los Angeles, and
- the non-preferred alternative, northwest of the intersection of Glenoaks Boulevard and Tuxford Street in the City of Los Angeles.

The corridor for Segment Y would cross the preferred alternative for the Burbank-to-Los Angeles section along San Fernando Road between Alma Street to Milford Street in the City of Glendale.

Segment Y would cross the following alternatives for the Los Angeles-to-San Diego section of the California High-Speed Rail in the City of Los Angeles:

- three alternatives near the intersection of North Main Street and Sichel Street in the City of Los Angeles;
- two alternatives near the intersection of Marengo Street and North Mission Road in the City of Los Angeles;
- one alternative along North Cummings Street; and
- two alternatives along SR-60.

Segment Y would cross the preferred alternative for the Los Angeles-to-Anaheim section, north of the intersection of East 26th Street and South Downey Road in the City of Vernon. The California HRSA is responsible for planning, designing, building, and operating the high-speed rail system.

Segment Y would cross state highways managed by Caltrans.

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segment Y would cross the Second Los Angeles Aqueduct along Foothill Boulevard at the intersection with I-210. The aqueduct is managed by the LADWP.

Segment Y or the corridor would cross the following parks and protected areas:

- Hansen Dam Golf Course, Cypress Park Recreation Center, Evergreen Recreation Center, Ramon Garcia Recreation Center, and Southern Avenue Greenway, which are managed by the City of Los Angeles;
- protected area for the Arroyo Seco, which is managed by the City of Los Angeles;
- McCambridge Park and Recreation Center, which is managed by the City of Burbank;
- Pelanconi Park and Cerritos Park, which are managed by the City of Glendale;
- Los Angeles River Center and Gardens, which is managed by the MRCA;
- Salt Lake Park, which is managed by the City of Huntington Park;
- Triangle Park, which is managed by the City of South Gate;
- Senator Lara Linear Park and Yvonne Burke-John D. Ham Park, which are managed by the City of Lynwood;
- East Rancho Dominguez Park and Washington Avenue Park, which are managed by the County of Los Angeles;
- Mills Park, which is managed by the City of Carson;
- Greenleaf Parkway, which managed by the City of Compton; and
- Benito Juarez Park, which is managed by the City of Maywood.

3.9.8.2 Impact Discussion

In addition to potential impacts specifically related to Study Area 3F, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segments to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.9-26: Land Use and Planning Potential Impacts for Study Area 3F.

Table 3.9-26: Land Use and Planning Potential Impacts for Study Area 3F

Potential Impact	Project Phase	Segment Y
Divide a community	Construction	No Impact
	O&M	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact
	O&M	Potential Impact

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

Land Uses

Segment Y could generally follow existing SoCalGas pipeline corridors and/or public roadways; therefore, new temporary or permanent access roads would not likely be needed for these segments. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses. Depending on the location and jurisdiction, any new roads would likely require a new easement, landowner agreement, and/or additional permitting.

Segment Y could occur primarily within urban areas and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

Segment Y could cross three federally administered historic trails multiple times within public roads and private land. The National Historic Trail designation has no effect on the rights of private landowners. Although temporary impacts from construction could occur, the pipeline would not be anticipated to permanently impact physical and historical qualities of the trails or interfere with the nature and purposes of the trails. In addition, O&M of the pipeline would not likely conflict with long-term management and use of the trails. Therefore, no conflicts with these trails would be anticipated.

State

The corridor for Segment Y could cross Rio de Los Angeles State Park, which provides recreational opportunities while also protecting riparian and upland vegetation ecosystems associated with the Los Angeles River. Specifically, the corridor could cross access points and the active recreation zone for the park, which could temporarily impact access to recreational opportunities (California State Parks 2005). Construction

and O&M activities would need to be consistent with the Rio de Los Angeles State Park General Plan and a Right-of-Entry Permit from California State Parks would be required.

Segment Y could cross state-managed linear infrastructure, including the state highways and the alternatives for the Palmdale-to-Burbank, Burbank-to-Los Angeles, Los Angeles-to-San Diego, and Los Angeles-to-Anaheim sections of the California High-Speed Rail alignment. The segment could require an encroachment permit from Caltrans for these highway crossings. Each section of the California High-Speed Rail alignment is in a different stage of environmental review (California HSRA 2024), as described in the following:

- The Draft EIR/EIS for the Palmdale-to-Burbank section was released on September 2, 2022.
- The Final EIR/EIS was approved by the California HSRA's Board of Directors on January 20, 2022, for the Burbank-to-Los Angeles section, but is awaiting a Record of Decision to meet NEPA requirements and a Notice of Determination to meet CEQA requirements.
- A Notice of Intent to prepare an EIS and a Notice of Preparation to prepare an EIR were published in 2020 for the Los Angeles-to-Anaheim section, and an alternatives analysis was published in 2023.
- No environmental review documents or timelines have been publicly distributed for the Los Angeles-to-San Diego section.

While no construction plans have been publicly published for these sections, construction of the pipeline could conflict with implementation and construction of the alignment; however, it is unlikely the timing would overlap. Once constructed, crossing the alignment could require an encroachment permit from the California HSRA.

Local

Segment Y could cross the Second Los Angeles Aqueduct, which could require an easement or license agreement with the LADWP.

Segment Y or the corridor could also cross locally managed parks and/or open space areas, and although impacts would be temporary, construction of the pipeline could conflict with these land uses. As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Therefore, coordination with local agencies would be anticipated during future planning efforts.

While most of the parks/open space areas would only be subject to local discretionary authority, Segment Y could cross protected area for the Arroyo Seco. This area contains an aquatic feature that is afforded additional protections (e.g., under the CWA and Porter-Cologne Water Quality Control Act) and could require state and/or federal discretionary authority if this feature is impacted during construction and O&M of the pipeline.

3.9.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, Segment Y would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a result of construction and O&M of the pipeline; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce potential land use conflicts are shown in Table 3.9-27: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 3F. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.9-27: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 3F

Potential Impact	Potential Avoidance and Minimization Measures
Potential land use conflict with Rio de Los Angeles State Park	The pipeline could be routed outside of the limits of the park, to the extent feasible.
Potential land use conflict with the Arroyo Seco	The pipeline could be routed outside of this area or within the existing SoCalGas pipeline corridor, to the extent feasible

3.10 STUDY AREA 4A

3.10.1 Study Area 4A Description

Study Area 4A includes Segment R of the Evaluated Segments, as depicted in Figure 3.10-1: Study Area 4A Overview Map. The segment would traverse approximately 82 miles of Kern County. This segment is part of the Connection Zone, along with Segments C, F, H, N, O, P, Q, and X of the Evaluated Segments. Table 3.10-1: Jurisdictions Crossed by Study Area 4A details the distance in miles that Segment R would cross through each jurisdiction. Segment R connects with Segment C on the north end and Segments L and M that are part of the Collection Zone on the south end.

Table 3.10-1: Jurisdictions Crossed by Study Area 4A

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
R	82	Unincorporated Kern County	82

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

3.10.1.1 Summary of Potential Impacts

Segment R within this study area is preliminary, and the actual routing, engineering, and design of the Evaluated Segments, and construction methods for the segment has not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, the segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of Segment R and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.10-2: Study Area 4A Potential Impact Summary summarizes the potential impacts identified for the segment within Study Area 4A.

Figure 3.10-1: Study Area 4A Overview Map

Angeles Link Phase 1 Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- R
- Adjacent/Other Study Area Visible

Study Area 1A (C)

Bakersfield

Study Area 3D (M)

Study Area 3D (L)

R

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Table 3.10-2: Study Area 4A Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of the segment
Biological Resources	• Potential impacts to species and habitat during construction and O&M of the segment • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M of the segment • Potential impacts to wetlands during construction and O&M of the segment • Potential impacts to wildlife movement and migration corridors during construction and O&M of the segment • Potential to conflict with existing NCCPs/HCPs and other conservation plans during construction and O&M of the segment
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of the segment • Potential to change the significance of an archaeological resource during construction and O&M of the segment • Potential to disturb human remains during construction and O&M of the segment • Potential to change the significance of a TCR during construction and O&M of the segment
Energy	• Potential impacts to existing energy resources during construction of the segment • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of the segment
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of the segment • Potential for a foreseeable upset or accident conditions during construction and O&M of the segment • Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of the segment
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of the segment

Environmental Factor	Potential Impact
	• Potential impacts to ground water quality and/or depletion during construction and O&M of the segment • Potential impacts to floodplains during construction and O&M of the segment
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M of the segment

3.10.2 Air Quality and Greenhouse Gas Emissions

3.10.2.1 Existing Conditions

Section 3.10.1 Study Area 4A Description provides a description of the segment and the cities and counties that would be crossed by Segment R. Study Area 4A is comprised of Segment R.

As depicted in Attachment A: Air Basins and Air Districts Maps, Segment R is located entirely within the San Joaquin Valley Air Basin, under the jurisdiction of the SJVAPCD. The San Joaquin Valley is surrounded on the west by the Coastal Ranges, on the south by the San Emigdio and Tehachapi Mountains, on the east by the Sierra Nevada and on the north by the Sacramento-San Joaquin Delta and Sacramento Valley. The topography of the surrounding mountain ranges creates a sheltered valley that tends to trap stable air and air pollutants.

Attainment Status

Table 3.10-3: Study Area 4A Attainment Status summarizes the current attainment status for criteria air pollutants with the CAAQS and NAAQS for the segment associated with Study Area 4A.

Table 3.10-3: Study Area 4A Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
San Joaquin Valley Air Basin		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
CO	Unclassified/Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segment.
Source: CARB 2023

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from

the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Air Quality

San Joaquin Valley Air Pollution Control District

The SJVAPCD's Guidance for Addressing and Mitigating Air Quality Impacts provides guidance on how to evaluate a project's potential to impact air quality, including methods for calculating anticipated criteria air pollutant emissions from the construction and O&M phases of a project (SJVAPCD 2015). Table 3.10-4: SJVAPCD Criteria Air Pollutant Significance Thresholds for Study Area 4A lists the applicable criteria air pollutant significance thresholds from the SJVAPCD.

Table 3.10-4: SJVAPCD Criteria Air Pollutant Significance Thresholds for Study Area 4A

Criteria Air Pollutant	Annual Construction Emissions Thresholds (Tons)	Annual Operational Emissions Thresholds (tons)	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
CO	100	100	100
NO_X	10	10	10
ROG	10	10	10
SO_X	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: SJVAPCD 2015

Greenhouse Gas

San Joaquin Valley Air Pollution Control District

In 2009, the SJVAPCD adopted its Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009a) and its policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009b).

These documents provide a framework for evaluating a project's potential impacts from GHG emissions. In this guidance, the SJVAPCD concludes that no one project could generate enough GHG emissions to noticeably change the global climate temperature; therefore, it does not establish a numeric threshold for GHG emissions.

Consistent with CPUC precedent (CPUC 2020a, CPUC 2020b), in the absence of an established numerical threshold from the SJVAPCD, projects may adopt the South Coast Air Quality Management District's (SCAQMD's) recommended approach for construction emissions by amortizing the construction emissions over a 30-year project lifetime and then comparing those emissions to the significance threshold of 10,000 metric tons CO_2e per year.

3.10.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segment R, if built, within Study Area 4A are summarized in Table 3.10-5: Air Quality and Greenhouse Gas Emissions Potential Impacts.

Table 3.10-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 4A

Potential Impact	Project Phase	Segment R
Air Quality	Construction	Potential Impact
	O&M	Potential Impact
GHGs	Construction	Potential Impact
	O&M	Potential Impact

Air Quality

As noted in Table 3.10-3: Study Area 4A Attainment Status, the segment associated with Study Area 4A would be located in areas currently classified as nonattainment for O_3, $PM_{2.5}$, and PM_{10}. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.10.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases

subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are summarized in Section 3.10.2.3 Potential Avoidance and/or Minimization Measures.

3.10.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 4A and all AMMs are also applicable to this study area.

3.10.3 Biological Resources

3.10.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segment R. Biological resources in Study Area 4A are under the jurisdiction of the CDFW, BLM, and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 4A; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segment within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023) and aerial imagery, it was determined that 10 vegetation communities would be present within the segment that crosses Study Area 4A. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, then the vegetation community was reclassified into the most similar CWHR classification. Deciduous orchard, evergreen orchard, vineyard, irrigated row and field crops, alkali desert scrub, desert scrub, and annual grassland habitats are the predominant habitats present within a 200-foot-wide corridor centered on Segment R. The habitats and approximate area of each habitat that would be within each segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat and Other Sensitive Natural Communities

Segment R within Study Area 4A would cross existing lacustrine, riverine and valley foothill riparian, desert riparian habitats that would likely be classified as a sensitive natural communities within California. Segment R would cross existing lacustrine, riverine habitat where the segment would cross the California Aqueduct. However, habitat at this location would not be classified as a sensitive natural community because the feature is concrete-lined and not vegetated.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segment in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment R would cross 66 potentially jurisdictional features in this study area. Although potentially jurisdictional features are discussed in detail in the Surface Waters

subsection of Section 3.10.7.1 Existing Conditions, wetland habitats may be present along these jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, one protected plant species and 12 protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segment R. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near the segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

As detailed in Table 3.10-6: Protected Plant Species Likely to Occur in Study Area 4A, one protected plant species would be likely to occur within portions of Segment R and/or within 0.25 mile of the segment centerline. Unless otherwise noted, the species was identified to have a CNDDB record within 0.25 mile of the segment centerline (CDFW 2023d).

Table 3.10-6: Protected Plant Species Likely to Occur in Study Area 4A

Segment	Species Common Name	Listing Status [188]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[189]
R	Kern mallow	FE	3.0	1.8

Sources: CDFW 2023d and CDFW 2023e

This species and a brief assessment of the potential to occur within the segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

[188] Explanation of listing status code:
Federal listing code:
- FE: Federally listed as endangered

[189] The buffer includes 0.25 mile on either side of a segment centerline.

Protected Wildlife

As detailed in Table 3.10-7: Protected Wildlife Species Likely to Occur in Study Area 4A, 12 protected wildlife species would be likely to occur within portions of Segment R and/or within 0.25 mile of the segment centerline. Unless otherwise denoted, the species were identified to have a CNDDB record within 0.25 mile of the segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), no USFWS-designated critical habitat for any species is present within the 200-foot-wide corridor centered on Segment R.

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segment R would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 4A.

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segment R would traverse one BLM-managed ACEC, Lokern-Buena Vista, in Study Area 4A. This ACEC covers 11,253 acres of federal land in total managed by the BLM Bakersfield Field Office. Segment R would cross approximately 9.8 miles of this ACEC, and within the 200-foot-wide corridor, Segment R would cover approximately 248.8 acres of the ACEC. A goal for this ACEC is to provide suitable habitat for listed species and protection for natural systems and processes (BLM 2014).

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), a majority of Segment R would cross the Aera Energy Southwest San Joaquin Valley NCCP/HCP. Segment R would cross approximately 72.3 miles of the NCCP/HCP plan area. Within the 200-foot corridor, Segment R would overlap approximately 1,752.1 acres of the NCCP/HCP plan area. This plan is incomplete and not available for review at this time.

Table 3.10-7: Protected Wildlife Species Likely to Occur in Study Area 4A

Segment	Species Common Name	Listing Status[190]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[191]
Amphibians and Reptiles				
R	Blunt-nosed leopard lizard	FE, SE, FP	38.7	40.2
	Temblor legless lizard[192]	SC	0.0	0.1
	Western pond turtle[192,193]	FPT	10.1	13.2
	Western spadefoot[192]	FPT	38.6	41.2
Birds				
R	Golden eagle[192,194]	FP	19.4	19.4
	Swainson's hawk[192]	ST	30.7	19.7
	Tricolored blackbird	ST	0.9	0.8
	White-tailed kite[192]	FP	25.7	15.8

[190] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered
- FPT: Federally proposed as threatened

State listing codes:
- SC: State candidate for listing
- SE: State-listed as endangered
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[191] The buffer includes 0.25 mile on either side of a segment centerline.

[192] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

[193] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

[194] For bald eagles and golden eagles, a one-mile buffer on either side of a segment centerline was used.

Segment	Species Common Name	Listing Status[190]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[191]
Mammals				
R	Giant kangaroo rat	FE, SE	38.1	40.2
	Nelson's antelope ground squirrel	ST	48.0	47.4
	San Joaquin kit fox	FE, ST	48.5	48.9
	Tipton kangaroo rat	FE, SE	0.2	0.1

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

Furthermore, Segment R would cross two CDFW-managed lands or conservation easements—the Lokern Ecological Reserve and the Elk Hills Conservation Easement—in Study Area 4A. Segment R would cross approximately less than 0.1 mile of the Lokern Ecological Reserve and approximately 3.0 miles of the Elk Hills Conservation Easement. The Special Land Use Designations subsection of Section 3.10.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segment R would not cross any waterbodies in Study Area 4A that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.10-8: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 4A. The areas with the highest connectivity ranks would occur predominantly in the southern portion of the Segment R, approximately four miles north of the unincorporated community of McKittrick, where the route would traverse undeveloped lands within the Lokern-Buena Vista ACEC.

Table 3.10-8: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 4A

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
R	34.2	3.7	17.4	24.5	1.8

Source: CDFW 2019

3.10.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 4A are summarized in Table 3.10-9: Biological Resources Potential Impacts for Study Area 4A.

Protected Species and Their Habitat

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 4A.

Table 3.10-9: Biological Resources Potential Impacts for Study Area 4A

Potential Impact	Project Phase	Segment R
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, mammals, and plants; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	Potential Impact: Conflict with allowable use or management of land
	O&M	Potential Impact: Conflict with allowable use or management of land

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.10.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Amphibian, Mammal, and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian, mammal, and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 4A.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.10.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Plant Species

Typical construction and O&M activities could have the potential to impact protected plant species that may occur within construction areas. Impacts, as previously described in Study Area 1B Section 3.2.3.2 Impact Discussion in the Impacts to Protected Plant Species subsection, would not differ within Study Area 4A.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.10.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Construction and O&M activities associated with the pipeline installation could have the potential to result in impacts to riparian habitat or other sensitive natural communities, including valley foothill riparian, desert riparian habitat that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wetlands, Riparian Habitat, or Other Sensitive Natural Communities subsection, would not differ within Study Area 4A.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.10.3.3 Potential Avoidance and/or Minimization Measures.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 4A.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.10.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities could conflict with the goals of the Lokern-Buena Vista ACEC, since one of the goals is to provide suitable habitat for protected species. Construction activities could cause temporary and permanent habitat loss and

fragmentation within this ACEC if appurtenances were to be located in the ACEC; however, these pipeline components could potentially be sited outside of sensitive areas.

Construction and O&M activities could conflict with the terms and conditions of the Aera Energy Southwest San Joaquin Valley NCCP/HCP. However, since the NCCP/HCP is not complete at this time, potential conflicts with this plan cannot be determined.

Additionally, construction and O&M activities could conflict with the long-term management provisions of the Lokern Ecological Reserve or the Elk Hills Conservation Easement. However, consultation with the CDFW would be required to determine potential conflicts with these CDFW-managed lands.

3.10.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These AMMs are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-11: Biological Resources Potential Avoidance and Minimization Measures in Study Area 1B. The impacts would not differ within Study Area 4A.

3.10.4 Cultural Resources and Tribal Cultural Resources

3.10.4.1 Existing Conditions

A total of 108 previously documented resources have been identified within the 0.25-mile buffer of Study Area 4A, as detailed in Table 3.10-10: Existing Cultural Resources in Study Area 4A. Of these resources, 23 are within a 200-foot-wide pipeline corridor (comprising 100 feet on either side of the segment centerline).

Table 3.10-10: Existing Cultural Resources in Study Area 4A

Segment	Relationship to Segment	Total Identified Resources
R	Within[195]	23
	0.25 mile	85

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 4A was not available. Until further information can be acquired, all of the 23 cultural resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.10.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segment R, if built, within Study Area 4A are summarized in may occur during Table 3.10-11: Cultural and Tribal Resources Potential Impacts for Study Area 4A. All known eligible and unevaluated resources within Study Area 4A were analyzed to determine if Segment R could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 4A that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary route for Segment R, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.10.4.3 Potential Avoidance and/or Minimization Measures.

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources subsection. Construction and O&M activities would have the potential for direct impacts to historical resources identified within Segment R.

[195] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.10.4.3 Potential Avoidance and/or Minimization Measures.

Table 3.10-11: Cultural and Tribal Resources Potential Impacts for Study Area 4A

Potential Impact	Project Phase	Segment R
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for the segment in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Construction and O&M activities would have the potential for direct impacts to human remains for the segment in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Constructions and O&M activities would have the potential for impacts to TCRs for the segment in this study area. TCRs would be identified during Assembly Bill 52 consultation with tribes.

3.10.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed

in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.10.5 Energy

3.10.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within Kern County that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 4A.

Existing Local Energy Use

Electricity

Within Study Area 4A, PG&E is the primary provider of electricity (PG&E 2014a). Additional information about PG&E's programs and RPS requirements is included in Study Area 1A Section 3.1.5.1 Existing Conditions in the Existing Local Energy Use subsection. As detailed in Table 3.10-12: Electricity Consumption in 2022 for Counties Crossed by Study Area 4A, approximately 15 billion kWh of electricity were consumed in Kern County in 2022.

Table 3.10-12: Electricity Consumption in 2022 for Counties Crossed by Study Area 4A

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Kern County[196]	2,764.8	1,2096.1	**14,860.9**

Source: CEC 2022a

Natural Gas

Within Study Area 4A, PG&E provides natural gas service (PG&E 2014b). As detailed in Table 3.10-13: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 4A, approximately 2 billion therms[197] were consumed in Kern County in 2022.

[196] The Kern County figures include data from all of Kern County, which factors in natural gas also provided by SCE. SCE is a subsidiary of Edison International, and it serves approximately 180 cities in 11 counties across central and southern California (SCE 2023).

[197] One therm is equal to 100,000 Btu, or 100 kBtu.

Table 3.10-13: Natural Gas Consumption in 2022 for Counties Crossed by Study Area 4A

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Kern County	99.1	1,674.4	**1,773.6**

Source: CEC 2022a

Diesel and Gasoline

Within Study Area 4A, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

As detailed in Table 3.10-14: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 4A, approximately 395 million gasoline fuel sales and 226 million diesel fuel sales were estimated in Kern County in 2022.

Table 3.10-14: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 4A

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Kern County	395	226

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Solar Resource Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other (CEC 2024). According to the Solar Resources dataset from

the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, all of Study Area 4A overlaps the South Central Valley Solar Resource Area.

Kern County

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Kern County subsection, Kern County provides a list and associated map of the current approved, in-progress, and upcoming wind and solar energy projects within the county (Kern County Planning and Natural Resources Department 2013). No separate renewable energy plan has been developed for Kern County. Segment R within Study Area 4A would not overlap any approved or in-progress PV solar-generation facilities within Kern County (CEC 2023c).

3.10.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 4A are summarized in Table 3.10-15: Study Area 4A Potential Energy Impacts.

Table 3.10-15: Study Area 4A Potential Energy Impacts

Potential Impact	Project Phase	Segment R
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact
	O&M	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact
	O&M	No Impact

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.5.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.3.5.3 Potential Avoidance and/or Minimization Measures.

3.10.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.10.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

3.10.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur along Study Area 4A.

3.10.6.1 Existing Conditions

Section 3.10.1 Study Area 4A Description provides a description of the segment, as well as the counties and cities through which the segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 4A are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed no open or closed hazardous materials cases within 1,000 feet of Segment R.

Fire Hazards

The CAL FIRE FHSZs that would be crossed by the Study Area 4A segment are detailed in Table 3.10-16: Fire Hazard Severity Zones Crossed in Study Area 4A. Study Area 4A would be located within Moderate or lower FHSZs within SRAs and LRAs. These areas are recognized by the Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency.

Table 3.10-16: Fire Hazard Severity Zones Crossed in Study Area 4A

FHSZ	Segment R (miles)
SRA	
Moderate	15.7
LRA	
Non-Wildland/Non-Urban	46.1
Urban Unzoned	1.8
Moderate	15.1

Source: CAL FIRE 2024

Schools and Day-Care Centers

No schools or day-care centers are within 0.5 mile of Segment R (U.S. Department of Homeland Security 2024).

Airports

No airports or private airstrips are within two miles of Segment R.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segment R in Study Area 4A is managed by the following plans:

- Kern County EOP (County of Kern 2022) and
- Kern MJHMP (County of Kern 2020).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

3.10.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segment within Study Area 4A are summarized in Table 3.10-17: Study Area 4A Potential Impacts.

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Based on the resources present in this study area, construction and O&M activities would be anticipated to have a potential for temporary or permanent impact to the public or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.10.6.3 Potential Avoidance and/or Minimization Measures.

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities would have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.10.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

No schools and or day-care centers would be located within 0.5 mile of Segment R. Therefore, there is no potential for temporary or permanent impacts to schools during construction and O&M.

Table 3.10-17: Study Area 4A Potential Impacts

Potential Impact	Project Phase	Segment R
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact
	O&M	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact
	O&M	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	No Impact
	O&M	No Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	No Impact
	O&M	No Impact
Public Airport and/or Private Airstrip Hazards	Construction	No Impact
	O&M	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact
	O&M	Potential Impact
Wildland Fires	Construction	No Impact
	O&M	No Impact

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

No open or closed hazardous materials sites were identified within 1,000 feet on either side of Segment R; therefore, no impacts are anticipated from the presence of existing hazardous materials encountered during construction and O&M.

Public Airport and/or Private Airstrip Hazards

No airports or private airstrips are located within two miles of Segment R. Therefore, there is no potential for temporary or permanent impacts to airports or private airstrips near the pipeline during construction and O&M.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.10.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

Typical impacts and wildfire prevention practices that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Wildland Fires subsection. As previously discussed, the segment within Study Area 4A would not be located within the CAL FIRE Very High FHSZ within an SRA or LRA. Construction and O&M activities likely have no potential to expose people or structures to a significant risk involving wildland fires; however, the AMMs detailed in Section 3.10.6.3 Potential Avoidance and/or Minimization Measures could be implemented.

3.10.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A. The impacts that could be anticipated within Study Area 4A would not be expected to differ from those identified within Study Area 1A.

3.10.7 Hydrology and Water Quality

3.10.7.1 Existing Conditions

Segment R is located in RWQCB Central Valley Region 5. Water resources in these areas are also under the jurisdiction of CDFW Central Region 4 and USACE Sacramento District.

The following subsections discuss hydrological resource existing conditions in Study Area 4A; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for pipeline segments within this study area.

Surface Waters

The study area would cross eleven USGS watersheds (USGS 2023b). Segment R would cross the Antelope Plain, Browns Canyon, Buena Vista Creek, Liveoak Canyon-Pastoria Creek, Pleitito Creek-Kern Lake Bed, San Emigdio Creek-Frontal Buena Vista Lake Bed, Sandy Creek-Frontal Buena Vista Lake Bed, Tecuya Creek-Frontal Kern Lake Bed, and Upper Kern River Flood Canal watersheds.

Based on the review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Segment R would cross eight named and 58 unnamed waterbodies. A list of all named waterbodies would cross by the study area are included in Table 3.10-18: Named Waterbodies Crossed by Study Area 4A. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- four artificial waterways,
- two canals/ditches,
- one connector between waterways, and
- 54 streams/rivers.

Impaired Surface Waters

As indicated by a review of the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2022a), one impaired water body would be crossed by Segment R, as listed in Table 3.10-19: Impaired Waterbodies Crossed by Study Area 4A. Details regarding the pollutants that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b). The listing associated with the waterbody specifies that pH is the pollutant causing a lack of attainment of water quality standards for certain waterbodies within the study area and does not list a source of the pollutant.

Floodplains

The FEMA Flood Hazard Layer (FEMA 2023) indicates that the study area would cross several floodplains, including the 500-year and 100-year-floodplains. Floodplains that would be crossed by the segment within this study area are depicted in Attachment E: Hydrological Maps.

Table 3.10-18: Named Waterbodies Crossed by Study Area 4A

Waterbody Name	Segment(s) Crossed	Waterbody Classification
Broad Creek	R	Artificial waterway
Buena Vista Creek	R	Artificial waterway
El Paso Creek	R	Stream/river
California Aqueduct	R	Artificial waterway
Pleitito Creek	R	Stream/river
San Emigdio Creek	R	Stream/river
Sandy Creek	R	Stream/river
Tecuya Creek	R	Stream/river

Source: USGS 2023b

Table 3.10-19: Impaired Waterbodies Crossed by Study Area 4A

Waterbody Name[198]	RWQCB Jurisdiction	Pollutant
California Aqueduct (Panoche Creek to Grapevine)	Regional Board 5 – Central Valley Region	pH

Source: SWRCB 2022a

Groundwater

The study area would cross two groundwater basins (DWR 2022a). Segment R would cross the San Joaquin Valley-Kern County and San Joaquin Valley-White Wolf groundwater basins. Publicly available data from the DWR (DWR 2022a) was reviewed to estimate existing depths to groundwater. Groundwater readings from 32 monitoring wells located within two miles of the study area were reviewed, as listed in Table 3.10-20: Groundwater Readings within Two Miles of Study Area 4A. The 2022 groundwater-depth readings at these monitoring wells range from 178.6 feet bgs to 678.3 bgs. Groundwater levels within the study area are expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

[198] Waterbody names of impaired waterbodies are based on data from the SWRCB California 2020-2022 Integrated Report and may differ from waterbody names included in Table 3.10-18: Named Waterbodies Crossed by Study Area 4A, which are taken from USGS NHD Plus High-Resolution data.

Table 3.10-20: Groundwater Readings within Two Miles of Study Area 4A

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
R	32	178.6	678.3

Source: DWR 2022a

3.10.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segment R are detailed in Table 3.10-21: Study Area 4A Potential Impacts.

Table 3.10-21: Study Area 4A Potential Impacts

Potential Impact	Project Phase	Segment R
Water Quality Degradation	Construction	Potential Impact
	O&M	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact
	O&M	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact
	O&M	Potential Impact

Surface Waters

As detailed in Section 3.10.7.1 Existing Conditions in the Surface Waters subsection, eight named waterbodies and 58 unnamed waterbodies would be crossed by Segment R. Segment R would cross one impaired waterbody as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for Segment R where it would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.10.7.3 Potential Avoidance and/or Minimization Measures.

Floodplains

Segment R would be installed within and across the floodplains that are detailed in Section 3.10.7.1 Existing Conditions in the Floodplains subsection. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross floodplains. Construction and O&M activities would likely not cause permanent impacts related to floodplains. Potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.10.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 4A, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.10.7.3 Potential Avoidance and/or Minimization Measures.

3.10.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction and O&M of Segment R. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 4A and could be implemented to avoid or reduce potential impacts to segments within this study area.

3.10.8 Land Use and Planning

3.10.8.1 Existing Conditions

Section 3.10.1 Study Area 4A Description contains a description of Segment R and Table 3.10-1: Jurisdictions Crossed by Study Area 4A details the distance that Segment R would traverse each local jurisdiction within Study Area 4A.

Land Use

Most of Segment R would travel along unpaved roads within open space/public lands and agricultural or industrial areas, excluding some cross-country portions within agricultural land and the portion that would travel along SR-166, which is paved.

General plan land use designations that would be crossed by the Segment R and the corridor within each jurisdiction within Study Area 4A are detailed in Table 3.10-22: General Plan Designations Crossed by Study Area 4A.[199]

Table 3.10-22: General Plan Designations Crossed by Study Area 4A

Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[200] (acres)
Kern County	Agricultural	57.4	1,389.2
	High-Density Commercial	0.9	19.2
	Industrial	19.2	468.8
	Medium-Density Residential	N/A[201]	<0.1
	Open Space and Public Lands	4.3	104.0

Source: California Governor's OPR 2024

Special Land Use Designations

As described in the following subsections and detailed in Table 3.10-23: Agency-Managed and Protected Lands Crossed by Study Area 4A, Table 3.10-24: Linear Infrastructure and Protected Trails Crossed by Study Area 4A, and Attachment F-1: Special Land Use Designations Maps, Segment R would cross lands managed by federal, state, and local agencies, as well as non-governmental organizations.

[199] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.
[200] The corridor includes 100 feet on either side of the pipeline.
[201] This is not applicable because the pipeline would not cross the land use designation.

Table 3.10-23: Agency-Managed and Protected Lands Crossed by Study Area 4A

Agency/ Organization	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[202] (acres)
Federal			
BLM	BLM-Managed Land	2.9	70.9
	Lokern-Buena Vista ACEC[203]	9.8	248.8
State			
CDFW	Lokern Ecological Reserve	<0.1	0.5
Regional			
Kern County	Williamson Act Property	29.5	789.0
Non-Governmental Organizations			
CNLM	Lokern Preserve	0.3	6.9
Sequoia Riverlands Trust	MacPherson-Hull Road Conservation Easement	N/A[204]	1.0
Easement Holding Agency	Elk Hills Conservation Easement	2.9	69.2

Sources: California Department of Conservation 2023, CDFW 2023a, GreenInfo Network 2023a, GreenInfo Network 2023b

Table 3.10-24: Linear Infrastructure and Protected Trails Crossed by Study Area 4A

Agency	Special Land Use	Number of Times Crossed
Federal		
NPS	Butterfield Overland National Historic Trail	1
State		
DWR	California Aqueduct	3

Sources: BLM 2023, USGS 2023

[202] The corridor includes 100 feet on either side of the pipeline.
[203] The publicly available data depicts this ACEC as extending outside of BLM-managed lands.
[204] This not applicable because the pipeline would not cross the special land use.

Section 3.10.3 Biological Resources contains a discussion of HCP/NCCP boundaries that Segment R would cross in Study Area 4A. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Lands Managed by Federal Agencies

Segment R would cross BLM-managed land near SR-58 and the Buena Vista Hills, including the Lokern-Buena Vista ACEC, which is managed by the BLM's Bakersfield Field Office under the Bakersfield Resource Management Plan (RMP), as detailed in Attachment F-2: Management and Conservation Plans Map. The objective of this ACEC is to "provide habitat for the suite of San Joaquin Valley listed species including ecologically functioning valley upland habitats." Special management considerations for this ACEC identified it as an exclusion area for ROWs related to utility scale renewable energy projects (BLM 2014).

Segment R would also cross the Butterfield Overland National Historic Trail along Sebastian Road near the eastern terminus of the segment. The National Trails office for Regions 6, 7, and 8 of the NPS administers the trail. The office does not manage any land but works with partners to help share and protect national historic trails (NPS 2023). Administration of national historic trails adheres to the policies listed in Director's Order #45 and Reference Manual 45 (NPS 2013, NPS 2019). The National Trails System Act of 1968, as amended, governs the activities of the National Trails System, which includes the Butterfield Overland National Historic Trail (16 U.S. Code [U.S.C.] § 1241 et seq.).

Lands Managed by State Agencies

Segment R would cross the Lokern Ecological Reserve near SR-58. This reserve is a CDFW property that protects marsh, valley sink scrub, and valley saltbush scrub habitat and species associated with those habitats (CDFW 2023b).

Segment R would cross the California Aqueduct in three locations:

- north of the Buena Vista Pumping Plant,
- along an unnamed road between Copus Road and SR-166, and
- along SR-166.

The aqueduct is managed by the DWR. Segment R would also cross state highways managed by Caltrans.

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segment R would cross Williamson Act properties in Kern County. The Williamson Act allows local governments to enter into contracts with private landowners to restrict land

to agricultural or related open space uses. Participating counties and cities establish their own rules regarding uses of these properties. The most similar use for Kern County includes the erection, construction, alteration, operation, and maintenance of gas, electric, water, and communication utility facilities and similar public service facilities by corporations and companies under the jurisdiction of the CPUC and by public agencies (Kern County 2013).

Lands Managed by Non-Governmental Organizations

Segment R would cross the Lokern Preserve south of Lokern Road, as well as near SR-58. The preserve is composed of several disjunct parcels that were acquired by the Center for Natural Lands Management (CNLM) to provide quality habitat for several threatened and endangered species (CNLM 2023).

Segment R or the corridor would also cross two conservation easements:

- the Elk Hills Conservation Easement south of Elk Hills, which based on the publicly available data, is a CDFW conservation easement associated with the Elk Hills Oil Field that is managed by an unknown easement holding agency; and
- MacPherson-Hull Road Conservation Easement along Gerald Road southeast of the community of Valley Acres, which is managed by the Sequoia Riverlands Trust.

3.10.8.2 Impact Discussion

In addition to potential impacts specifically related to Study Area 4A, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segments to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.10-25: Land Use and Planning Potential Impacts for Study Area 4A.

Table 3.10-25: Land Use and Planning Potential Impacts for Study Area 4A

Potential Impact	Project Phase	Segment R
Divide a community	Construction	No Impact
	O&M	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact
	O&M	Potential Impact

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

Land Uses

Segment R could generally follow existing SoCalGas pipeline corridors, public roadways, or unpaved access roads. A couple small sections of Segment R do not appear to have any existing access, so new temporary or permanent access roads could be needed in those areas. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

Segment R could occur primarily in agricultural areas and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

Segment R could cross BLM-managed lands, including the Lokern-Buena Vista ACEC. This ACEC is identified as an exclusion area for ROWs related to utility scale renewable energy projects; therefore, construction and O&M of the pipeline would likely not be considered an allowable use. An existing SoCalGas pipeline corridor traverses this ACEC, but any new construction for the segment may still not be an allowable use. In addition, any work outside of existing easements on BLM-managed land would require a grant of land rights.

Segment R could also cross the federally managed Butterfield Overland National Historic Trail multiple times on public roads. Although temporary impacts from construction could occur, the pipeline would not be anticipated to permanently impact the physical or historical qualities of the trail or interfere with the nature and purposes of the trail. In addition, O&M of the pipeline would not be anticipated to conflict with the long-term management and use of the trail. Therefore, no conflicts with this trail would be anticipated.

State

Segment R could cross state-managed linear infrastructure, including the California Aqueduct and state highways. The segment could require encroachment permits from the DWR and Caltrans for these crossings.

Segment R could also cross a CDFW-managed ecological reserve. CDFW ecological reserves are maintained primarily for the protection of specialized terrestrial or aquatic habitat types and rare, threatened, or endangered species (14 CCR § 630). Although most impacts would be temporary, construction of the pipeline would likely conflict with this land use.

Local

About half of Segment R could cross privately owned Williamson Act properties that have specified agricultural or open space land use designations authorized under the California Land Conservation Act of 1965, which would require development to be consistent with these use designations. Similar uses to the pipeline were identified for these properties within Kern County.

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters. Therefore, coordination with Kern County would be anticipated during future planning efforts.

Non-Governmental Organizations

Segment R could cross conservation easements and a preserve managed by non-governmental organizations. Conservation easements permanently limit uses of the land to protect specific conservation values (e.g., species or habitat). Although most impacts would be temporary, construction of the pipeline could conflict with this land use. An existing SoCalGas pipeline corridor traverses the Elk Hills Conservation Easement and a portion of the Lokern Preserve, but any new construction for the segment may not be an allowable use. Further review of the easements could identify whether specific restrictions and/or allowable uses within the easement agreements pertain to the construction and O&M activities.

3.10.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, Segment R would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a result of construction and O&M of the pipeline; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce potential land use conflicts are shown in Table 3.10-26: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 4A. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.10-26: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 4A

Potential Impact	Potential Avoidance and Minimization Measures
Land use conflict with BLM ACEC	The pipeline could be routed outside of the BLM ACEC boundary, to the extent feasible.
Land use conflict with CDFW-managed ecological reserve	The pipeline could be routed outside of the ecological reserve, to the extent feasible.
Potential land use conflicts with conservation easements/preserve	The terms and conditions of the conservation easements/preserve could be reviewed for conflicts or the pipeline could be routed outside of the conservation easements/preserve, to the extent feasible.

3.11 STUDY AREA 4B

3.11.1 Study Area 4B Description

Study Area 4B includes Segment F of the Evaluated Segments, as depicted in Figure 3.11-1: Study Area 4B Overview Map. The segment would traverse approximately 153 miles of San Bernardino County and the cities of Adelanto, Barstow, and Victorville. This segment is part of the Connection Zone, along with Segments C, H, N, O, P, Q, R, and X of the Evaluated Segments. Table 3.11-1: Jurisdictions Crossed by Study Area 4B details the distance in miles that Segment F would cross through each jurisdiction. Segment F connects from the California and Arizona state line to Segments G and I of the Collection zone in the City of Adelanto.

Table 3.11-1: Jurisdictions Crossed by Study Area 4B

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
F	153	City of Adelanto	7
		City of Barstow	6
		City of Victorville	4
		Unincorporated San Bernardino County	136

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

3.11.1.1 Summary of Potential Impacts

Segment F within this study area is preliminary, and the actual routing, engineering, and design of the Evaluated Segments, and construction methods for the segment has not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, the segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of Segment F and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.11-2: Study Area 4B Potential Impact Summary summarizes the potential impacts identified for the segment in Study Area 4B.

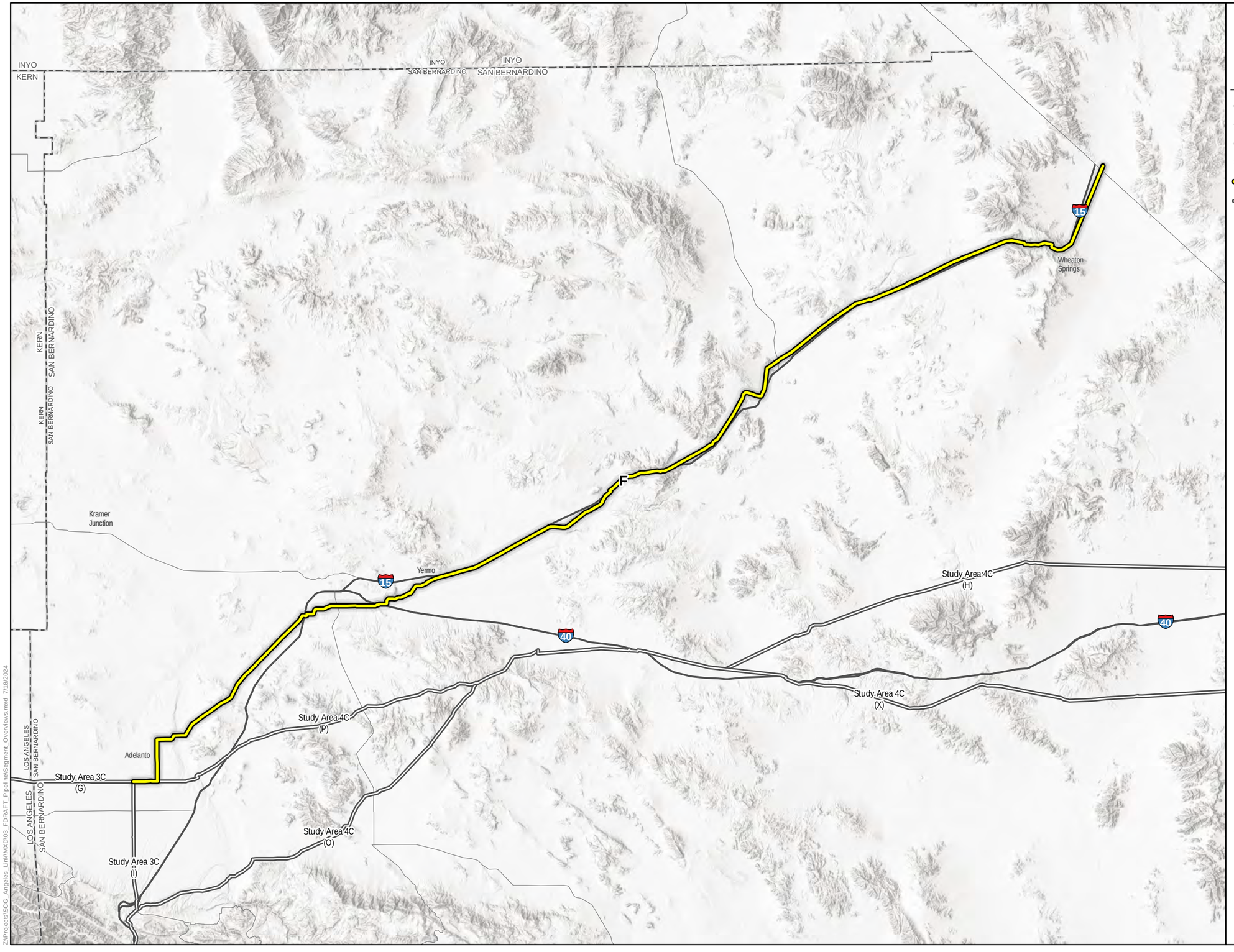


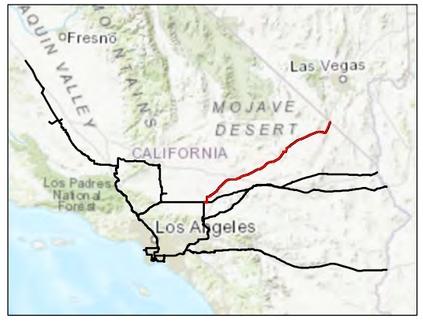
Figure 3.11-1: Study Area 4B Overview Map

Angeles Link Phase 1 Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- F
- Adjacent/Other Study Area Visible



SoCalGas

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Table 3.11-2: Study Area 4B Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of the segment
Biological Resources	• Potential impacts to species and habitat during construction and O&M of the segment • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M of the segment • Potential impacts to wetlands during construction and O&M of the segment • Potential impacts to wildlife movement and migration corridors during construction and O&M of the segment • Potential to conflict with existing NCCPs/HCPs and other conservation plans during construction and O&M of the segment
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of the segment • Potential to change the significance of an archaeological resource during construction and O&M of the segment • Potential to disturb human remains during construction and O&M of the segment • Potential to change the significance of a TCR during construction and O&M of the segment
Energy	• Potential impacts to existing energy resources during construction of the segment • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of the segment
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of the segment • Potential for a foreseeable upset or accident conditions during construction and O&M of the segment • Potential impacts to schools in close proximity to pipeline construction and O&M of the segment • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for the segment

Environmental Factor	Potential Impact
	• Potential impacts to public airports and/or private airstrips during construction of the segment • Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of the segment
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of the segment • Potential impacts to ground water quality and/or depletion during construction and O&M of the segment • Potential impacts to floodplains during construction and O&M of the segment
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M of the segment

3.11.2 Air Quality and Greenhouse Gas Emissions

3.11.2.1 Existing Conditions

Section 3.11.1 Study Area 4B Description provides a description of the segment and the cities and counties that would be crossed by Segment F. Study Area 4B is comprised of Segment F.

As depicted in Attachment A: Air Basins and Air Districts Maps, Study Area 4B is located in the MDAB under the jurisdiction of the MDAQMD. The MDAB is bounded by the Colorado River Valley to the south and east, and by mountains on its remaining sides. The MDAQMD has jurisdiction over San Bernardino County's high desert and portions of Riverside County. The weather within the MDAB tends to be windy, with winds blowing predominately from the south and west. During the summer, a Pacific subtropical high cell that sits off the coast of California generally influences the MDAB, inhibiting cloud formation and encouraging daytime solar heating. In the late spring months, high winds from the coastal areas of Southern California blow into the Mojave Desert. During Santa Ana conditions in the fall, hot air from the desert blows into Southern California. The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert.

Attainment Status

Table 3.11-3: Study Area 4B Attainment Status summarizes the current attainment status for criteria air pollutants with the CAAQS and NAAQS within Study Area 4B.

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Air Quality

Mojave Desert Air Quality Management District

The MDAQMD's CEQA and Federal Conformity Guidelines provide direction on calculating the emissions and assessing the potential criteria air pollutant and GHG impacts from projects within the District (MDAQMD 2020). Table 3.11-4: MDAQMD Criteria Air Pollutant Thresholds for Study Area 4B lists the applicable annual and daily emissions thresholds for projects within the MDAQMD's jurisdiction.

Table 3.11-3: Study Area 4B Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
MDAB		
O_3	Nonattainment	Nonattainment and Unclassified/Attainment
$PM_{2.5}$	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segment.
Source: CARB 2023

Table 3.11-4: MDAQMD Criteria Air Pollutant Thresholds for Study Area 4B

Criteria Air Pollutant	Annual Emissions (Tons)	Daily Emissions (Pounds)
CO	100	548
NO_X	25	137
VOC	25	137
SO_X	25	137
PM_{10}	15	82
$PM_{2.5}$	12	65
H_2S	10	54
Lead	0.6	3

Source: MDAQMD 2020

A multi-phased project (e.g., those with separate construction and operational phases), with phases shorter than one year can be compared to the daily emission threshold while others should use the annual threshold.

Greenhouse Gases

Mojave Desert Air Quality Management District

The MDAQMD has established a daily CO_2e threshold of 548,000 pounds and an annual CO_2e threshold of 100,000 tons for GHG emissions.

3.11.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segment F, if built, within Study Area 4B are summarized in Table 3.11-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 4B.

Table 3.11-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 4B

Potential Impact	Project Phase	Segment F
Air Quality	Construction	Potential Impact
	O&M	Potential Impact
GHGs	Construction	Potential Impact
	O&M	Potential Impact

Air Quality

As noted in Table 3.11-3: Study Area 4B Attainment Status, the segment associated with Study Area 4B would be in areas currently classified as nonattainment for O_3 and PM_{10}. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.11.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Typical impacts from GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection.

Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are summarized in Section 3.11.2.3 Potential Avoidance and/or Minimization Measures.

3.11.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 4B and all AMMs are also applicable to this study area.

3.11.3 Biological Resources

3.11.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segment F. Biological resources in Study Area 4B are under the jurisdiction of the CDFW, BLM, and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 4B; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segment within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that 15 vegetation communities would be present within Study Area 4B. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Desert scrub, Joshua tree, alkali desert scrub, and desert wash habitats are the predominant habitats present within a 200-foot-wide corridor centered on Segment F. The habitats and approximate area of each habitat that would be within each segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segment F within Study Area 4B would cross existing desert riparian, Joshua Tree, and valley foothill riparian habitats that would likely be classified as a sensitive natural communities within California. Segment F would cross existing Joshua Tree habitat that is present in areas to north of the city of Victorville and from the unincorporated community of Halloran Springs to the unincorporated community of Wheaten Springs. Segment F would cross existing desert riparian habitat that is present in the Cronese Valley and within the Mojave River near the cities of Barstow and Victorville. Segment F would cross existing valley foothill riparian habitat that is present within the Mojave River near the City of Victorville.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segment in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment F would cross 215 potentially jurisdictional features in this study area. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.11.7.1 Existing Conditions, wetland habitats may be present along these jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, one protected plant species and eight protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segment F. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near the segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

As detailed in Table 3.11-6: Protected Plant Species Likely to Occur in Study Area 4B, one protected plant species would be likely to occur within a portion of Segment F and/or within 0.25 mile of the segment centerline. No CNDDB records of protected plant species were identified within 0.25 mile of the segment centerline (CDFW 2023d).

Table 3.11-6: Protected Plant Species Likely to Occur in Study Area 4B

Segment	Species Common Name	Listing Status[205]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[206]
F	Joshua tree	SC	11.4	11.8

Sources: CDFW 2023d and CDFW 2023e

This species and a brief assessment of the potential to occur within the segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the

[205] Explanation of listing status code:
State listing code:
- SC: State Candidate for Listing

[206] The buffer includes 0.25 mile on either side of a segment centerline.

likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Protected Wildlife

As detailed in Table 3.11-7: Protected Wildlife Species Likely to Occur in Study Area 4B, eight protected wildlife species would be likely to occur within a portion of Segment F in this study area and/or within 0.25 mile of the segment centerline. No CNDDB records of protected wildlife species were identified within 0.25 mile of the segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), Segment F would be located within USFWS-designated critical habitat for the southwestern willow flycatcher and the desert tortoise. Segment F would cross approximately 0.4 mile and 36.7 miles of critical habitat for the southwestern willow flycatcher and the desert tortoise, respectively. USFWS-designated critical habitat for the southwestern willow flycatcher is present where Segment F would cross the Mojave River north of the city of Victorville. USFWS-designated critical habitat for the desert tortoise is present in areas near I-15 approximately from the City of Barstow to the ghost town of Crucero and from census designated place of Baker to the unincorporated community of Mountain Pass.

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segment F would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 4B.

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segment F would cross 10 BLM-designated ACECs in Study Area 4B. These ACECs are discussed in more detail in Table 3.11-8: Areas of Critical Environmental Concern within Study Area 4B.

Table 3.11-7: Protected Wildlife Species Likely to Occur in Study Area 4B

Segment	Species Common Name	Listing Status[207]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[206]
Amphibians and Reptiles				
F	Arroyo toad[208]	FE	<0.1	<0.1
	California red-legged frog[208]	FT	0.2	0.4
	Desert tortoise	SE, FT	90.0	88.4
	Western pond turtle[209]	FPT	0.5	0.6
Birds				
F	Golden eagle[208,210]	FP	3.1	3.2
	Least Bell's vireo	FE, SE	0.1	0.1
	Southwestern willow flycatcher[208]	FE, SE	0.2	0.2
	White-tailed kite[208]	FP	1.8	2.0

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

[207] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered
- FT: Federally listed as threatened
- FPT: Federally proposed as threatened

State listing codes:
- SE: State-listed as endangered
- FP: CDFW-designated as fully protected

[208] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

[209] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

[210] For bald eagles and golden eagles, a one-mile buffer on either side of a segment centerline was used.

Table 3.11-8: Areas of Critical Environmental Concern within Study Area 4B

Segment	BLM Field Office(s)	ACEC	ACEC Size (acres)	ACEC Miles Crossed	Applicable Goals/ Objectives
F	Barstow	Brisbane Valley Monkey Flower	17,993	5.8	• Protect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses. • Protect and enhance Mojave monkeyflower (*Mimulus mohavensis*) populations. • Protect intact desert tortoise habitat.
		Cronese Basin	10,202	1.7	• Protect and enhance sensitive species habitat and sensitive vegetation types, including small-flowered androstephium (*Androstephium breviflorum*), sand linanthus (*Linanthus arenicola*), mesquite thickets, and desert willow wash. • Protect and enhance sensitive wildlife species habitat, including Mojave fringe-toed lizard. • Protect biodiversity and manage for resilience (protect climate refugia and provide for migration corridors).
		Daggett Ridge Monkey Flower	35,798	2.9	• Protect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses. • Protect and enhance Mojave monkeyflower populations. • Protect desert tortoise habitat critical habitat.

Segment	BLM Field Office(s)	ACEC	ACEC Size (acres)	ACEC Miles Crossed	Applicable Goals/ Objectives
		Manix Paleontological Area	2,902	0.3	• Protect paleontological, cultural, and wildlife resources. • Manage for the protection of Mojave fringe-toed lizard (*Uma scoparia*).
		Northen Lucerne Wildlife Linkage	42,424	1.1	• Protect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses. • Maintain or improve condition of sensitive plant habitat, including Barstow woolly sunflower (*Eriophyllum mohavense*) and Mojave monkeyflower. • Maintain or improve condition of sensitive wildlife habitat, including burrowing owl, Le Conte's thrasher, prairie falcon, and golden eagle.
		Soda Mountain Expansion	18,750	17.6	• To provide connectivity between surrounding large blocks of intact wildlife habitat. • Provide for increased protection of sensitive plant species. • Manage for the protection of sensitive wildlife species, including desert bighorn sheep (*Ovis canadensis nelsonii*), desert tortoise (*Gopherus agassizii*), and golden eagle. • Protect biodiversity and manage for resilience.

Segment	BLM Field Office(s)	ACEC	ACEC Size (acres)	ACEC Miles Crossed	Applicable Goals/ Objectives
	Barstow and Ridgecrest	Superior-Cronese	518,162	7.2	• Manage area in accordance with the Desert Tortoise Recovery Plan. • Protect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses. • Protect all known populations of Barstow woolly sunflower by excluding vehicular use and grazing. • Maintain or improve condition of desert tortoise habitat.
	Barstow and Needles	Shadow Valley	211,613	27.1	• Manage area in accordance with the Desert Tortoise Recovery Plan. • Protect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses. • Maintain or improve condition of vegetation communities. • Maintain habitat and provide for the protection of wildlife
	Needles	Halloran Wash	1,744	3.7	• Maintain proper functioning condition of soils and vegetation. • Maintain and protect characteristic vegetation communities.

Segment	BLM Field Office(s)	ACEC	ACEC Size (acres)	ACEC Miles Crossed	Applicable Goals/ Objectives
					• Monitor and maintain populations of special-status species, game animals, and other characteristic species.
		Ivanpah	86,224	10.5	• Manage area in accordance with the Desert Tortoise Recovery Plan. • Protect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses. • Maintain or improve condition of vegetation communities. • Maintain habitat for desert tortoise.

Source: BLM 2016

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segment F would not be located within the plan area of any NCCP or HCP in Study Area 4B.

Furthermore, the centerlines of Segments F would not be located within 0.25 mile of any CDFW-managed lands or conservation easements in Study Area 4B. The Special Land Use Designations subsection of Section 3.11.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segment F would not cross any waterbodies in Study Area 4B that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.11-9: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 4B. The areas with the highest connectivity ranks would occur predominantly within Segment F where the route would traverse MCLB Barstow.

Table 3.11-9: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity in Study Area 4B

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
F	10.0	10.6	53.3	76.3	2.1

Source: CDFW 2019

3.11.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 4B are summarized in Table 3.11-10: Biological Resources Potential Impacts in Study Area 4B.

Table 3.11-10: Biological Resources Potential Impacts in Study Area 4B

Potential Impact	Project Phase	Segment F
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and plants; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	Potential Impact: Conflict with allowable use or management of land
	O&M	Potential Impact: Conflict with allowable use or management of land

Protected Species and Their Habitat

Impacts to Protected Amphibian and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 4B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 4B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Plant Species

Typical construction and O&M activities could have the potential to impact protected plant species that may occur within construction areas. Impacts, as previously described in Study Area 1B Section 3.2.3.2 Impact Discussion in the Impacts to Protected Plant Species subsection, would not differ within Study Area 4B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Construction and O&M activities could have the potential to result in impacts to riparian habitat or other sensitive natural communities, including Joshua Tree, desert riparian, and valley foothill riparian habitats that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wetlands, Riparian Habitat, or Other Sensitive Natural Communities subsection, would not differ within Study Area 4B.

Most of the potential impacts could be reduced through the implementation of the AMMS detailed in Section 3.11.3.3 Potential Avoidance and/or Minimization Measures.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 4B.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities could conflict with the special management considerations or protection of USFWS-designated critical habitat for the southwestern willow flycatcher and the desert tortoise. A more detailed analysis, as well as consultation with USFWS, may be required to determine potential impacts to these critical habitats.

Construction and O&M activities could conflict with the goals and objectives of 10 ACECs as detailed Section 3.11.3.1 Existing Conditions in the Areas of Critical Environmental Concern subsection. Generally, these ACECs define objectives to protect habitat for protected species; however, construction activities could cause temporary and permanent habitat loss and fragmentation within these ACECs. Consultation with the BLM would be required to determine if the Project would be compatible with the goals and objectives of the ACECs.

3.11.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These AMMs are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-11: Biological Resources Potential Avoidance and Minimization Measures in Study Area 1B. The impacts would not differ within Study Area 4B.

3.11.4 Cultural Resources and Tribal Cultural Resources

3.11.4.1 Existing Conditions

A total of 596 previously documented resources have been identified within the 0.25-mile buffer of Study Area 4B, as detailed in Table 3.11-11: Existing Cultural Resources in Study Area 4B. Of these resources, 122 are within a 200-foot-wide pipeline corridor (comprising 100 feet on either side of the segment centerline).

Table 3.11-11: Existing Cultural Resources in Study Area 4B

Segment	Relationship to Segment	Total Identified Resources
F	Within[211]	122
	0.25 mile	474

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 4B was not available. Until further information can be acquired, all of the 122 cultural resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.11.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segment F, if built, within Study Area 4B are summarized in Table 3.11-12: Cultural and Tribal Resources Potential Impacts.

Table 3.11-12: Cultural and Tribal Resources Potential Impacts

Potential Impact	Project Phase	Segment F
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

[211] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

All known eligible and unevaluated resources within Study Area 4B were analyzed to determine if Segment F could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 4B that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary route for Segment F, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.11.4.3 Potential Avoidance and/or Minimization Measures.

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources subsection. Construction and O&M activities would have the potential for direct impacts to historical resources identified within Segment F in this study area.

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.4.3 Potential Avoidance and/or Minimization Measures.

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for all segments in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Construction and O&M activities would have the potential for direct impacts to human remains for all segments in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Constructions and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during Assembly Bill 52 consultation with tribes.

3.11.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or

currently unevaluated resource that could be impacted during construction are detailed in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.11.5 Energy

3.11.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within San Bernardino County that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 4B.

Existing Local Energy Use

Electricity

Within Study Area 4B, SCE is the primary electricity provider (SCE 2023). Additional information about SCE's service programs and RPS requirements is included in Study Area 1B Section 3.2.5.1 Existing Conditions in the Existing Local Energy Use subsection. As detailed in Table 3.11-13: Electricity Consumption in 2022 for Counties Crossed by Study Area 4B, over 16 billion kWh were consumed in San Bernardino County in 2022.

Table 3.11-13: Electricity Consumption in 2022 for Counties Crossed by Study Area 4B

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
San Bernardino County	6,301.9	10,327.8	**16,629.6**

Source: CEC 2022a

Natural Gas

Within Study Area 4B, SoCalGas provides natural gas service (SoCalGas 2024). As detailed in Table 3.11-14: Natural Gas Consumption in 2022 for Counties Crossed By Study Area 4B, approximately 562 million therms[212] were consumed in San Bernardino County in 2022.

Diesel and Gasoline

Within Study Area 4B, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

[212] One therm is equal to 100,000 Btu, or 100 kBtu.

Table 3.11-14: Natural Gas Consumption in 2022 for Counties Crossed By Study Area 4B

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
San Bernardino County	267.3	294.8	**562.1**

Source: CEC 2022a

As detailed in Table 3.11-15: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 4B, approximately 915 million gasoline fuel sales and 258 million diesel fuel sales were estimated in San Bernardino County.

Table 3.11-15: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 4B

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
San Bernardino County	915	258

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Desert Renewable Energy Conservation Plan

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Desert Renewable Energy Conservation Plan subsection, the DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties (BLM 2016). Portions of Segment F would cross private lands and existing BLM-managed lands that are designated within the DRECP as DFAs, Conservation Areas, Recreation Management Areas (RMAs), and GPLs, as depicted in Attachment C: Energy Resources Maps.

Solar Resource Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group

solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other (CEC 2024). According to the Solar Resources dataset from the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, the southwestern end of Study Area 4B overlaps the Tehachapi Solar Resource Area.

San Bernardino County

As discussed in Study Area 3B Section 3.5.5.1 Existing Conditions in the San Bernardino County subsection, county-level regulations outlined in the County of San Bernardino General Plan provide strategies and policies for promoting renewable energy development. No separate renewable energy plan has been developed for San Bernardino County (County of San Bernardino 2019). Segment F within Study 4B would cross one approved or in-progress PV solar facility within San Bernardino County, as depicted in Attachment C: Energy Resources Maps (CEC 2023c).

3.11.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 4B are summarized in Table 3.11-16: Study Area 4B Potential Energy Impacts.

Table 3.11-16: Study Area 4B Potential Energy Impacts

Potential Impact	Project Phase	Segment F
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact
	O&M	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact
	O&M	No Impact

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.4.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection and the Study Area 1B Section 3.2.5.2 Impact Discussion in the

Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Areas 1A and 1B and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.4.3 Potential Avoidance and/or Minimization Measures.

3.11.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.11.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

3.11.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 4B.

3.11.6.1 Existing Conditions

Section 3.11.1 Study Area 4B Description provides a description of the segment, as well as the counties and cities through which the segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 4B are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed approximately four open cases and nine closed hazardous materials cases within 1,000 feet of Segment F. Open hazardous materials sites are detailed in Table 3.11-17: Open Hazardous Materials Sites Within 1,000 Feet of Study Area 4B.

Fire Hazards

The CAL FIRE FHSZs that would be crossed by the Study Area 4B segment are detailed in Table 3.11-18: Fire Hazard Severity Zones Crossed by Study Area 4B. Study Area 4B would be located within Moderate or lower FHSZs within LRAs but would not be located within an SRA. These areas are recognized by the Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency.

Schools and Day-Care Centers

Schools and day-care centers within 0.5 mile of Study Area 4B are presented in Table 3.11-19: Schools and Day-Care Centers within 0.5 Mile of Study Area 4B.

Airports

Two airports are located within two miles of Segment F. The Baker Airport and Southern California Logistics Airport are located within two miles of Segment F. Portions of Segment F would be located within the land use planning area for the Southern California Logistics Airport.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segment F in Study Area 4B is managed by the following plans:

- San Bernardino County EOP (County of San Bernardino 2019) and
- 2022 San Bernardino County MJHMP (County of San Bernardino 2022).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

Table 3.11-17: Open Hazardous Materials Sites Within 1,000 Feet of Study Area 4B

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[213] (feet)	Media Affected	Regulatory Status
GeoTracker Sites				
Flying J Travel Center #614	F	112	Soil, Under Investigation	Open - Site Assessment
Barstow Mclb, Nebo & Yermo - Ou-7 - N-2 Area 1 - Former Storage Area (Aerial Photograph Anomaly)	F	439	Not Specified	Open - Site Assessment
George Air Force Base - Zz051 Facility 799 Test Cell Fuel Spill	F	729	Aquifer used for drinking water supply, Soil	Open - Eligible for Closure
Soil Safe - Adelanto Soil Recycling Center	F	999	Not Specified	Open - Operating

Sources: DTSC 2024 and SWRCB 2024

Table 3.11-18: Fire Hazard Severity Zones Crossed by Study Area 4B

FHSZ	Segment F (miles)
LRA	
Non-Wildland/Non-Urban	0.6
Urban Unzoned	1.0
Moderate	62.7

Source: CAL FIRE 2024

[213] Distances were calculated based on the approximate center point coordinates provided by GeoTracker and EnviroStor. Depending on the actual property boundaries of each hazardous materials site and/or facility, these sites may be closer than specified.

Table 3.11-19: Schools and Day-Care Centers within 0.5 Mile of Study Area 4B

Segment	Schools	Day-Care Centers
F	5	1
Total	**5**	**1**

Source: U.S. Department of Homeland Security 2024

3.11.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segment within Study Area 4B are summarized in Table 3.11-20: Study Area 4B Potential Impacts.

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Based on the resources present in this study area, construction and O&M activities would be anticipated to have a potential for temporary or permanent impact to the public or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.6.3 Potential Avoidance and/or Minimization Measures.

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities would have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Hazardous Substances in Close Proximity to Schools subsection.

Table 3.11-20: Study Area 4B Potential Impacts

Potential Impact	Project Phase	Segment F
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact
	O&M	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact
	O&M	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	Potential Impact
	O&M	Potential Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	Potential Impact
	O&M	Potential Impact
Public Airport and/or Private Airstrip Hazards	Construction	Potential Impact
	O&M	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact
	O&M	Potential Impact
Wildland Fires	Construction	No Impact
	O&M	No Impact

A total of five schools and one day-care center are located within 0.5 mile of where Segment F would be located. Construction and O&M activities would have a potential for a hazardous emission or impacts resulting from handling hazardous materials within 0.5 mile of a school. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.6.3 Potential Avoidance and/or Minimization Measures.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Existing Hazardous Materials Sites Listed in Government Code Section 65962.5 subsection.

Based on the four open cases identified within 1,000 feet of the segment within Study Area 4B, temporary or permanent impacts may occur due to existing subsurface contamination that may be present during construction or O&M. Construction and O&M activities would have potential for existing hazardous materials sites to create a significant hazard to the public or the environment. Most of the potential impacts could be through the implementation of the AMMs detailed in Section 3.11.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Public Airport and/or Private Airstrip Hazards subsection.

As previously discussed, portions of Segment F would be located within the land use planning area for the Southern California Logistics Airport.

Construction activities are unlikely, but have a potential to result in a safety hazard or excessive noise for the people residing or working in the portions of Segment F near the Southern California Logistics Airport. No impacts would be anticipated to result in safety hazards related to airports during O&M activities.

Most of the potential construction impacts could be reduced through the implementation of the AMMs detailed in Section 3.11.6.3 Potential Avoidance and/or Minimization Measures.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.11.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

Typical impacts and wildfire prevention practices that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Wildland Fires subsection. As previously discussed, the segment within Study Area 4B would not be located within the CAL FIRE Very High FHSZ within an SRA or LRA. Construction and O&M activities likely have no potential to expose people or structures to a significant risk involving wildland fires; however, the AMMs detailed in Section 3.11.6.3 Potential Avoidance and/or Minimization Measures could be implemented.

3.11.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B. The impacts that could be anticipated within Study Area 4B would not be expected to differ from those identified within Study Area 1A and Study Area 1B.

3.11.7 Hydrology and Water Quality

3.11.7.1 Existing Conditions

Segment F is located in the RWQCB Lahontan Region 6. Water resources in this area are also under the jurisdiction of CDFW Deserts Region 6 and the USACE Los Angeles District.

The following subsections discuss hydrological resource existing conditions in Study Area 4B; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for pipeline segments within this study area.

Surface Waters

The study area would cross 17 USGS watersheds (USGS 2023a). Segment F would cross the Baxter Wash-Mojave River, Bell Mountain Wash-Mojave River, Cronise Valley, Daggett Wash-Mojave River, Devil Canyon-Frontal Ivanpah Lake, Halloran Wash, Ivanpah Lake, Lower Fremont Wash, Lucy Gray Mountains-Frontal Ivanpah Lake, Manix Wash-Mojave River, Silver Lake, Soda Lake, Stoddard Valley, Upper Fremont Wash, Upper Kingston Wash, Wall Street Canyon, and Wild Wash watersheds.

Based on review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Segment F would cross 209 unnamed waterbodies and six named waterbodies. A list of all named waterbodies that would be crossed by the Study Area 4B segment is included in Table 3.11-21: Named Waterbodies Crossed by Study Area 4B. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- 12 artificial waterways,
- one canal/ditch,
- one connector between waterways, and
- 201 streams/rivers.

Table 3.11-21: Named Waterbodies Crossed by Study Area 4B

Waterbody Name	Segment(s) Crossed	Waterbody Classification
Mojave River	F	Stream/river
Manix Wash	F	Stream/river
Wheaton Wash	F	Stream/river
Bull Spring Wash	F	Artificial waterway
Halloran Wash	F	Stream/river
Wild Wash	F	Stream/river

Impaired Surface Waters

According to the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2023a), the study area would not cross any impaired waterbodies.

Floodplains

The FEMA Flood Hazard Layer (FEMA 2023) indicates that the study area would cross several floodplains, including the 500-year and 100-year floodplains. Floodplains that would be crossed by Segment F are depicted in Attachment E: Hydrological Maps.

Groundwater

The study area would cross eight groundwater basins (DWR 2022a). Segment F would cross the Ivanpah Valley, Upper Kingston Valley, Silver Lake Valley, Soda Lake Valley, Cronise Valley, Caves Canyon Valley, Lower Mojave River Valley, Middle Mojave River Valley, and Upper Mojave River Valley groundwater basins.

Publicly available data from the DWR (DWR 2022b) was reviewed to estimate existing depths bgs to groundwater. Groundwater readings from 60 monitoring wells located within two miles of the study area were reviewed as listed in Table 3.11-22: Groundwater Readings within Two Miles of Study Area 4B. The 2022 groundwater-depth readings at these monitoring wells range from 2.6 feet bgs to 199.4 bgs. Groundwater levels within the study area are expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

Table 3.11-22: Groundwater Readings within Two Miles of Study Area 4B

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
F	60	2.6	199.4

3.11.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segment F are summarized in Table 3.11-23: Study Area 4B Potential Impacts.

Table 3.11-23: Study Area 4B Potential Impacts

Potential Impact	Project Phase	Segment F
Water Quality Degradation	Construction	Potential Impact
	O&M	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact
	O&M	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact
	O&M	Potential Impact

Surface Waters

As detailed in Section 3.11.7.1 Existing Conditions in the Surface Waters subsection, Segment F would cross 209 unnamed waterbodies and six named waterbodies, none of which are impaired waterbody as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality on Segment F where it would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.11.7.3 Potential Avoidance and/or Minimization Measures.

Floodplains

Segment F would be installed within and across the floodplains that are detailed in Section 3.11.7.1 Existing Conditions in the Floodplains subsection. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area that would cross floodplains. Construction and O&M activities would likely not cause permanent impacts related to floodplains. Potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.11.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 4B, construction activities would have a potential for groundwater to be encountered during

excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segment in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.11.7.3 Potential Avoidance and/or Minimization Measures.

3.11.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segment F. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 4B and could be implemented to avoid or reduce potential impacts to segments within this study area.

3.11.8 Land Use and Planning

3.11.8.1 Existing Conditions

Section 3.11.1 Study Area 4B Description contains a description of the segment and Table 3.11-1: Jurisdictions Crossed by Study Area 4B details the distance that Segment F would traverse each jurisdiction within Study Area 4B.

Land Use

The western portion of Segment F would roughly travel along unpaved roads and paved public roads through open space/public lands, industrial, commercial, residential and areas, as well as a solar field associated with the City of Adelanto. The segment would cross the Mojave River, then continue through a rural residential area. The remainder of the segment would continue roughly along unpaved roads through open space/public lands, as well as commercial, residential, mixed use, and industrial areas associated with the City of Barstow and commercial and residential areas associated with the unincorporated community of Baker.

General plan land use designations that would be crossed by Segment F and the corridor within each jurisdiction within Study Area 4B are detailed in Table 3.11-24: General Plan Designations Crossed by Study Area 4B.[214]

Special Land Use Designations

As described in the following subsections and detailed in Table 3.11-25: Agency-Managed and Protected Lands Crossed by Study Area 4B, Table 3.11-26: Protected Trails Crossed by Study Area 4B, and Attachment F-1: Special Land Use Designations Maps, Segment F would cross lands managed by federal and state agencies. Section 3.11.3 Biological Resources contains a discussion of HCP/NCCP boundaries that the segment would cross within Study Area 4B. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Lands Managed by Federal Agencies

Most of Segment F would cross land managed by the BLM, including the Areas of Environmental Concern (ACECs) detailed in Table 3.11-8: Areas of Critical Environmental Concern within Study Area 4B. These ACECs are managed by the BLM's Barstow or Needles Field Offices under the DRECP (BLM 2016). As detailed in Attachment F-2: Management and Conservation Plans Map, BLM-managed land in Study Area 4B is managed under the CDCA Plan (BLM 1980), as well as the DRECP, West Mojave Plan (BLM 2006), and Northern & Eastern Mojave Desert Management Plan (BLM 2002), which are LUPAs to the CDCA Plan.

[214] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.11-24: General Plan Designations Crossed by Study Area 4B

Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[215] (acres)
City of Adelanto	High-Density Residential	0.6	13.5
	Industrial	3.0	75.1
	Low-Density Commercial	0.7	22.8
	Medium-Density Residential	1.0	23.6
	Mixed Use	0.2	6.0
	Planned Development	N/A [216]	0.3
City of Barstow	Low-Density Commercial	2.5	64.4
	Medium-Density Residential	N/A[216]	0.1
	Mixed Use	1.7	41.7
	Open Space and Public Lands	1.9	46.1
City of Victorville	Agricultural	<0.1	0.5
	Industrial	1.0	17.0
	Low-Density Commercial	N/A[216]	3.6
	Medium-Density Residential	N/A[216]	0.1
	Open Space and Public Lands	0.6	14.2
	Planned Development	1.4	48.3
San Bernardino County	Agricultural	0.3	8.0
	Industrial	2.8	68.0
	Low-Density Commercial	0.7	12.9
	Medium-Density Residential	14.8	351.7
	Mixed Use	0.5	12.7
	Open Space and Public Lands	112.8	2,728.1

Source: California Governor's OPR 2024

[215] The corridor includes 100 feet on either side of the pipeline.
[216] This is not applicable because the pipeline would not cross the land use designation.

Table 3.11-25: Agency-Managed and Protected Lands Crossed by Study Area 4B

Agency	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[217] (acres)
Federal			
BLM	BLM-Managed Land	75.8	1,835.9
	Brisbane Valley Monkey Flower ACEC	5.8	141.1
	Cronese Basin ACEC	1.7	41.3
	Dagget Ridge Monkey Flower ACEC	2.9	69.6
	Halloran Wash ACEC	3.7	89.1
	Ivanpah ACEC	10.5	253.9
	Manix Paleontological Area ACEC	0.3	9.2
	National Conservation Land of the California Desert	45.8	1,098.1
	Northern Lucerne Wildlife Linkage ACEC	1.1	25.7
	Shadow Valley ACEC	27.1	655.8
	Soda Mountains Expansion ACEC	17.6	427.0
	Superior-Cronese ACEC	7.2	174.2
DoD	Former George AFB	1.5	36.3
	Marine Corps Logistics Base (MCLB) Barstow	1.9	47.1
	Yermo Annex	0.6	15.4
NPS	Mojave National Preserve	1.8	44.4
State			
CSLC	CSLC-Managed Land	1.4	33.5

Sources: BLM 2022, BLM 2023a, DISDI 2024, GreenInfo Network 2023

[217] The corridor includes 100 feet on either side of the pipeline.

Table 3.11-26: Protected Trails Crossed by Study Area 4B

Agency/Organization	Special Land Use	Number of Times Crossed
NPS	Old Spanish National Historic Trail	4

Source: BLM 2023c

Segment F would also cross National Conservation Land of the California Desert, which was designated under the DRECP and is closed to all energy development (BLM 2023b). Administration of national monuments, national conservation areas, and other similar designations adhere to the policies listed in the BLM Manual 6220, which includes avoiding granting new ROWs or authorizing use of utility corridors within these areas (BLM 2017).

Segment F would cross the following active and former military installations managed by the DoD:

- Former George AFB[218] along Adelanto Road;
- MCLB Barstow south of I-40; and
- Yermo Annex of MCLB Barstow north of the Mojave River.

Segment F would cross the Mojave National Preserve near the community of Wheaton Springs. The preserve is managed by the NPS under the Mojave National Preserve General Management Plan (NPS 2002).

Segment F would cross the Old Spanish National Historic Trail in four locations:

- east of National Trails Highway;
- within the Yermo Annex, adjacent to the Mojave River;
- south of I-15 along Yermo Road; and
- north of Nickel Mountain Road and northwest of the unincorporated community of Baker.

The trail is jointly managed by the BLM and NPS. The BLM's Utah State Director leads the BLM's co-administration effort and the National Trails office for Regions 6, 7, and 8 leads the NPS co-administration effort. The Old Spanish National Historic Trail Comprehensive Administrative Strategy outlines the operating procedures for planning, development, and administration of the trail (BLM and NPS 2017). In addition, administration of national historic trails adheres to the policies listed in Director's Order #45, Reference Manual 45, and Manual 6250 (NPS 2013, NPS 2019; BLM 2012). The National Trails System Act of 1968, as amended, governs the activities of the National

[218] The land is owned by the DoD but is currently operating as the Southern California Logistics Airport, which is a public airport used for business, military, and freight use.

Trails System, which includes the Old Spanish National Historic Trail (16 U.S. Code [U.S.C.] § 1241 et seq.).

Lands Managed by State Agencies

Segment F or the corridor would cross land managed by the CSLC in the following locations:

- north of I-15 along Arrowhead Trail;
- north of I-15 and northeast of the unincorporated community of Baker;
- north of I-15 and west of the Valley Wells Rest Area; and
- north of I-15 along Clark Mountain Road.

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

According to the publicly available data reviewed, Segment F would not cross lands managed by local agencies.

3.11.8.2 Impact Discussion

In addition to potential impacts specifically related to Study Area 4B, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segment to impact communities and special land use designations are detailed in the following subsections and summarized in Table 3.11-27: Land Use and Planning Potential Impacts for Study Area 4B.

Table 3.11-27: Land Use and Planning Potential Impacts for Study Area 4B

Potential Impact	Project Phase	Segment R
Divide a community	Construction	No Impact
	O&M	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact
	O&M	Potential Impact

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

Land Uses

Segment F could generally follow existing public roadways and unpaved access roads. A couple small sections of Segment F do not appear to have any existing access, so new temporary or permanent access roads could be needed in those areas during construction and O&M. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

Segment F could occur primarily in open space/public lands and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

Segment F could cross BLM-managed lands, including National Conservation Land of the California Desert and multiple ACECs. Renewable energy development is not considered to be an allowable use within National Conservation Land of the California Desert or the ACECs that would be crossed by Segment F (BLM 2006a). Any work outside of existing easements on BLM-managed land would require a grant of land rights.

In addition, within the BLM's CDCA Plan area, any new pipelines over 12 inches in diameter must be located within one of 16 designated utility planning corridors. Contingent corridors may also be used if a project cannot be sited within one of the designated corridors, but the exception would need to be processed through an amendment to the CDCA Plan (BLM 1980). On BLM-managed land, the western portion of Segment F could briefly cross Designated Corridor G before following Designated Corridor BB for the remainder of the segment, excluding one portion of the segment that leaves the corridor within the Superior-Cronese ACEC. A CDCA Plan amendment would be required for any portion of the alignment that travels outside of these corridors on BLM-managed land.

Further, within the BLM's DRECP area, Segment F could cross BLM-managed land designated as DFAs, GPLs, Conservation Areas, and RMAs. As discussed in Study Area 3C Section 3.6.8.2 Impact Discussion and Study Area 3D Section 3.7.8.2 Impact Discussion, renewable energy-related activities within GPLs require a plan amendment and renewable energy development is allowable in DFAs with the applicable CMAs. Installation of a transmission pipeline may not be a compatible use with Conservation Areas or RMAs due to the additional restrictions and management considerations in these areas (BLM 2016).

Segment F could also cross NPS-managed lands, including the Mojave National Preserve. Land uses, such as pipelines, electric transmission lines, and communication facilities, are considered to be non-conforming uses with the preservation mission and management goals of the preserve (NPS 2002); therefore, construction and O&M of the pipeline could conflict with the management of the preserve.

Segment F could also cross DoD-managed lands, including the former George AFB and MCLB Barstow (and the associated Yermo Annex). George AFB is no longer an active base and is currently being used as a public airport. Because Segment F could cross the airport/former George AFB within public roads, it is likely that construction and O&M of the pipeline would not conflict with operations of the airport or management of the overall property. MCLB Barstow is an active base with the primary mission of procuring, maintaining, and storing supplies and equipment, as well as repairing and rebuilding equipment. Segment F could cross an area within the base that is used as a rifle range (Cardno, Inc. 2020); therefore, construction and O&M of the pipeline could temporarily impact the training/testing operations at this portion of the base. Coordination could determine whether construction and O&M of the pipeline could be an incompatible use in this area. In addition, any work outside of existing easements on DoD-managed land would require the issuance of a new easement.

Segment F could cross the federally administered Old Spanish National Historic Trail multiple times within public roads and on private and federally managed land. The National Historic Trail designation has no effect on the rights of private landowners. On federally managed land, easements or land rights may be granted to cross components of the national trails system (16 U.S.C. § 1248). Although temporary impacts from construction could occur, the pipeline would not be anticipated to permanently impact physical and historical qualities of the trail or interfere with the nature and purposes of the trail. In addition, O&M of the pipeline would not likely conflict with long-term management and use of the trail. Therefore, no conflicts with this trail would be anticipated.

State

Segment F could cross CSLC-managed land in four locations. Any work outside of existing easements on CSLC-managed land would require the issuance of a lease.

Local

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters. Therefore, coordination with local agencies would be anticipated during future planning efforts.

3.11.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, Segment R would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a

result of construction and O&M of the pipeline and corridor; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce potential land use conflicts are shown in Table 3.11-28: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 4B. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.11-28: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 4B

Potential Impact	Potential Avoidance and Minimization Measures
Land use conflicts with ACECs, national conservation land, and a national preserve	The pipeline could be routed outside of these areas, to the extent feasible.
Land use conflict with the CDCA Plan	The pipeline could be fully routed within designated utility planning corridors on BLM-managed land, to the extent feasible.
Land use conflict with the DRECP	The pipeline could be routed outside of GPLs, Conservation Areas, or RMAs, to the extent feasible, or a DRECP amendment could be pursued for the portion of the alignment within GPLs.
Potential land use conflict with DoD-managed land	The pipeline could be routed outside of the applicable bases, to the extent feasible.

3.12 STUDY AREA 4C

3.12.1 Study Area 4C Description

Study Area 4C includes Segments H, O, P, and X of the Evaluated Segments, as depicted in Figure 3.12-1: Study Area 4C Overview Map. These segments would traverse approximately 320 miles of San Bernardino County and the cities of Adelanto, Hesperia, Needles, and Victorville, as well as the town of Apple Valley. These segments are part of the Connection Zone, along with Segments C, F, N, Q, and R of the Evaluated Segments. Table 3.12-1: Jurisdictions Crossed by Study Area 4C details the distance in miles that the segments in Study Area 4C would cross through each jurisdiction. The segments within this study area would generally connect from the California and Arizona state line near the City of Needles in San Bernardino County, travel west through the Sonoran Desert in California, and end north of the ANF and SBNF and connect with Segment I of the Collection Zone.

Table 3.12-1: Jurisdictions Crossed by Study Area 4C

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
H	92	City of Needles	1
		Unincorporated San Bernardino County	91
O	53	City of Hesperia	4
		Unincorporated San Bernardino County	49
P	51	City of Adelanto	2
		Town of Apple Valley	2
		City of Victorville	6
		Unincorporated San Bernardino County	41
X	125	Unincorporated San Bernardino County	125

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

3.12.1.1 Summary of Potential Impacts

Segments H, O, P, and X within this study area are preliminary, and the actual routing, engineering, and design of the Evaluated Segments, and construction methods for each segment have not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, each segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of the segments and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.12-2: Study Area 4C

Potential Impact Summary summarizes the potential impacts identified for the segments within Study Area 4C.

Table 3.12-2: Study Area 4C Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of all segments
Biological Resources	• Potential impacts to species and habitat during construction and O&M of all segments • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M of Segments O, P, and X • Potential impacts to wetlands during construction and O&M of all segments • Potential impacts to wildlife movement and migration corridors during construction and O&M of all segments • Potential to conflict with existing NCCPs/HCPs and other conservation plans during construction and O&M of all segments
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of all segments • Potential to change the significance of an archaeological resource during construction and O&M of all segments • Potential to disturb human remains during construction and O&M of all segments • Potential to change the significance of a TCR during construction and O&M of all segments
Energy	• Potential impacts to existing energy resources during construction of all segments • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of all segments
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of all segments • Potential for a foreseeable upset or accident conditions during construction and O&M of all segments • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for Segment P

Environmental Factor	Potential Impact
	• Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of all segments • Potential to contribute to wildland fires during construction and O&M of Segment O
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of all segments • Potential impacts to ground water quality and/or depletion during construction and O&M of all segments • Potential impacts to floodplains during construction and O&M of all segments
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M of all segments

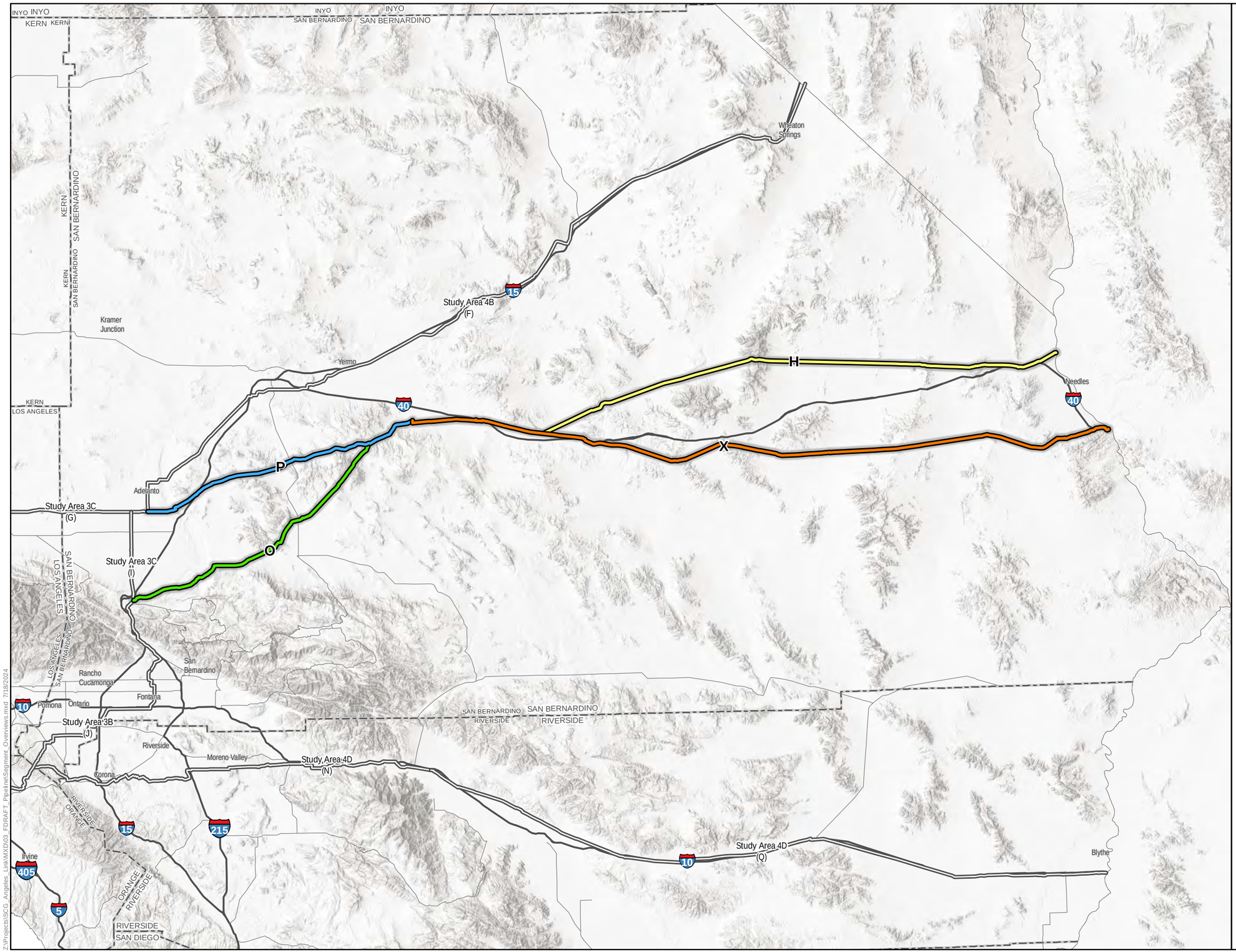

Figure 3.12-1: Study Area 4C Overview Map

Angeles Link Phase 1 Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- H
- O
- P
- X
- Adjacent/Other Study Area Visible

SoCalGas

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3.12.2 Air Quality and Greenhouse Gas Emissions

3.12.2.1 Existing Conditions

Section 3.12.1 Study Area 4C Description provides a description of the segments and the cities and counties that would be crossed by Segments H, O, P, and X. Study Area 4C is comprised of Segments H, O, P, and X.

As depicted in Attachment A: Air Basins and Air Districts Maps, Study Area 4C is located in the MDAB, under the jurisdiction of the MDAQMD. The MDAB is bounded by the Colorado River Valley to the south and east, and by mountains on its remaining sides. The MDAQMD has jurisdiction over San Bernardino County's high desert and portions of Riverside County. The weather within the MDAB tends to be windy, with winds blowing predominately from the south and west. During the summer, a Pacific subtropical high cell that sits off of the coast generally influences the MDAB, inhibiting cloud formation and encouraging daytime solar heating. In the late spring months, high winds from the coastal areas of Southern California blow into the Mojave Desert. During Santa Ana conditions in the fall, hot air from the desert blows into Southern California. The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert.

Attainment Status

Table 3.12-3: Study Area 4C Attainment Status summarizes the current attainment status for criteria air pollutants with the CAAQS and NAAQS within Study Area 4C.

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Air Quality

Mojave Desert Air Quality Management District

The MDAQMD's CEQA and Federal Conformity Guidelines provide direction on calculating the emissions and assessing the potential Criteria air pollutant and GHG impacts from projects within the District (MDAQMD 2020).

Table 3.12-3: Study Area 4C Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
MDAB		
O_3	Nonattainment	Nonattainment and Unclassified/Attainment
$PM_{2.5}$	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segments.
Source: CARB 2023

Table 3.12-4: MDAQMD Criteria Air Pollutant Thresholds for Study Area 4B

Criteria Air Pollutant	Annual Emissions (Tons)	Daily Emissions (Pounds)
CO	100	548
NO_X	25	137
VOC	25	137
SO_X	25	137
PM_{10}	15	82
$PM_{2.5}$	12	65
H_2S	10	54
Lead	0.6	3

Source: MDAQMD 2020

Table 3.12-4: MDAQMD Criteria Air Pollutant Thresholds for Study Area 4B lists the applicable annual and daily emissions thresholds for projects within the MDAQMD's jurisdiction. A multi-phased project (e.g., those with separate construction and operational phases), with phases shorter than one year can be compared to the daily emission threshold while others should use the annual threshold.

Greenhouse Gases

Mojave Desert Air Quality Management District

The MDAQMD has established a daily CO_2e threshold of 548,000 pounds and an annual CO_2e threshold of 100,000 tons for GHG emissions.

3.12.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segments H, O, P, and X, if built, within Study Area 4C are summarized in Table 3.12-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 4C.

Table 3.12-5: Air Quality and Greenhouse Gas Emissions Potential Impacts for Study Area 4C

Potential Impact	Project Phase	Segment H	Segment O	Segment P	Segment X
Air Quality	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact
GHGs	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact

Air Quality

As noted in Table 3.12-3: Study Area 4C Attainment Status, the segments associated with Study Area 4C would be in areas currently classified as nonattainment for O_3 and PM_{10}. Typical impacts to air quality from construction and O&M activities are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.12.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are summarized in Section 3.12.2.3 Potential Avoidance and/or Minimization Measures.

3.12.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 4C and all AMMs are also applicable to this study area.

3.12.3 Biological Resources

3.12.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segments H, O, P, and X. Biological resources in Study Area 4C are under the jurisdiction of the CDFW, BLM, and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 4C; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segments within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that 19 vegetation communities would be present within Study Area 4C segments. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Desert scrub, desert wash, desert succulent scrub, and alkali desert scrub habitats are the predominant habitats present within a 200-foot-wide corridor centered on each segment. The habitats and approximate area of each habitat that would be within each segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segments within Study Area 4C would cross existing Joshua tree, desert riparian, and riverine habitats that would likely be classified as a sensitive natural communities within California. Segment O would cross existing Joshua Tree habitat that is present in areas to the south of the city of Victorville. Segment P would cross existing desert riparian habitat that is present along the Mojave River near the city of Victorville. Segments O and X would cross existing riverine habitat that is present within the Colorado River.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segments in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment H would cross 147 potentially jurisdictional features; Segment O would cross 42 potentially jurisdictional features; Segment P would cross 58 potentially jurisdictional features; and Segment X would cross 143 potentially jurisdictional features. Although

potentially jurisdictional features are discussed in detail in in the Surface Waters subsection of Section 3.12.7.1 Existing Conditions, wetland habitats may be present along these jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, one protected plant species and 12 protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segments H, O, P, and/or X. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near a segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

As detailed in Table 3.12-6: Protected Plant Species Likely to Occur in Study Area 4C, one protected plant species would likely occur within portions of Segment O and/or within 0.25 mile of the segment centerline. No CNDDB records of protected plant species were identified within 0.25 mile of the segment centerline (CDFW 2023d).

This species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Table 3.12-6: Protected Plant Species Likely to Occur in Study Area 4C

Segment	Species Common Name	Listing Status[219]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[220]
O	Joshua tree	SC	2.9	4.5

Sources: CDFW 2023d and CDFW 2023e

[219] Explanation of listing status code:
State listing code:
- SC: State Candidate for listing

[220] The buffer includes 0.25 mile on either side of a segment centerline.

Protected Wildlife

As detailed in Table 3.12-7: Protected Wildlife Species Likely to Occur in Study Area 4C, 12 protected wildlife species would likely occur within portions of Segments H, O, P, and/or X in this study area and/or within 0.25 mile of a segment centerline.

No CNDDB records of protected wildlife species were identified within 0.25 mile of a segment centerline (CDFW 2023d). These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), Segments H, O, P, and X would be located within USFWS-designated critical habitat for the desert tortoise. Segments H, O, P, and X would cross a total of approximately 134.1 miles of USFWS-designated critical habitat for this species. This USFWS-designated critical habitat is present in areas south of Barstow and near I-40 between Kelbaker Road and the City of Needles.

Segment P would be located within USFWS-designated critical habitat for the southwestern willow flycatcher. Segment P would approximately cross 0.08 mile of USFWS-designated critical habitat for this species. This USFWS-designated critical habitat is present in areas where Segment P would cross the Mojave River north of the City of Victorville.

Segment X would be located within USFWS-designated critical habitat for the bonytail. Segment X would cross approximately 0.08 mile of USFWS-designated critical habitat for this species. This USFWS-designated critical habitat is present within the Colorado River near the City of Topock in Arizona.

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segments H, O, P, and X would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 4C.

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segments H, O, P, and X would cross nine BLM-designated ACECs in Study Area 4C. These ACECs are discussed in more detail in Table 3.12-8: Areas of Critical Environmental Concern within Study Area 4C.

Table 3.12-7: Protected Wildlife Species Likely to Occur in Study Area 4C

Segment	Species Common Name	Listing Status[221]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[222]
Amphibians and Reptiles				
H	Desert tortoise[223]	FT, SE	99.6	99.0
O	Arroyo toad[223]	FE	0.0	0.1
	California red-legged frog[223]	FT	3.0	2.2
	Desert tortoise	FT, SE	63.5	63.3
	Western pond turtle[223,224]	FPT	1.4	1.3
P	Arroyo toad[223]	FE	0.0	<0.1
	California red-legged frog	FT	1.5	1.3
	Desert tortoise[223]	FT, SE	91.2	91.0
	Western pond turtle[223,224]	FPT	0.1	0.2
X	Desert tortoise	FT, SE	99.5	98.9

[221] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered
- FT: Federally listed as threatened
- FPT: Federally proposed as threatened

State listing codes:
- SE: State-listed as endangered
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[222] The buffer includes 0.25 mile on either side of a segment centerline.

[223] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

[224] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

Segment	Species Common Name	Listing Status[221]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[222]
Birds				
H	Golden eagle[223,225]	FP	0.1	0.1
	White-tailed kite[223]	FP	0.1	<0.1
O	Golden eagle[223,225]	FP	12.5	17.2
	White-tailed kite[223]	FP	2.6	2.8
P	Golden eagle[223, 225]	FP	2.4	2.2
	Least Bell's vireo[223]	FE, SE	0.0	0.1
	Southwestern willow flycatcher[223]	FE, SE	0.1	0.3
	Tricolored blackbird	ST	0.0	0.1
	White-tailed kite[223]	FP	4.0	3.5
X	Golden eagle[223, 225]	FP	1.0	1.2
	White-tailed kite[223]	FP	0.2	0.3
	Yuma Ridgway's rail[223]	FE, ST	0.0	0.1
Fish				
X	Bonytail[223]	FE, SE	0.1	0.2
	Razorback sucker[223]	FE, SE	0.0	<0.1

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

[225] For bald eagles and golden eagles, a one-mile buffer on either side of a segment centerline was used.

Table 3.12-8: Areas of Critical Environmental Concern within Study Area 4C

Segment	BLM Field Office(s)	ACEC	ACEC Size (acres)	ACEC Miles Crossed	Applicable Goals/Objectives
O	Barstow	Ord-Rodman	239,454	16.1	• Manage area in accordance with the Desert Tortoise Recovery Plan. • Protect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses. • Maintain or improve condition of desert tortoise (*Gopherus agassizii*) habitat.
P	Barstow	Ord-Rodman	239,454	23.4	
X	Barstow	Ord-Rodman	239,454	8.5	
O	Barstow	Granite Mountain Wildlife Linkage	60,175	9.4	• Protect biological values, including habitat quality, populations of sensitive species, sensitive vegetation communities, and landscape connectivity while providing for compatible public uses. • Maintain or improve condition of vegetation. • Protect and enhance sensitive wildlife habitat, including for desert tortoise, golden eagle, LeConte's thrasher (*Toxostoma lecontei*), San Diego pocket mouse (*Chaetodipus fallax*), prairie falcon (*Falco mexicanus*), and Mohave ground squirrel (*Xerospermophilus mohavensis*).
P	Barstow	Northern Lucerne Wildlife Linkage	42,424	9.6	• Protect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses. • Maintain or improve condition of sensitive plant habitat, including Barstow woolly sunflower (*Eriophyllum mohavense*) and Mojave monkeyflower.

Segment	BLM Field Office(s)	ACEC	ACEC Size (acres)	ACEC Miles Crossed	Applicable Goals/Objectives
					• Maintain or improve condition of sensitive wildlife habitat, including burrowing owl, Le Conte's thrasher, prairie falcon, and golden eagle.
X	Barstow	Pisgah Research Natural Area	53,920	6.5	• Protect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses. • Maintain or improve condition of habitat for sensitive plants, including white-margined penstemon (*Penstemon albomarginatus*). • Maintain or improve condition of habitat and connectivity for sensitive wildlife, including desert tortoise, golden eagle, burrowing owl *(Athene cunicularia*), desert bighorn sheep (*Ovis canadensis nelsonii*), American badger (*Taxidea taxus*), Bendire's thrasher (*Toxostoma bendirei*), and Mojave fringe-toed lizard (*Uma scoparia*).
H	Barstow and Needles	Bristol Mountains	236,161	2.4	• Protect biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses. • Maintain or improve condition of vegetation. • Maintain habitat for, and enhance populations of, special status species, including Mojave fringed-toed lizard and desert tortoise. • Protect biodiversity and manage for resilience (protect climate refugia and provide for migration corridors).
X	Barstow and Needles	Bristol Mountains	236,161	42.6	
X	Needles	Chemehuevi	924,159	47.6	• Protect desert tortoise and significant natural resources, including special status plant species, animal species, and natural communities.

Segment	BLM Field Office(s)	ACEC	ACEC Size (acres)	ACEC Miles Crossed	Applicable Goals/Objectives
					• Manage area in accordance with the Desert Tortoise Recovery Plan. • Protect biological values, including habitat quality, populations of sensitive species, climate refugia, and landscape connectivity while providing for compatible public uses. • Minimize impacts to desert washes. • Protect biodiversity and manage for resilience (protect climate refugia and provide for migration corridors).
H	Needles	Piute-Fenner	178,839	10.7	• Maintain or improve condition of habitat and connectivity for sensitive wildlife, including desert tortoise and summer tanager.
H	Needles	Bigelow Cholla Research Natural Area	5,762	3.1	• To preserve area for the protection and study of the Bigelow cholla (*Cylindropuntia bigelovii*). • Protect soil, water and air quality. • Maintain or improve condition of vegetation. • Monitor tortoise populations and manage for recovery of species.
X	Lake Havasu	Beale Slough Riparian and Cultural	2,206	1.8	• Protect and prevent irreparable damage to the relevant characteristics or important values in the ACEC, which include rare riparian resources and wildlife habitat and significant cultural resources.

Sources: BLM 2007 and BLM 2016

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segments O and P would be located within the plan area of the Town of Apple Valley Multi-Species Conservation Plan NCCP/HCP. Segment O would cross approximately 18.0 miles and Segment P would cross approximately 17.7 miles of the NCCP/HCP plan area. Within the 200-foot-wide corridor, Segment O would overlap approximately 435.5 acres of the NCCP/HCP and Segment P would overlap approximately 429.1 acres of the NCCP/HCP.

Furthermore, the centerline of Segment X would cross a CDFW-managed land or conservation easement—the Marble Mountains Wildlife Area—near the town of Chambless. In addition, the centerline of Segment X would be located within 0.25 mile of the CDFW-managed land or conservation easement—the East Mojave Desert—in Study Area 4C. The Special Land Use Designations subsection of Section 3.12.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segments H, O, P, and X would not cross any waterbodies in Study Area 4C that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.12-9: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity for Study Area 4C. The areas with the highest connectivity ranks would occur predominantly within Segments H, O, P, and X where the segments would all converge north of the Rodman Mountains in the Mojave Desert and south of I-40.

Table 3.12-9: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity for Study Area 4C

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors
H	0	9.4	33.5	49.2	0
O	0.2	0	20.1	27.7	4.8
P	5.4	0.5	23.5	20.7	0.7
X	3.5	43.5	11.6	64.5	1.6

Source: CDFW 2019

3.12.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 4C are summarized in Table 3.12-10: Biological Resources Potential Impacts for Study Area 4C.

Protected Species and Their Habitat

Impacts to Protected Amphibian and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 4C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 4C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Fish Species

Typical construction and O&M activities could have the potential to impact protected fish species that may occur within construction areas. Impacts, as previously described in Study Area 3B Section 3.5.3.2 Impact Discussion in the Impacts to Protected Fish Species subsection, would not differ within Study Area 4C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Plant Species

Typical construction and O&M activities could have the potential to impact protected plant species that may occur within construction areas. Impacts, as previously described in Study Area 1B Section 3.2.3.2 Impact Discussion in the Impacts to Protected Plant Species subsection, would not differ within Study Area 4C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Construction and O&M activities could have the potential to result in impacts to riparian habitat or other sensitive natural communities, including Joshua tree, desert riparian, and riverine habitats that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wetlands, Riparian Habitat, or Other Sensitive Natural Communities subsection, would not differ within Study Area 4C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.3.3 Potential Avoidance and/or Minimization Measures.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 4C.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities could conflict with the special management considerations or protection of USFWS-designated critical habitat for the bonytail, desert tortoise, and southwestern willow flycatcher. A more detailed analysis, as well as consultation with USFWS, may be required to determine potential impacts to these critical habitats.

Construction and O&M activities could conflict with the goals and objectives of nine ACECs as detailed in Section 3.12.3.1 Existing Conditions in the Areas of Critical Environmental Concern subsection. Generally, these ACECs define objectives to protect habitat for protected species; however, construction activities could cause temporary and permanent habitat loss and fragmentation within these ACECs. Consultation with the BLM would be required to determine if the Project would be compatible with the goals and objectives of the ACECs.

Construction and O&M activities may conflict with the terms and conditions of the Town of Apple Valley Multi-Species Conservation Plan NCCP/ HCP. The plan is currently in the implementation stage, so additional research would be needed to determine potential conflicts with the plan.

Additionally, construction and O&M activities could conflict with the long-term management provisions of the Marble Mountains Wildlife Area or the East Mojave Desert. However, consultation with the CDFW would be required to determine potential conflicts with these CDFW-managed lands.

Table 3.12-10: Biological Resources Potential Impacts for Study Area 4C

Potential Impact	Project Phase	Segment H	Segment O	Segment P	Segment X
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, and birds; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and plants; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, and birds; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, and fish; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	No Impact	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	No Impact	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP;	Construction	Potential Impact: Conflict with allowable use or management of land	Potential Impact: Conflict with allowable use or management of land	Potential Impact: Conflict with allowable use or management of land.	Potential Impact: Conflict with allowable use or management of land

Potential Impact	Project Phase	Segment H	Segment O	Segment P	Segment X
or other approved local, regional, state, or federal conservation plans	O&M	Potential Impact: Conflict with allowable use or management of land	Potential Impact: Conflict with allowable use or management of land	Potential Impact: Conflict with allowable use or management of land	Potential Impact: Conflict with allowable use or management of land

3.12.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These AMMs are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-11: Biological Resources Potential Avoidance and Minimization Measures in Study Area 1B. The impacts would not differ within Study Area 4C.

3.12.4 Cultural Resources and Tribal Cultural Resources

3.12.4.1 Existing Conditions

A total of 590 previously documented resources have been identified within the 0.25-mile buffer of Study Area 4C, as detailed in Table 3.12-11: Existing Cultural Resources in Study Area 4C. Of these resources, 122 are within a 200-foot-wide pipeline corridor (comprising 100 feet on either side of the segment centerline).

Table 3.12-11: Existing Cultural Resources in Study Area 4C

Segment	Relationship to Segment	Total Identified Resources
H	Within[226]	19
	0.25 mile	33
O	Within	16
	0.25 mile	97
P	Within	24
	0.25 mile	79
X	Within	63
	0.25 mile	259

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 4C was not available. Until further information can be acquired, all of the 122 cultural resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.12.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segments H, O, P, and X, if built, within Study Area 4C are summarized in Table 3.12-12: Cultural and Tribal Resources Potential Impacts in Study Area 4C. All known eligible and unevaluated resources within Study Area 4C were analyzed to determine if Segments H, O, P, and X or the 200-foot-wide corridor could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

[226] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

Table 3.12-12: Cultural and Tribal Resources Potential Impacts in Study Area 4C

Potential Impact	Project Phase	Segment H, O, P, and X
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Additional resources may be present in Study Area 4C that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary routes for Segments H, O, P, and X, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.12.4.3 Potential Avoidance and/or Minimization Measures.

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources subsection. Construction and O&M activities would have the potential for direct impacts to historical resources identified within the segments in this study area.

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.4.3 Potential Avoidance and/or Minimization Measures.

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for all segments in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Constructions and O&M activities would have the potential for direct impacts to human remains for all segments in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Constructions and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during Assembly Bill 52 consultation with tribes.

3.12.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.12.5 Energy

3.12.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within San Bernardino County that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 4C.

Existing Local Energy Use

Electricity

Within Study Area 4C, SCE is the primary provider of electricity (SCE 2023). Additional information about SCE's programs and RPS requirements is included in Study Area 1B Section 3.2.5.1 Existing Conditions in the Existing Local Energy Use subsection. As detailed in Table 3.12-13: Electricity Consumption in 2022 for Counties Crossed by Study Area 4C, approximately 16 billion kWh were consumed in San Bernardino County in 2022.

Table 3.12-13: Electricity Consumption in 2022 for Counties Crossed by Study Area 4C

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
San Bernardino County	6,301.9	10,327.8	**16,629.6**

Source: CEC 2022a

Natural Gas

Within Study Area 4C, SoCalGas provides natural gas service (SoCalGas 2024). As detailed in Table 3.12-14: Natural Gas Consumption in 2022 for Counties Crossed By Study Area 4C, approximately 562 million therms[227] were consumed in San Bernardino County in 2022.

Diesel and Gasoline

Within Study Area 4C, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

[227] One therm is equal to 100,000 Btu, or 100 kBtu.

Table 3.12-14: Natural Gas Consumption in 2022 for Counties Crossed By Study Area 4C

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
San Bernardino County	267.3	294.8	**562.1**

Source: CEC 2022a

As detailed in Table 3.12-15: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 4C, approximately 915 million gasoline fuel sales and 258 million diesel fuel sales were estimated in San Bernardino County.

Table 3.12-15: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 4C

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
San Bernardino County	915	258

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation. However, information on local land use policies related to energy are provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Desert Renewable Energy Conservation Plan

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Desert Renewable Energy Conservation Plan subsection, the DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties (BLM 2016). Portions of Study Area 4C would cross private lands and existing BLM-managed lands that are designated within the DRECP as DFAs, GPLs, RMAs, and Conservation Areas, as depicted in Attachment C: Energy Resources Maps. However, all of the segments within Study Area 4C follow existing SoCalGas pipeline corridors.

Solar Resource Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other (CEC 2024). According to the Solar Resources dataset from the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, a majority of Segments O and P within Study Area 4C overlap the Tehachapi Solar Resource Area.

San Bernardino County

As discussed in Study Area 3B Section 3.5.5.1 Existing Conditions in the San Bernardino County subsection, county-level regulations outlined in the County of San Bernardino General Plan provide strategies and policies for promoting renewable energy development. No separate renewable energy plan has been developed for San Bernardino County (County of San Bernardino 2019). Segments H, O, P, and X within Study Area 4C would not overlap any approved or in-progress PV solar-generation facilities within San Bernardino County (CEC 2023c).

3.12.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 4C are summarized in Table 3.12-16: Study Area 4C Potential Energy Impacts.

Table 3.12-16: Study Area 4C Potential Energy Impacts

Potential Impact	Project Phase	Segment H	Segment O	Segment P	Segment X
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	No Impact	No Impact	No Impact	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	No Impact	No Impact	No Impact	No Impact

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.5.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection and the Study Area 1B Section 3.2.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Areas 1A and 1B and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.5.3 Potential Avoidance and/or Minimization Measures.

3.12.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.12.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A.

3.12.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 4C.

3.12.6.1 Existing Conditions

Section 3.12.1 Study Area 4C Description provides a description of each segment, as well as the counties and cities through which each segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 4C are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed approximately four open cases and five closed hazardous materials cases within 1,000 feet of Segment P in Study Area 4C. Open hazardous materials sites are detailed in Table 3.12-17: Open Hazardous Materials Sites Within 1,000 Feet of Study Area 4C.

Table 3.12-17: Open Hazardous Materials Sites Within 1,000 Feet of Study Area 4C

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[228] (feet)	Media Affected	Regulatory Status
GeoTracker Sites				
George Air Force Base - Dp034 Seda Ou3 Munitions Burial	P	54	Soil	Open - Verification Monitoring
George Air Force Base - Sr401 Grenade Range	P	188	Aquifer used for drinking water supply, Soil, Under Investigation	Open - Site Assessment
George Air Force Base - Wp040 Seda Ou3 Chemical Toilet Sludge	P	411	Soil	Open - Site Assessment

[228] Distances were calculated based on the approximate center point coordinates provided by GeoTracker and EnviroStor. Depending on the actual property boundaries of each hazardous materials site and/or facility, these sites may be closer than specified.

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[228] (feet)	Media Affected	Regulatory Status
George Air Force Base - Ss052 Seda Ou3 Creosote Spill Area	P	713	Soil	Open - Remediation

Sources: DTSC 2024 and SWRCB 2024

Fire Hazards

The CAL FIRE FHSZs that would be crossed by the Study Area 4C segments are detailed in Table 3.12-18: Fire Hazard Severity Zones Crossed by Study Area 4C. Study Area 4C would be located within SRAs and LRAs. These areas are recognized by the Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency. Segment O is the only segment in 4C that would be located within High or Very High FHSZs within an SRA.

Table 3.12-18: Fire Hazard Severity Zones Crossed by Study Area 4C

FHSZ	Segment H (miles)	Segment O (miles)	Segment P (miles)	Segment X (miles)
SRA				
Moderate	--	3.7	--	--
High	--	16.0	--	--
Very High	--	0.2	--	--
LRA				
Non-Wildland/Non-Urban	--	1.0	--	0.9
Urban Unzoned	--	--	--	--
Moderate	8.7	14.4	22.3	12.6

Source: CAL FIRE 2024

Schools and Day-Care Centers

No schools or day-care centers are within 0.5 mile of Segments H, O, P, or X (U.S. Department of Homeland Security 2024).

Airports

Three airports are located within two miles of Segments H, O, and P. The Eagle Airpark is located 1.5 miles southeast of Segment H. The Hesperia Airport is located 0.4 mile north of Segment O. The Southern California Logistics Airport is located 1.6 miles north of Segment P. Segments H, O, and P are not located within planning boundaries or areas of influence designated for the Eagle Airpark, Hesperia Airport, or Southern California Logistics Airport. There are no airports located within two miles of Segment X.

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segments H, O, P, and X in Study Area 4C is managed by the following plans:

- San Bernardino County EOP (County of San Bernardino 2019) and
- 2022 San Bernardino County MJHMP (County of San Bernardino 2022).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

3.12.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segments within Study Area 4C are summarized in Table 3.12-19: Study Area 4C Potential Impacts.

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Based on the resources present in this study area, construction and O&M activities would be anticipated to have a potential for temporary or permanent impact to the public or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.6.3 Potential Avoidance and/or Minimization Measures.

Table 3.12-19: Study Area 4C Potential Impacts

Potential Impact	Project Phase	Segment H	Segment O	Segment P	Segment X
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	No Impact	No Impact	No Impact	No Impact
	O&M	No Impact	No Impact	No Impact	No Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	No Impact	No Impact	Potential Impact	No Impact
	O&M	No Impact	No Impact	Potential Impact	No Impact
Public Airport and/or Private Airstrip Hazards	Construction	No Impact	No Impact	No Impact	No Impact
	O&M	No Impact	No Impact	No Impact	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact
Wildland Fires	Construction	No Impact	Potential Impact	No Impact	No Impact
	O&M	No Impact	Potential Impact	No Impact	No Impact

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities would have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

No schools or day-care centers are located within 0.5 mile of Segments H, O, P, or X. Therefore, there is no potential for temporary or permanent impacts to schools during construction and O&M.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Existing Hazardous Materials Sites Listed in Government Code Section 65962.5 subsection.

Based on the four open cases identified within 1,000 feet of Segment P within Study Area 4C, temporary or permanent impacts may occur due to existing subsurface contamination that may be present during construction or O&M. Construction and O&M activities would have a potential for existing hazardous materials sites to create a significant hazard to the public or the environment. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

As previously discussed, Segments H, O, P, and X are not located within planning boundaries or areas of influence designated for the Eagle Airpark, Hesperia Airport, or Southern California Logistics Airport. Therefore, no safety concerns would be anticipated from construction or O&M activities.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.12.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

Typical impacts and wildfire prevention practices that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Wildland Fires subsection. As previously discussed, CAL FIRE FHSZs

would be crossed by Study Area 4C. Approximately 0.2 mile of Segment O would be located within a Very High FHSZ within an SRA. High heat or sparks from vehicles or equipment would have the potential to ignite dry vegetation and cause fires. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.12.6.3 Potential Avoidance and/or Minimization Measures.

3.12.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B. The impacts that could be anticipated within Study Area 4C would not be expected to differ from those identified within Study Areas 1A and 1B.

3.12.7 Hydrology and Water Quality

3.12.7.1 Existing Conditions

Study Area 4C includes Segments H, O, P, and X, which are located in RWQCB Lahontan Region 6 and Colorado River Region 7. Water resources in these areas are also under the jurisdiction of CDFW Inland Deserts Region 6 and USACE Los Angeles District.

The following subsections discuss hydrological resource existing conditions in Study Area 4C; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for pipeline segments within this study area.

Surface Waters

The study area would cross 30 USGS watersheds (USGS 2023a). A list of the watersheds that would be crossed by each segment within the study area is included in Table 3.12-20: USGS Watersheds Crossed by Study Area 4C.

Table 3.12-20: USGS Watersheds Crossed by Study Area 4C

Segment	USGS Watersheds Crossed
H	Broadwell Lake, Clipper Valley Wash, Devils Playground Wash, Lanfair Valley, Lower Piute Wash, Lower Watson Wash, Topock Marsh-Colorado River, Upper Homer Wash, Upper Kelso Wash, Upper Watson Wash
O	Apple Valley Dry Lake, Bell Mountain Wash-Mojave River, Crystal Creek-Lucerne Lake, Ericksen Dry Lake, Lytle Creek, Silver Creek-Rabbit Lake, Troy Lake
P	Bell Mountain Wash-Mojave River, North Lucerne Valley, Stoddard Valley, Troy Lake, Wild Wash
X	Amboy Crater, Broadwell Lake, Clipper Wash, Lake Havasu-Colorado River, Lava Hills, Lower Watson Wash, Marble Mountains, Orange Blossom Wash, Schulyler Wash, Sunshine Peak-Lavic Lake, Topock Marsh-Colorado River, Troy Lake, Upper Chemehuevi Wash, Upper Homer Wash

Source: USGS 2023a

Based on the review of the NWI ([USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Segment H would cross nine named waterbodies and 138 unnamed waterbodies; Segment O would cross one named waterbody and 41 unnamed waterbodies; Segment P would cross three named waterbodies and 55 unnamed waterbodies; and Segment X would cross 13 named waterbodies and 130 unnamed waterbodies. A list of all named waterbodies crossed by the study area are included in

Table 3.12-21: Named Waterbodies Crossed by Study Area 4C. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- 32 artificial waterways,
- two connectors between waterways,
- one pipeline, and
- 352 streams/rivers.

Impaired Surface Waters

According to the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2023a), one impaired waterbody would be crossed by Segment P, one impaired waterbody would be crossed by Segment O, and one impaired waterbody would be crossed by Segment X as listed in Table 3.12-22: Impaired Waterbodies Crossed by Study Area 4C. Details regarding the pollutants that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report (SWRCB 2022). The listings associated with the waterbodies specify that fluoride, manganese, dissolved oxygen, sodium, sulfates, total dissolved solids, toxic inorganics, salinity/total dissolved solids/chlorides/sulfates, and low dissolved oxygen are the pollutants causing a lack of water quality standards for certain waterbodies within the study area and does not identify a source of the pollutants.

Floodplains

The FEMA Flood Hazard Layer (FEMA 2023) indicates that the study area would cross several floodplains, including the 500-year and 100-year-floodplains. Floodplains that would be crossed by the segments within the study area are depicted in Attachment E: Hydrological Maps.

Groundwater

The study area would cross 14 groundwater basins (DWR 2022a). Segment H would cross the Needles Valley, Piute Valley, Ward Valley, Fenner Valley, Kelso Valley, and Broadwell Valley groundwater basins. Segment O would cross the Kane Wash Area, Lucerne Valley, Upper Mojave River Valley, and Upper Santa Ana Valley-Cajon groundwater basins. Segment P would cross the Upper Mojave River Valley, Middle Mojave River Valley, Kane Wash Area, and Lower Mojave River Valley groundwater basins. Segment X would cross the Lower Mojave River Valley, Lavic Valley, Broadwell Valley, Bristol Valley, Fenner Valley, Ward Valley, Chemehuevi Valley, and Needles Valley groundwater basins.

Publicly available data from the DWR (DWR 2022b) was reviewed to estimate existing depths to groundwater. Groundwater readings from 36 monitoring wells located within two miles of the study area were reviewed as listed in Table 3.12-23: Groundwater Readings within Two Miles of Study Area 4C.

Table 3.12-21: Named Waterbodies Crossed by Study Area 4C

Waterbody Name	Segment(s) Crossed	Waterbody Classification
Cottonwood Wash	H	Stream/river
Black Canyon Wash	H	Stream/river
Winston Wash	H	Stream/river
Watson Wash	H, X	Stream/river
Crestview Wash	H	Artificial waterway
Budweiser Wash	H	Stream/river
Broadwell Wash	H, X	Stream/river
Woods Wash	H	Stream/river
Argos Wash	H, X	Stream/river
Siberia Wash	X	Stream/river
Bat Cave Wash	X	Stream/river
Van Winkle Wash	X	Stream/river
Cut Wash	X	Stream/river
Homer Wash	X	Artificial waterway
Old Dad Mountains Wash	X	Stream/river
Clipper Wash	X	Stream/river
Orange Blossom Wash	X	Stream/river
Colorado River	X	Artificial waterway
Willow Spring Wash	X	Artificial waterway
Mojave River	O, P	Artificial waterway
Bell Mountain Wash	P	Stream/river
Kane Wash	P	Stream/river

Source: USGS 2023b

Table 3.12-22: Impaired Waterbodies Crossed by Study Area 4C

Waterbody Name[229]	RWQCB Jurisdiction	Segment Crossed	Pollutant
Mojave River (Upper Narrows to Lower Narrows)	Regional Board 6 – Lahontan Region	P	Fluoride, manganese, dissolved oxygen, sodium, sulfates, total dissolved solids
Mojave River (Mojave Forks Reservoir outlet to Upper Narrows)	Regional Board 6 – Lahontan Region	O	Toxic inorganics, salinity/total dissolved solids/chlorides/sulfates, toxic inorganics
Lake Havasu	Regional Board 7 – Colorado River Basin Region	X	Low dissolved oxygen

Source: SWRCB 2022a

Table 3.12-23: Groundwater Readings within Two Miles of Study Area 4C

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
O	29	36.3	442.9
P	7	9.8	18.3

Source: DWR 2022a

The 2022 and 2023 groundwater depth readings at these monitoring wells ranged from 9.8 to 442.9 bgs. Groundwater levels within the study area are expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

3.12.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M Segments H, O, P, and X are summarized in Table 3.12-24: Study Area 4C Potential Impacts.

[229] Waterbody names of impaired waterbodies are based on data from the SWRCB California 2020-2022 Integrated Report and may differ from waterbody names included in Table 3.12-21: Named Waterbodies Crossed by Study Area 4C, which are taken from USGS NHD data.

Table 3.12-24: Study Area 4C Potential Impacts

Potential Impact	Project Phase	Segment H	Segment O	Segment P	Segment X
Water Quality Degradation	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact

Surface Waters

As detailed in Section 3.12.7.1 Existing Conditions in the Surface Waters subsection, Study Area 4C would cross 387 mapped waterbodies, including: nine named waterbodies and 138 unnamed waterbodies that would be crossed by Segment H; one named waterbody and 41 unnamed waterbodies that would be crossed by Segment O; three named waterbodies and 55 unnamed waterbodies that would be crossed by Segment P; and 13 named waterbodies and 130 unnamed waterbodies that would be crossed by Segment X. Segment P, Segment O, and Segment X would each cross one impaired waterbody as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for segments that would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.12.7.3 Potential Avoidance and/or Minimization Measures.

Floodplains

Segments H, O, P, and X would be installed within and across the floodplains that are detailed in Section 3.12.7.1 Existing Conditions in the Floodplains subsection. Typical

impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area that would cross floodplains. Construction and O&M activities would likely not cause permanent impacts related to floodplains. Potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.12.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 4C, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.12.7.3 Potential Avoidance and/or Minimization Measures.

3.12.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segments H, O, P, and X. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 4C and could be implemented to avoid or reduce potential impacts to segments within this study area.

3.12.8 Land Use and Planning

3.12.8.1 Existing Conditions

Section 3.12.1 Study Area 4C Description provides a description of each segment and Table 3.12-1: Jurisdictions Crossed by Study Area 4C details the distance the segments would traverse each local jurisdiction within Study Area 4C.

Land Use

Most of Segment H would roughly travel along unpaved roads through open space/public land. The eastern terminus of the segment would travel through a rural residential area.

Most of Segment O would roughly travel along unpaved roads, excluding the crossing of the Mojave River. The western portion of the segment would travel through primarily rural residential areas with some smaller open space/public land, commercial, industrial, and agricultural areas. The eastern portion of the segment would travel through primarily open space/public lands with some smaller agricultural and rural residential areas.

Most of Segment P would roughly travel along unpaved roads, excluding some paved roads within the cities of Adelanto and Victorville and the crossing of the Mojave River. The western portion of the segment would travel through primarily residential and industrial areas with some smaller commercial, mixed use, planned development, and open space/public land areas. The eastern portion of the segment would travel through open space/public lands.

Most of Segment X would roughly travel along unpaved roads through open space/public land. The eastern terminus of the segment would travel through a commercial area.

General plan land use designations that would be crossed by the segment and corridor within each jurisdiction within Study Area 4C are detailed in Table 3.12-25: General Plan Designations Crossed by Study Area 4C.[230]

[230] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.12-25: General Plan Designations Crossed by Study Area 4C

Segment	Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[231] (acres)
H	City of Needles	Low-Density Residential	0.6	15.9
		Open Space and Public Lands	<0.1	1.2
	San Bernardino County	Low-Density Residential	N/A[232]	0.1
		Open Space and Public Lands	91.3	2,213.9
O	City of Hesperia	Industrial	<0.1	0.2
		Low-Density Commercial	<0.1	0.9
		Low-Density Residential	1.5	36.7
		Medium-Density Residential	0.9	23.3
		Open Space and Public Lands	0.7	16.7
		Planned Development	0.5	12.7
	San Bernardino County	Agricultural	2.4	63.1
		Industrial	1.0	24.5
		Low-Density Residential	N/A[232]	0.2
		Medium-Density Residential	4.2	2,573.0
		Open Space and Public Lands	23.1	3,024.7
P	City of Adelanto	Industrial	1.7	28.3
		Low-Density Commercial	N/A[232]	9.0
		Mixed Use	N/A[232]	0.1
		Planned Development	N/A[232]	2.4
	City of Victorville	Industrial	1.0	29.8
		Low-Density Commercial	0.3	6.2

[231] The corridor includes 100 feet on either side of the pipeline.
[232] This is not applicable because the pipeline would not cross the land use designation.

Segment	Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[231] (acres)
		Medium-Density Residential	0.6	12.1
		Open Space and Public Lands	0.7	18.3
		Planned Development	2.9	77.2
	Town of Apple Valley	Low-Density Commercial	0.5	10.7
		Low-Density Residential	1.8	42.5
		Medium-Density Residential	<0.1	2.6
		Open Space and Public Lands	0.1	2.0
	San Bernardino County	Industrial	0.1	3.5
		Low-Density Commercial	1.2	30.3
		Medium-Density Residential	3.7	90.4
		Open Space and Public Lands	35.2	853.2
		Planned Development	<0.1	1.2
X	San Bernardino County	Low-Density Commercial	0.4	9.5
		Medium-Density Residential	0.1	3.0
		Open Space and Public Lands	124.2	3,009.0

Source: California Governor's OPR 2024

Special Land Use Designations

As described in the following subsections and detailed in Table 3.12-26: Agency-Managed and Protected Lands Crossed by Study Area 4C, Table 3.12-27: Linear Infrastructure and Protected Trails by Study Area 4C, and Attachment F-1: Special Land Use Designations Maps, Segments H, O, P, and X would cross lands managed by federal, state, and local agencies. Section 3.12.3 Biological Resources contains a discussion of HCP/NCCP Conservation Plan boundaries that the segments would cross within Study Area 4C. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Lands Managed by Federal Agencies

Most of Segments H, P, and X would cross land managed by the BLM. Segment O would also cross BLM-managed land, but mostly along the eastern portion of the segment. The Areas of Environmental Concern (ACECs) that would be crossed by these segments are detailed in Table 3.12-8: Areas of Critical Environmental Concern within Study Area 4C. One ACEC is managed by the Lake Havasu Office under the Lake Havasu Field Office Resource Management Plan (BLM 2007). The remainder of the ACECs are managed by the BLM's Barstow or Needles Field Offices under the DRECP and do not allow renewable energy development (BLM 2016). As detailed in Attachment F-2: Management and Conservation Plans Map, BLM-managed land in Study Area 4C is managed under the CDCA Plan (BLM 1980), as well as the DRECP, West Mojave Plan (BLM 2006), Northern & Eastern Mojave Desert Management Plan (BLM 2002b), and Northern & Eastern Colorado Desert Coordinated Management Plan (BLM 2002a), which are LUPAs to the CDCA Plan.

Segments H, O, P, and X or the corridors would also cross the following National Conservation Lands on BLM-managed land:

- National Conservation Land of the California Desert,
- Clipper Mountain Wilderness,
- Rodman Mountains Wilderness,
- Trilobite Wilderness, and
- Mojave Trails National Monument.

National Conservation Land of the California Desert was designated under the DRECP and is closed to all energy development (BLM 2023b). National monuments are created by U.S. Presidents using the authority granted by the Antiquities Act of 1906 (54 U.S.C. § 320301 et seq.). Administration of national monuments, national conservation areas, and other similar designations adhere to the policies listed in the BLM Manual 6220, which includes avoiding granting new ROWs or authorizing use of utility corridors within these areas (BLM 2017). Wilderness areas are designated by the U.S. Congress in accordance with the Wilderness Act of 1964 (16 U.S.C § 1131 et seq.), which directs federal land management agencies to preserve the wilderness character of these areas, including prohibiting new commercial enterprises, installations, and roads (16 U.S.C § 1133(c)). Administration of wilderness areas adheres to the policies listed in Manual 6340 (BLM 2012).

Table 3.12-26: Agency-Managed and Protected Lands Crossed by Study Area 4C

Segment	Agency	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[233] (acres)
Federal				
H	BLM	BLM-Managed Land	43.2	1,047.1
		Bigelow Cholla RNA ACEC	3.1	75.2
		Bristol Mountains ACEC	2.4	57.4
		Mojave Trails National Monument	21.8	530.0
		National Conservation Land of the California Desert	21.5	520.9
		Piute-Fenner ACEC	10.7	259.0
	NPS	Mojave National Preserve	41.9	1,015.2
		Mojave Wilderness	N/A[234]	0.8
O	BLM	BLM-Managed Land	16.5	399.8
		Granite Mountain Wildlife Linkage ACEC	9.4	228.1
		National Conservation Land of the California Desert	15.0	363.1
		Ord-Rodman ACEC	16.1	390.7
	USFS	SBNF	0.9	21.8
P	BLM	BLM-Managed Land	29.2	708.2
		National Conservation Land of the California Desert	23.3	555.6
		Northern Lucerne Wildlife Linkage ACEC	9.6	233.6
		Ord-Rodman ACEC	23.3	566.3

[233] The corridor includes 100 feet on either side of the pipeline.
[234] This is not applicable because the pipeline would not cross the special land use.

Segment	Agency	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[233] (acres)
		Rodman Mountains Wilderness	N/A[234]	4.1
	DoD	Former George AFB	N/A[234]	2.6
X	BLM	BLM-Managed Land	111.8	2,688.3
		Beale Slough Riparian and Cultural ACEC	1.8	42.7
		Bristol Mountains ACEC	42.6	984.3
		Chemehuevi ACEC	47.6	1,145.2
		Clipper Mountain Wilderness	N/A[234]	<0.1
		Mojave Trails National Monument	103.0	2,496.1
		National Conservation Land of the California Desert	109.6	2,644.7
		Ord-Rodman ACEC	8.5	207.1
		Pisgah RNA ACEC	6.5	157.2
		Rodman Mountains Wilderness	N/A[234]	4.1
		Trilobite Wilderness	N/A[234]	47.7
	USFWS	Havasu National Wildlife Refuge	0.1	2.6
State				
H	CSLC	CLSC-Managed Land	2.3	55.9
P	CSLC	CLSC-Managed Land	1.4	34.2
X	CDFW	Marble Mountains Wildlife Area	1.2	61.3
		CDFW-Managed Land	N/A[234]	0.4
	CSLC	CLSC-Managed Land	1.4	33.1

Segment	Agency	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[233] (acres)
City				
O	City of Hesperia	Hesperia Lake Park	0.7	16.3

Sources: BLM 2022, BLM 2023a, BLM 2023c, BLM 2023d, BLM 2023e, CDFW 2023a, DISDI 2024, GreenInfo Network 2023

Table 3.12-27: Linear Infrastructure and Protected Trails by Study Area 4C

Segment	Agency	Special Land Use	Number of Times Crossed
Federal			
P	NPS	Old Spanish National Historic Trail	1
State			
O	DWR	California Aqueduct (East Branch)	1

Sources: BLM 2023e, USGS 2023

The central portion of Segment H would cross the Mojave National Preserve, which includes the Mojave Wilderness and is managed by the NPS under the Mojave National Preserve General Management Plan (NPS 2002). The plan states that if ROW is no longer needed or it is being converted to new technology, the NPS will seek to relocate the ROW outside the Mojave National Preserve. The NPS developed the 2006 Management Policies, Director's Order #41, and Reference Manual 41 to provide specific policies that address wilderness management and stewardship (NPS 2006; NPS 2013a; NPS 2023).

The eastern terminus of Segment X would cross the Havasu National Wildlife Refuge, which is managed by the USFWS as part of the National Wildlife Refuge System. The USFWS Service Manual Parts 340 and 601 to 603 provide policies and guidance for wildlife refuge management, including compatible use determinations and discouraging the types of uses included in ROW requests (USFWS 2023).

The Segment P corridor would cross the former George AFB along Rancho Road near the City of Adelanto. The land is owned by the DoD but is currently operating as the Southern California Logistics Airport, which is a public airport used for business, military, and freight use.

The western portion of Segment O would cross the SBNF, which is managed by the USFS under the SBNF LMP (USFS 2006).

Segment P would also cross the Old Spanish National Historic Trail along the Mojave River, east of the intersection of Turner Road and National Trails Highway. The trail is jointly managed by the BLM and NPS. The BLM's Utah State Director leads the BLM's co-administration effort and the National Trails office for Regions 6, 7, and 8 leads the NPS co-administration effort. The Old Spanish National Historic Trail Comprehensive Administrative Strategy outlines the operating procedures for planning, development, and administration of the trail (BLM and NPS 2017). In addition, administration of national historic trails adheres to the policies listed in Director's Order #45, Reference Manual 45, and Manual 6250 (NPS 2013b, NPS 2019; BLM 2012). The National Trails System Act of 1968, as amended, governs the activities of the National Trails System, which includes the Old Spanish National Historic Trail (16 U.S.C. § 1241 et seq.).

Lands Managed by State Agencies

Segment X would cross the Marble Mountains Wildlife Area, which contains habitat for golden eagle and desert tortoise and is managed by the CDFW (CDFW 2023b). The Segment X corridor would also briefly cross a CDFW-managed property located east of Homer Wash and west of U.S. Route 95.

Segments H, P, and X would cross land managed by the CLSC in the following locations:

- between SR-247 and I-15;
- south of I-40 and north of National Trails Highway;
- south of I-40 and east of Kelbaker Road;
- west of U.S. Route 95 and north of the Stepladder Mountains Wilderness;
- along Volcan Mind Road southwest of Providence Mountains State Recreation Area; and
- along Volcan Mind Road southeast of Providence Mountains State Recreation Area.

Segment O would cross the California Aqueduct (East Branch) in a location south of the intersection of Summit Valley Road and Jenny Street outside of the City of Hesperia. The aqueduct is managed by the DWR.

The segments would also cross state highways managed by Caltrans.

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segment O would cross Hesperia Lake Park, which is managed by the City of Hesperia.

3.12.8.2 Impact Discussion

In addition to potential impacts specifically related to Study Area 4C, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segments to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.12-28: Land Use and Planning Potential Impacts for Study Area 4C.

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community. These would be the same for Study Area 4C.

Table 3.12-28: Land Use and Planning Potential Impacts for Study Area 4C

Potential Impact	Project Phase	Segment H	Segment O	Segment P	Segment X
Divide a community	Construction	No Impact	No Impact	No Impact	No Impact
	O&M	No Impact	No Impact	No Impact	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact	Potential Impact	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact	Potential Impact	Potential Impact

Land Uses

Segments within Study Area 4C could generally follow existing SoCalGas pipeline corridors and/or public roadways. A couple small sections of Segments O and P do not appear to have any existing access, so new temporary or permanent access roads could be needed in those areas during construction and O&M. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses.

The segments could occur primarily in open space/public lands and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

The segments or the associated corridors could cross BLM-, NPS-, and USFWS-managed lands with special management considerations (i.e., ACECs, a national monument, wilderness, national conservation land, a national preserve, and a national wildlife refuge). These types of designations provide for protection of plants and animals, habitat, cultural resources, and/or other resources, and generally discourage or do not allow new utility scale projects (BLM 1980, 2002a, 2002b, 2006, 2007, 2012, 2016, 2017, 2023b; NPS 2006, 2013a, 2023; USFWS 2023). Although construction impacts would be temporary, the segments could be inconsistent with the goals, objectives, and/or mission of these areas and may not be an allowable or compatible use. Existing SoCalGas pipeline corridors would traverse these areas, but any new

construction for the segments may still not be an allowable or a compatible use. Coordination with the applicable agencies could determine whether construction and O&M of the pipeline could be compatible with these areas. In addition, any work outside of existing easements would require a grant of land rights.

In addition, within the BLM's CDCA Plan area, any new pipelines over 12 inches in diameter must be located within one of 16 designated utility planning corridors. Contingent corridors may also be used if a project cannot be sited within one of the designated corridors, but the exception would need to be processed through an amendment to the CDCA Plan (BLM 1980). On BLM-managed land, Segment O could follow Designated Corridor H; Segment P could briefly follow Designated Corridors D and H; Segment X could follow Designated Corridors G, H, G-H, and G-H-I; and Segment H could briefly cross Designated Corridors G and R-E. A CDCA Plan amendment would be required for the portion of Segments P and H that travel outside of these corridors on BLM-managed land.

Further, within the BLM's DRECP area, the segments could cross BLM-managed land designated as GPLs, Conservation Areas, and RMAs. Segment P would also cross land designated as DFAs. As discussed in Study Area 3C Section 3.6.8.2 Impact Discussion and Study Area 3D Section 3.7.8.2 Impact Discussion, renewable energy-related activities within GPLs require a plan amendment and renewable energy development is allowable in DFAs with the applicable CMAs. Installation of a transmission pipeline may not be a compatible use with Conservation Areas or RMAs due to the additional restrictions and management considerations in these areas (BLM 2016).

Segment O could also cross the SBNF within the USFS's BC designations. Segment O could partially follow an existing SoCalGas pipeline corridor within USFS-managed land. Major utility corridors are allowed in designated areas (i.e., the I-15 corridor, which is a designated utility corridor and includes SR-138) within the BC designation. In addition, renewable energy resources are considered a suitable use in the BC designation (USFS 2006). Work outside of existing easements would require a grant of land rights.

Segment P could cross the former George AFB, which is currently being used as a public airport. Because the segment could cross the airport/former George AFB within public roads, it is likely that construction and O&M of the pipeline would not conflict with operations of the airport or management of the overall property. In addition, this portion of Segment P could follow an existing SoCalGas pipeline corridor. Any work outside of existing easements on DoD-managed land would require the issuance of a new easement.

Segment P could cross the federally administered Old Spanish National Historic Trail on private land. The National Historic Trail designation has no effect on the rights of private landowners. Although temporary impacts from construction could occur, the pipeline would not be anticipated to permanently impact the scenic or historical qualities of the trail or interfere with the nature and purpose of the trail. In addition, O&M of the pipeline would not be anticipated to conflict with the long-term management and use of the trail. Therefore, no conflicts with this trail would be anticipated.

State

The segments could cross state-managed linear infrastructure, including the California Aqueduct and state highways. The segments could require encroachment permits from the DWR and Caltrans for these crossings.

Segments H, P, and X could cross CSLC-managed land. Any work outside of existing easements on CSLC-managed land would require the issuance of a lease.

Segment X could cross CDFW-managed land, including a wildlife area and an unnamed property. CDFW wildlife areas are maintained primarily for ecological conservation, restoration, preservation, and development and management of wildlife and wildlife habitat and hunting (14 CCR § 551). In addition, the unnamed property could have an underlying conservation easement that permanently limits uses of the land to protect specific conservation values (e.g., species or habitat). Although most impacts would be temporary, construction of the pipeline could conflict with these land uses. An existing SoCalGas pipeline corridor would traverse or run adjacent to these areas, but any new construction for the segment may not be an allowable use. Further review of the easements underlying the properties could identify whether specific restrictions and/or allowable uses within the easement agreement pertain to the construction and O&M activities.

Local

Segment O would cross a locally managed park (i.e., Hesperia Lake Park), and although impacts would be temporary, construction of the pipeline could conflict with this land use. As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters. Therefore, coordination with local agencies would be anticipated during future planning efforts.

3.12.8.3 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, the segments would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a result of construction and O&M of the pipeline and corridor; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce potential land use conflicts are shown in Table 3.12-29: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 4C. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.12-29: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 4C

Potential Impact	Potential Avoidance and Minimization Measures
Land use conflicts with ACECs, a national monument, wilderness, national conservation land, a national preserve, and a national wildlife refuge	The pipeline could be routed outside of these areas, to the extent feasible.
Land use conflict with the CDCA Plan	The pipeline could be fully routed within designated utility planning corridors on BLM-managed land, to the extent feasible.
Land use conflict with the DRECP	The pipeline could be routed outside of GPLs, Conservation Areas, or RMAs, to the extent feasible, or a DRECP amendment could be pursued for the portion of the alignment within GPLs.
Land use conflict with CDFW-managed land	The pipeline could be routed outside of these areas, to the extent feasible.

3.13 STUDY AREA 4D

3.13.1 Study Area 4D Description

Study Area 4D includes Segments N and Q of the Evaluated Segments, as depicted in Figure 3.13-1: Study Area 4D Overview Map. These segments would traverse approximately 200 miles of Orange, Riverside, and San Bernardino Counties, and the cities of Banning, Beaumont, Blythe, Cathedral City, Chino Hills, Coachella, Corona, Indio, Moreno Valley, Palm Springs, and Riverside. These segments are part of the Connection Zone along with Segments C, F, H, O, P, R, and X of the Evaluated Segments. Table 3.13-1: Jurisdictions Crossed by Study Area 4D summarizes the distance in miles that the segments in Study Area 4D would cross through each jurisdiction. The segments in this study area would generally connect from the City of Blythe to Segment J of the Collection Zone in Chino Hills State Park.

3.13.1.1 Summary of Potential Impacts

Segments N and Q within this study area are preliminary, and the actual routing, engineering, and design of the Evaluated Segments, and construction methods for each segment have not been determined; therefore, the impacts to existing resources cannot be quantified at this time. Further, each segment's alignment has not yet been engineered; therefore, the actual proximity to resources is unknown and subject to change. However, based on the geographic location of the segments and the understanding of typical pipeline construction and O&M, activities were determined to either have a potential impact or no potential impact. Table 3.13-2: Study Area 4D Potential Impact Summary summarizes the potential impacts identified for the segments in Study Area 4D.

Table 3.13-1: Jurisdictions Crossed by Study Area 4D

Segment	Segment Length (Miles)	Jurisdiction	Miles Crossed through Jurisdiction
N	78	City of Banning	5
		City of Beaumont	3
		City of Chino Hills	6
		City of Corona	6
		City of Moreno Valley	9
		City of Palm Springs	3
		City of Riverside	9
		Unincorporated Orange County	<1
		Unincorporated Riverside County	38
		Unincorporated San Bernardino County	<1
Q	122	City of Blythe	4
		Cathedral City	3
		City of Coachella	3
		City of Indio	4
		City of Palm Springs	4
		Unincorporated Riverside County	104

Sources: Casil 2012, U.S. Census 2016
Note: Due to rounding, totals may not sum.

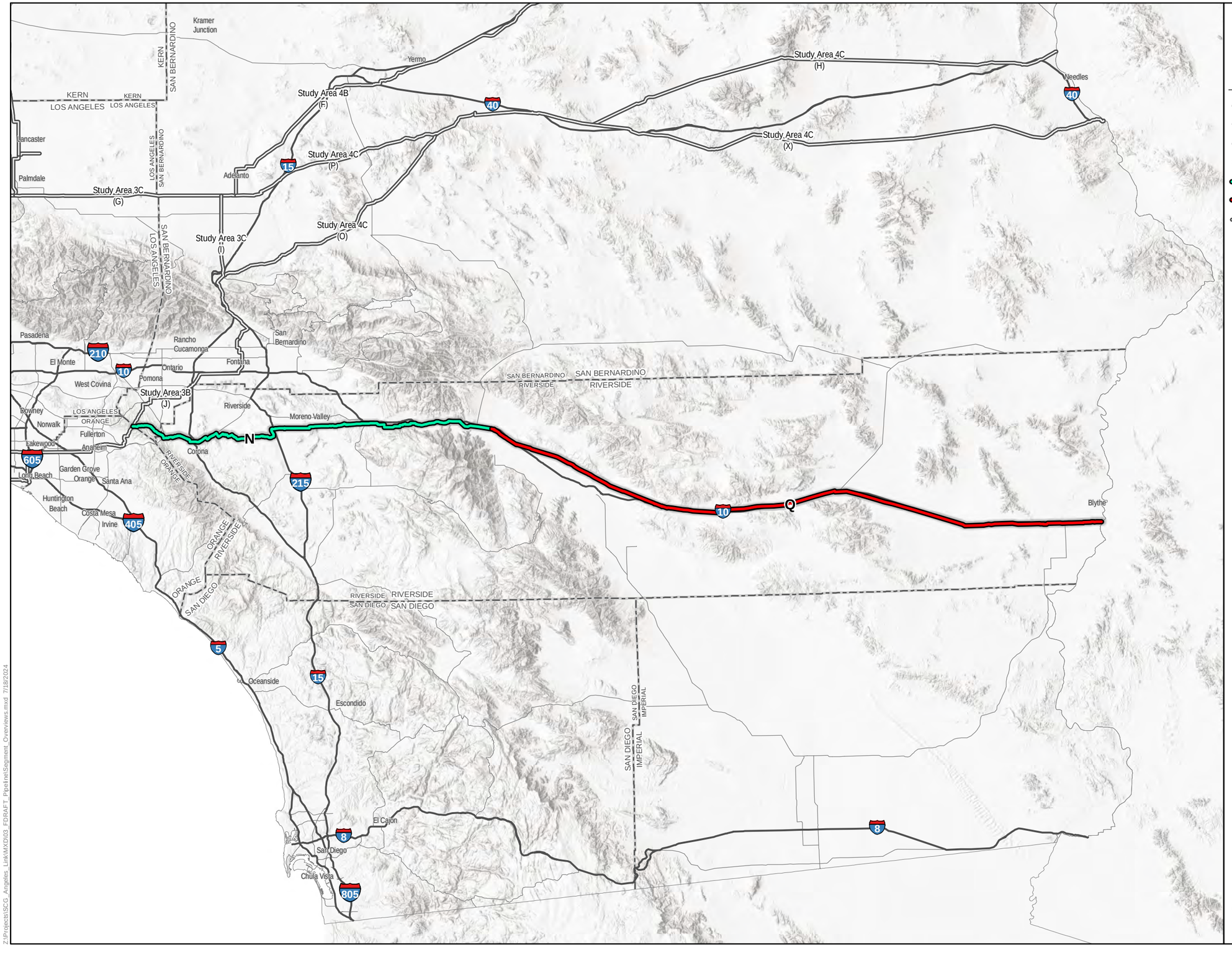


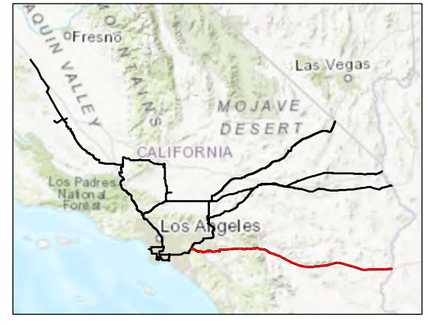
Figure 3.13-1: Study Area 4D Overview Map

Angeles Link Phase 1 Environmental Analysis

- Interstate
- State Highway
- County Boundary

Segment

- N
- Q
- Adjacent/Other Study Area Visible



SoCalGas

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Table 3.13-2: Study Area 4D Potential Impact Summary

Environmental Factor	Potential Impact
Air Quality and Greenhouse Gas Emissions	• Potential impacts to air quality and emission of GHGs during construction and O&M of all segments
Biological Resources	• Potential impacts to species and habitat during construction and O&M of all segments • Potential impacts to riparian habitat or sensitive natural communities during construction and O&M of all segments • Potential impacts to wetlands during construction and O&M of all segments • Potential impacts to wildlife movement and migration corridors during construction and O&M of all segments • Potential to conflict with existing NCCPs/HCPs and other conservation plans during construction and O&M of all segments
Cultural and Tribal Resources	• Potential to change the significance of a historical resource during construction and O&M of all segments • Potential to change the significance of an archaeological resource during construction and O&M of all segments • Potential to disturb human remains during construction and O&M of all segments • Potential to change the significance of a TCR during construction and O&M of all segments
Energy	• Potential impacts to existing energy resources during construction of all segments • Potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction of all segments
Hazards and Hazardous Materials	• Potential impacts from hazardous materials transport, use, or disposal during construction and O&M of all segments • Potential for a foreseeable upset or accident conditions during construction and O&M of all segments • Potential impacts to schools in close proximity to pipeline construction and O&M of all segments • Potential to uncover existing hazardous materials during construction and O&M if located near an existing hazardous materials site for the segments

Environmental Factor	Potential Impact
	• Potential impacts to public airports and/or private airstrips during construction of Segment Q • Potential to interfere with an adopted emergency response or emergency evacuation plan during construction and O&M of all segments • Potential to contribute to wildland fires during construction and O&M of Segment N
Hydrology and Water Quality	• Potential impacts to water quality during construction and O&M of all segments • Potential impacts to ground water quality and/or depletion during construction and O&M of all segments • Potential impacts to floodplains during construction and O&M of all segments
Land Use and Planning	• Potential to conflict with existing land use plans, policies, and regulations during construction and O&M of all segments

3.13.2 Air Quality and Greenhouse Gas Emissions

3.13.2.1 Existing Conditions

Section 3.13.1 Study Area 4D Description provides a description of the segments and the cities and counties that would be crossed by Segments N and Q. Study Area 4D is comprised of Segments N and Q.

As depicted in Attachment A: Air Basins and Air Districts Maps, Segment N is located primarily in the SCAB; however, a small portion of it passes through the Salton Sea Air Basin (SSAB). The entirety of this segment is under the jurisdiction of the SCAQMD.

As depicted in Attachment A: Air Basins and Air Districts Maps, Segment Q is located in both the northern portion of the SSAB and the southern portion of the MDAB. The MDAB is bounded by the Colorado River Valley to the south and east, and by mountains on its remaining sides. The MDAQMD has jurisdiction over San Bernardino County's high desert and portions of Riverside County. The weather within the MDAB tends to be windy, with winds blowing predominately from the south and west. During the summer, a Pacific subtropical high cell that sits off of the coast generally influences the MDAB, inhibiting cloud formation and encouraging daytime solar heating. In the late spring months, high winds from the coastal areas of Southern California blow into the Mojave Desert. During Santa Ana conditions in the fall, hot air from the desert blows into Southern California. The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert. The majority of this segment is under the jurisdiction of the SCAQMD while the remainder is under the jurisdiction of the MDAQMD. The SSAB is centered on the Coachella Valley, Salton Sea, and Imperial Valley, commonly referred to as the Salton Trough or the Cahuilla Basin. The mountains surrounding the Salton Trough and bounding the SSAB isolate the area from coastal influences and create a hot and dry low-lying desert condition. The area is subject to strong winds, drawn through the San Gorgonio Pass to the northeast of the valley.

Attainment Status

Table 3.13-3: Study Area 4D Attainment Status summarizes the current attainment status for the criteria air pollutants with the CAAQS and NAAQS within Study Area 4D.

Applicable Thresholds

For the purposes of evaluating potential impacts associated with air quality and greenhouse gas emissions, this section identifies potential applicable thresholds from the local air district(s) that may apply to the environmental evaluation of the potential segment(s) in this study area in future phases as Angeles Link's pipeline routes are further developed and refined. Given the preliminary nature or the segments, the high-level analysis in this study does not evaluate the magnitude of potential impacts and whether those impacts may be considered significant under a future CEQA or NEPA analysis. The potential applicable thresholds are provided as a reference to inform whether a potential for impacts related to air quality and/or greenhouse gas emissions exists.

Table 3.13-3: Study Area 4D Attainment Status

Criteria Air Pollutant	CAAQS	NAAQS
SCAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Nonattainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A
SSAB		
O_3	Nonattainment	Nonattainment
$PM_{2.5}$	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Nonattainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A
MDAB		
O_3	Nonattainment	Unclassified/Attainment
$PM_{2.5}$	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Unclassified
CO	Unclassified	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Criteria Air Pollutant	CAAQS	NAAQS
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
H_2S	Unclassified	N/A
Visibility-Reducing Particles	Unclassified	N/A

Note: An air basin may have more than one attainment status per pollutant. The attainment statuses are reported for the areas that would be crossed by the segments.
Source: CARB 2023

Air Quality

South Coast Air Quality Management District

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace their current CEQA Air Quality Handbook that was approved in 1993. Their current handbook provides guidance on how to evaluate a project's potential to impact air quality. The SCAQMD released updated air quality significance thresholds in March 2023 for criteria air pollutants to address the U.S. EPA's redesignation of the Coachella Valley to extreme non-attainment for the 2008 O_3 NAAQS. These thresholds are presented in Table 3.13-4: SCAQMD Criteria Air Pollutant Thresholds in Study Area 4D. The SCAQMD also requires the implementation of their Localized Significance Thresholds for projects within the district to evaluate potential impacts to sensitive receptors (SCAQMD 2023a).

Table 3.13-4: SCAQMD Criteria Air Pollutant Thresholds in Study Area 4D

Criteria Air Pollutant	Daily Construction Emissions (Pounds)	Daily Operation Emissions (Pounds)
NO_X	100	100
VOC	75	75
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
CO	550	550
Lead	3	3

Source: SCAQMD 2023a

Mojave Desert Air Quality Management District

The MDAQMD's CEQA and Federal Conformity Guidelines provide direction on calculating the emissions and assessing the potential criteria air pollutant and GHG impacts from projects within the district (MDAQMD 2020). Table 3.13-5: MDAQMD Criteria Air Pollutant Thresholds in Study Area 4D lists the applicable annual and daily emissions thresholds for projects within the MDAQMD's jurisdiction. A multi-phased project (e.g., those with separate construction and operational phases), with phases shorter than one year can be compared to the daily emission threshold while others should use the annual threshold.

Greenhouse Gases

South Coast Air Quality Management District

SCAQMD staff are convening an ongoing GHG working group to determine appropriate significance thresholds for project emissions. On December 5, 2008, the SCAQMD Governing Board adopted interim GHG significance threshold for projects and provided

draft guidance to assist with these determinations (SCAQMD 2023b). For industrial projects, the SCAQMD considers any project with emissions in excess of 10,000 metric tons of CO_2e emissions, including construction emissions amortized over 30 years and added to the operational GHG emissions, to be potentially significant.

Table 3.13-5: MDAQMD Criteria Air Pollutant Thresholds in Study Area 4D

Criteria Air Pollutant	Annual Emissions (Tons)	Daily Emissions (Pounds)
CO	100	548
NO_X	25	137
VOC	25	137
SO_X	25	137
PM_{10}	15	82
$PM_{2.5}$	12	65
H_2S	10	54
Lead	0.6	3

Source: MDAQMD 2020

Mojave Desert Air Quality Management District

The MDAQMD's CEQA and Federal Conformity Guidelines provide direction on calculating the emissions and assessing the potential GHG impacts from projects within the district (MDAQMD 2020). The MDAQMD has established a daily CO_2e threshold of 548,000 pounds and an annual CO_2e threshold of 100,000 tons for GHG emissions.

3.13.2.2 Impact Discussion

Potential impacts related to air quality and greenhouse gas emissions that could occur during construction and O&M of Segments N and Q, if built, within Study Area 4D are summarized in Table 3.13-6: Air Quality and Greenhouse Gas Emissions Potential Impacts in Study Area 4D.

Table 3.13-6: Air Quality and Greenhouse Gas Emissions Potential Impacts in Study Area 4D

Potential Impact	Project Phase	Segment N	Segment Q
Air Quality	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
GHGs	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact

Air Quality

As noted in Table 3.13-3: Study Area 4D Attainment Status, the segments associated with Study Area 4D would be in areas currently classified as nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead. Typical impacts to air quality from construction and O&M activities are detailed in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Air Quality subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential air quality impact. Potential AMMs that could be implemented to reduce the potential criteria air pollutant emissions are summarized in Section 3.13.2.3 Potential Avoidance and/or Minimization Measures.

Greenhouse Gases

Typical impacts related to GHG emissions associated with construction and O&M are detailed in Study Area 1A Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Impacts for the segment in this study area would be similar to those described in Section 3.1.2.2 Impact Discussion in the Greenhouse Gases subsection. Given the level of detail known at this time, both construction and O&M activities could have a potential GHG emissions impact. Potential AMMs that could be implemented to reduce the potential GHG emissions are summarized in Section 3.13.2.3 Potential Avoidance and/or Minimization Measures.

3.13.2.3 Potential Avoidance and/or Minimization Measures

Impacts to air quality could be minimized by implementing a variety of measures to reduce potential air quality and GHG emissions during pipeline construction and O&M. These measures are previously detailed in Table 3.1-6: Air Quality and GHG Emissions Potential Avoidance and Minimization Measures for Study Area 1A. The impacts would not differ within Study Area 4D and all AMMs are also applicable to this study area.

3.13.3 Biological Resources

3.13.3.1 Existing Conditions

As discussed in Section 2.3 Biological Resources, queries of biological resources were used to generate a list of vegetation communities and protected species that would potentially occur in or near Segments N and Q. Biological resources in Study Area 4D are under the jurisdiction of the CDFW, BLM, and USFWS.

The following subsections discuss biological resources existing conditions in Study Area 4D; potential impacts from the construction and O&M of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts from the pipeline segments within this study area.

Vegetation Communities

Based on a review of the Vegetation Classification and Mapping Program Dataset (CDFW 2023a), CAL FIRE FRAP Dataset (CAL FIRE 2023), and aerial imagery, it was determined that 25 vegetation communities would be present within Study Area 4D segments. Vegetation communities were classified according to the CWHR classification system if this classification information was available. If the CWHR classification information was not available, the vegetation community was reclassified into the most similar CWHR classification. Desert scrub, urban, annual grassland, desert wash, and barren habitats are the predominant habitats present within a 200-foot-wide corridor centered on each segment. The habitats and approximate area of each habitat that would be within each segment corridor are depicted in Attachment B-1: Vegetation Communities Within the 200-Foot-Wide Corridor. Additionally, Attachment B-2: Habitat Type Descriptions provides basic details and composition information for each of these habitats.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Riparian Habitat or Other Sensitive Natural Communities

Segments within Study Area 4D would cross existing freshwater emergent wetland, lacustrine, valley foothill riparian, riverine, and desert riparian habitats that would likely be classified as a sensitive natural communities within California. Segment N would cross valley foothill riparian and freshwater emergent wetland habitat that is present to the south of the Mockingbird Reservoir. Segment N would also cross riverine and lacustrine habitat that is present where the route would cross Smith Creek and Montgomery Creek. In addition, Segment Q would cross desert riparian habitat that is present to the west of the City of Blythe.

Additional riparian habitat or sensitive natural communities may be located within the 200-foot-wide corridor for the segments in this study area; however, field surveys would be needed to determine the presence and extent of these communities.

Wetlands

Segment N would cross 104 potentially jurisdictional features and Segment Q would cross 141 potentially jurisdictional features. Although potentially jurisdictional features are discussed in detail in the Surface Waters subsection of Section 3.13.7.1 Existing Conditions, wetland habitats may be present along these jurisdictional features but are not further quantified in this report. Field surveys would be needed to determine the presence and extent of the wetland habitat.

Protected Species

As discussed in Section 2.3.4 Definitions, protected species were identified based on the ESA (USFWS 2023a); CESA (CDFW 2023b); CDFW Fish and Game Code Sections 3511, 4700, 5050, and 5515 (CDFW 2023c); and the Western Joshua Tree Conservation Act (CDFW 2023c). Based on the literature and database review, one protected plant species and 19 protected wildlife species were determined to have a likely potential to occur within 0.25 mile of Segments N and/or Q. A 0.25-mile buffer, rather than the 200-foot-wide corridor, was queried to identify protected species that have been documented near a segment centerline. A larger area was queried since Angeles Link-specific surveys have not been completed and to account for the absence of data within the 200-foot-wide corridor due to a lack of recent or historical surveys.

Protected Plants

As detailed in Table 3.13-7: Protected Plant Species Likely to Occur in Study Area 4D, one protected plant species would be likely to occur within portions of Segments N and/or Q in this study area and/or within 0.25 mile of a segment centerline. The species was identified to have a CNDDB record within 0.25 mile of a segment centerline (CDFW 2023d).

This species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Protected Wildlife

As detailed in Table 3.13-8: Protected Wildlife Species Likely to Occur in Study Area 4D, 19 protected wildlife species would be likely to occur within portions of Segments N and/or Q in this study area and/or within 0.25 mile of a segment centerline. Unless otherwise denoted, the species were identified to have a CNDDB record within 0.25 mile of a segment centerline (CDFW 2023d).

These species and a brief assessment of the potential to occur within each segment are detailed in Attachment B-3: Protected Species with the Potential to Occur and the likelihood of occurrence for each individual species along the Evaluated Segments is depicted in Attachment B-4: Protected Species Likelihood Occurrence Maps.

Table 3.13-7: Protected Plant Species Likely to Occur in Study Area 4D

Segment	Species Common Name	Listing Status[235]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur [236]
N	Coachella Valley milk-vetch[237]	FE	0.1	0.4
Q	Coachella Valley milk-vetch	FE	1.8	2.2

Sources: CDFW 2023d and CDFW 2023e

Special Management Areas

United States Fish and Wildlife Service Critical Habitat

Based upon review of the ESA Critical Habitat for Threatened and Endangered Species Dataset (USFWS 2023b), Segments N and/or Q would be located within USFWS-designated critical habitat for the coastal California gnatcatcher, least Bell's vireo, Coachella Valley milk-vetch, Coachella Valley fringe-toed lizard, desert tortoise, and razorback sucker.

Segment N would be located within USFWS-designated critical habitat for the coastal California gnatcatcher and would cross approximately 0.6 mile of critical habitat. The USFWS-designated critical habitat is located northeast of the City of Yorba Linda. In addition, Segment N would be located within USFWS-designated critical habitat for the least Bell's vireo and would cross approximately 0.5 mile of critical habitat. The USFWS-designated critical habitat is located northwest of the City of Corona along the Santa Ana River. Lastly, Segment N would be located within USFWS-designated critical habitat for the Coachella Valley milk-vetch and would cross approximately less than 0.1 mile of critical habitat. The USFWS-designated critical habitat is located near the census designated place of Whitewater.

[235] Explanation of listing status code:

Federal listing code:

- FE: Federally listed as endangered

[236] The buffer includes 0.25 mile on either side of the segment centerline.

[237] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

Table 3.13-8: Protected Wildlife Species Likely to Occur in Study Area 4D

Segment	Species Common Name	Listing Status[238]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[239]
Amphibians and Reptiles				
N	Arroyo toad[240]	FE	0.5	0.6
	California red-legged frog[240]	FT	28.6	29.2
	Coachella Valley fringe-toed lizard	SE, FT	9.5	9.5
	Desert tortoise[240]	SE, FT	4.3	4.4
	Western pond turtle[240,241]	FPT	29.4	30.7
	Western spadefoot	FPT	19.7	17.3
Q	Coachella Valley fringe-toed lizard	SE, FT	28.8	28.4
	Desert tortoise	SE, FT	79.7	78.4
	Western pond turtle[240,241]	FPT	0.0	<0.1

[238] Explanation of listing status codes:

Federal listing codes:
- FE: Federally listed as endangered
- FT: Federally listed as threatened
- FPT: Federally proposed as threatened
- FDR: Federally Delisted (Recovered)

State listing codes:
- SE: State-listed as endangered
- ST: State-listed as threatened
- FP: CDFW-designated as fully protected

[239] The buffer includes 0.25 mile on either side of the segment centerline.

[240] The species does not have a CNDDB record within 0.25 mile of a segment centerline; however, the segment centerline would be located within 0.25 mile of USFWS- or NOAA Fisheries-designated critical habitat or CWHR habitat with moderate or high suitability for the species.

[241] The USFWS recognizes two species of western pond turtle, the northwestern pond turtle and the southwestern pond turtle, while the CDFW recognizes one species of western pond turtle. For the purposes of this analysis, the CDFW's nomenclature for the western pond turtle was used.

Segment	Species Common Name	Listing Status[238]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[239]
Birds				
N	Bald eagle[240, 242]	SE, FDR, FP	0.3	0.2
	Coastal California gnatcatcher	FT	8.1	8.4
	Golden eagle[240, 242]	FP	40.7	43.2
	Least Bell's vireo	SE, FE	2.5	2.7
	Tricolored blackbird[240]	ST	0.3	0.7
	Western yellow-billed cuckoo[240]	SE, FT	<0.1	0.6
	White-tailed kite[240]	FP	63.2	61.4
Q	Elf owl	SE	6.1	6.1
	Golden eagle[240, 242]	FP	12.7	13.4
	Tricolored blackbird[240]	ST	0.0	<0.1
	Western yellow-billed cuckoo	SE, FT	0.6	0.8
	White-tailed kite[240]	FP	1.6	2.9
Fish				
N	Santa Ana sucker[240]	FT	0.0	0.1
Q	Razorback sucker[240]	SE, FE, FP	0.0	0.1
Invertebrates				
N	Crotch's bumble bee	SC	0.0	<0.1

[242] For bald eagles and golden eagles, a one-mile buffer on either side of a segment centerline was used.

Segment	Species Common Name	Listing Status[238]	Approximate Percentage of the Segment Length Crossed Where the Species is Likely to Occur	Approximate Percentage of the Buffer Area Where the Species is Likely to Occur[239]
Mammals				
N	San Bernardino kangaroo rat[240]	SE, FE	6.2	7.9
	Stephens' kangaroo rat	ST, FT	21.3	18.8

Sources: CDFW 2023d, CDFW 2023e, and CDFW 2023f

Segment Q would also be located within USFWS-designated critical habitat for the Coachella Valley milk-vetch and would cross approximately 2.2 miles of critical habitat. The USFWS-designated critical habitat is located east of the census designated place of Thousand Palms. Segment Q would also be located within USFWS-designated critical habitat for the Coachella Valley fringe-toed lizard and would cross approximately 6.0 miles of critical habitat. The USFWS-designated critical habitat is located east of the census designated place of Thousand Palms. In addition, Segment Q would be located within USFWS-designated critical habitat for the desert tortoise and would cross approximately 51.1 miles of critical habitat. The USFWS-designated critical habitat is located near I-10 approximately from the unincorporated community of Cactus City to the City of Blythe. Lastly, Segment Q would be located within 0.25 mile of USFWS-designated critical habitat for the razorback sucker. This USFWS-designated critical habitat is located within the Colorado River near the City of Blythe.

National Oceanic and Atmospheric Administration's National Marine Fisheries Service Critical Habitat

Based upon review of the ESA Critical Habitat Mapper from NOAA Fisheries (NOAA Fisheries 2023a), Segments N and Q would not be located within NOAA Fisheries-designated critical habitat for any species in Study Area 4D.

Areas of Critical Environmental Concern

Based upon review of the ACECs from the BLM (BLM 2023), Segment Q would traverse six BLM-designated ACECs, which are discussed in more detail in Table 3.13-9: Areas of Critical Environmental Concern within Study Area 4D.

Habitat Conservation Plan or Natural Community Conservation Plan Area

Based upon review of the CDFW's NCCPs/HCPs Dataset (CDFW 2022), Segments N and Q would be located within the Plan Area of the Coachella Valley Multiple Species NCCP/HCP. Segment N would cross approximately 16.7 miles and Segment Q would cross approximately 61.0 miles of the NCCP/HCP plan area. Within the 200-foot-wide corridor, Segment N would overlap approximately 404.1 acres and Segment Q would overlap approximately 1,478.4 acres of the NCCP/HCP plan area. The plan is currently in the implementation stage, so additional research would be needed to determine potential conflicts with the plan.

Segment N would be located within the Plan Area of the Western Riverside County Multiple Species NCCP/HCP. Segment N would cross approximately 55.2 miles of the NCCP/HCP plan area. Within the 200-foot-wide corridor, Segment N would overlap approximately 1,335.1 acres of the NCCP/HCP plan area. The plan is currently in the implementation stage, so additional research would be needed to determine potential conflicts with the plan.

Table 3.13-9: Areas of Critical Environmental Concern within Study Area 4D

Segment	BLM Field Office	ACEC	ACEC Size (acres)	ACEC Miles Crossed	Applicable Goals/Objective(s)
Q	Palm Springs-South Coast	Coachella Valley Fringe-toed Lizard	11,634	0.5	• Protect and maintain habitat for the Coachella Valley fringe-toed lizard (*Uma inornata*) and promote recovery of the species. • Protect and maintain habitat for all the species dependent on the soils, water, and other resources found in the preserve. • Protect soils, blow-sand, and sand transport. • Manage vegetation communities to meet the habitat conservation objectives of the Coachella Valley MSHCP. • Manage for recovery of Coachella Valley fringe-toed lizard, and other sensitive status species.
		Alligator Rock	7,742	3.5	• Maintain or improve condition of vegetation in ACEC. • Recovery of desert tortoise (*Gopherus agassizii*). • Protect biodiversity and manage for resilience (protect climate refugia and provide for migration corridors).
		Palen-Ford Playa Dunes	54,929	6.2	• Maintain the integrity of essential fringe-toed lizard habitat and essential ecological processes (i.e., the sand transport system and sand sources). • Control invasive species on the sand dunes (e.g., tamarisk within the palo verde thickets, Sahara mustard within the dunes/fringe-toed lizard habitat). • Prevent excessive ground water withdrawal that would potentially threatened dune/playa dependent vegetation alliances.

Segment	BLM Field Office	ACEC	ACEC Size (acres)	ACEC Miles Crossed	Applicable Goals/Objective(s)
					• Protect status plants and rare vegetation alliances by ensuring habitat is in a stable or improving condition. • Provide for the protections of special status animals and their habitats.
		Chuckwalla Valley Dune Thicket	2,278	1.0	• Enhance value of habitat for wildlife, including desert tortoise, kit fox (*Vulpes macrotis*), ferruginous hawk (*Buteo regalis*), Mojave fringe-toed lizard (*Uma scoparia*), and burro deer.
	Palm Springs-South Coast and El Centro	Chuckwalla	649,052	36.6	• To protect and enhance habitat for sensitive animal and plant species and rare vegetation alliances within the ACEC while considering climate changes and reducing hazards to public safety and providing for compatible public uses. Priority wildlife species include the desert tortoise, desert bighorn sheep (*Ovis canadensis nelsonii*), and burro deer (*Odocoileus hemionus eremicus*). Priority plant species include three endemic plant species: Mecca aster (*Xylorhiza cognata*), Orocopia sage (*Salvia greatae*), and Munz's cholla (*Cylindropuntia munzii*). Priority rare vegetation alliances include Blue Paloverde-Desert Ironwood Woodland and Smoketree Woodland. • Maintain habitat connectivity between the Chuckwalla unit and Joshua Tree National Park. • Prevent excessive ground water withdrawal that would potentially threaten dune/playa-dependent vegetation. • Protect special-status plant and wildlife species and rare vegetation alliances and ensure habitat for the species is in

Segment	BLM Field Office	ACEC	ACEC Size (acres)	ACEC Miles Crossed	Applicable Goals/Objective(s)
					a stable or improving condition, as well as ensure maintenance of connectivity corridors. • Protect biodiversity and manage for resilience (protect climate refugia and provide for migration corridors).
		Mule-McCoy Linkage	60,268	2.5	• Maintain wildlife connectivity between the Chuckwalla ACEC/Palo Verde Wilderness and the Palen-McCoy Wilderness. • Maintain the integrity of the sand transport system/sand sources and Mojave fringe-toed lizard habitat. • Protect the microphyll woodland habitat, particularly the microphyll woodland on the southern portion of the ACEC in the area of the Palo Verde Mesa. • Prevent excessive ground water withdrawal that would potentially threaten groundwater dependent vegetation. • Control invasive species on the sand dunes (e.g., tamarisk within the palo verde thickets, Sahara mustard within the dunes habitat).

Source: BLM 2016

Segment N would be located within the Plan Area of the OCTA NCCP/HCP. Segment N would cross approximately 0.3 miles of the NCCP/HCP plan area. Within the 200-foot-wide corridor, Segment N would overlap approximately 8.3 acres of the NCCP/HCP plan area. The plan is currently in the implementation stage, so additional research would be needed to determine potential conflicts with the plan.

Furthermore, Segment Q would cross approximately 1.0 mile of a CDFW-managed land or conservation easement—the Coachella Valley Ecological Reserve—near the town of Thousand Palms. Segment N would be located within 0.25 mile of a CDFW-managed land or conservation easement—the San Jacinto Wildlife Area—northeast of Lake Perris. The Special Land Use Designations subsection of Section 3.13.8.1 Existing Conditions provides additional information on special land use designations.

Essential Fish Habitat

Based upon review of the EFH mapper from NOAA Fisheries (NOAA Fisheries 2023b) under the jurisdiction of the Pacific Council, Segments N and Q would not cross any waterbodies in Study Area 4D that are managed under an FMP.

Wildlife Corridors

The Terrestrial Connectivity Dataset is one component of the CDFW's ACEs Dataset (CDFW 2019). This dataset includes ACE hexagons, which are ranked 1 through 5. The distances that each segment would cross through each ACE rank are detailed in Table 3.13-10: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity for Study Area 4D. The areas with the highest connectivity ranks would occur where Segment N would traverse undeveloped canyons and hills within Chino Hills State Park and between the city of Moreno Valley and Beaumont. Additionally, areas with the highest connectivity ranks would occur where Segment N would cross the Whitewater River. Rank 4 areas would occur where Segment Q would traverse desert mountains and playas within eastern Riverside County. Segment Q and a portion of Segment N would cross or be located near I-10, which limits northward and southward wildlife movement within Study Area 4D.

Table 3.13-10: CDFW's Areas of Conservation Emphasis Terrestrial Connectivity for Study Area 4D

Segment	Miles Crossed by Segment				
	Rank 1 (Limited Connectivity)	Rank 2	Rank 3	Rank 4	Rank 5 (Irreplaceable and Essential Corridors)
N	35.9	0	15.2	10.9	16.0
Q	27.6	1.7	32.9	59.0	1.3

Source: CDFW 2019

3.13.3.2 Impact Discussion

Potential impacts related to biological resources that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 4D are summarized in Table 3.13-11: Biological Resources Potential Impacts for Study Area 4D.

Protected Species and Their Habitat

Impacts to Protected Amphibian, Mammal, and Reptile Species

Typical construction and O&M activities could have the potential to impact protected amphibian, mammal, and reptile species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Amphibian, Mammal, and Reptile Species subsection, would not differ within Study Area 4D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Bird Species

Typical construction and O&M activities could have the potential to impact protected bird species that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Impacts to Protected Bird Species subsection, would not differ within Study Area 4D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Fish Species

Typical construction and O&M activities could have the potential to impact protected fish species that may occur within construction areas. Impacts, as previously described in Study Area 3B Section 3.5.3.2 Impact Discussion in the Impacts to Protected Fish Species subsection, would not differ within Study Area 4D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.3.3 Potential Avoidance and/or Minimization Measures.

Impacts to Protected Invertebrate Species

Typical construction and O&M activities could have the potential to impact protected invertebrate species that may occur within construction areas. Impacts, as previously described in Study Area 2 Section 3.3.3.2 Impact Discussion in the Impacts to Protected Invertebrate Species subsection and Study Area 3F Section 3.9.3.2 Impact Discussion in the Impacts to Protected Invertebrate Species subsection, would not differ within Study Area 4D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.3.3 Potential Avoidance and/or Minimization Measures.

Table 3.13-11: Biological Resources Potential Impacts for Study Area 4D

Potential Impact	Project Phase	Segment N	Segment Q
Direct or indirect impacts to any protected species or modification of their habitat	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, fish, mammals, invertebrates, and plants; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise; relocation/translocation of protected species, including amphibians, reptiles, birds, fish, and plants; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise	Potential Impact: Habitat loss, fragmentation, or degradation; night lighting; noise
Direct or indirect impacts to any riparian habitat or other sensitive natural community	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation
Direct or indirect impacts to state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.)	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation	Potential Impact: Habitat loss, fragmentation, or degradation; invasive plants; fugitive dust; stormwater runoff; erosion or sedimentation
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation	Potential Impact: Habitat loss, fragmentation, or degradation
Interfere with movement of any native resident or	Construction	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night

Potential Impact	Project Phase	Segment N	Segment Q
migratory fish or wildlife species or with established native resident or migratory wildlife corridors		lighting; noise; mortality or injury of protected species	lighting; noise; mortality or injury of protected species
	O&M	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species	Potential Impact: Habitat loss, fragmentation, or degradation; barrier to wildlife movement; night lighting; noise; mortality or injury of protected species
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	Construction	Potential Impact: Conflict with allowable use or management of land	Potential Impact: Conflict with allowable use or management of land
	O&M	Potential Impact: Conflict with allowable use or management of land	Potential Impact: Conflict with allowable use or management of land

Impacts to Protected Plant Species

Typical construction and O&M activities could have the potential to impact protected plant species that may occur within construction areas. Impacts, as previously described in Study Area 1B Section 3.2.3.2 Impact Discussion in the Impacts to Protected Plant Species subsection, would not differ within Study Area 4D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.3.3 Potential Avoidance and/or Minimization Measures.

Wetlands, Riparian Habitat, or Other Sensitive Natural Communities

Construction and O&M activities could have the potential to result in impacts to riparian habitat or other sensitive natural communities, including freshwater emergent wetland, lacustrine, valley foothill riparian, riverine, and desert riparian habitats that may occur within construction areas. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wetlands, Riparian Habitat, or Other Sensitive Natural Communities subsection, would not differ within Study Area 4D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.3.3 Potential Avoidance and/or Minimization Measures.

Wildlife Corridors

Construction and O&M activities could interfere with the movement of wildlife. Impacts, as previously described in Study Area 1A Section 3.1.3.2 Impact Discussion in the Wildlife Corridors subsection, would not differ within Study Area 4D.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.3.3 Potential Avoidance and/or Minimization Measures.

Special Management Areas

Construction and O&M activities could conflict with the special management considerations or protection of USFWS-designated critical habitat for coastal California gnatcatcher, least Bell's vireo, Coachella Valley milk-vetch, Coachella Valley fringe-toed lizard, desert tortoise, and razorback sucker. A more detailed analysis, as well as consultation with USFWS, may be required to determine potential impacts to these critical habitats.

Construction and O&M activities could conflict with the goals and objectives of six ACECs as detailed in Section 3.13.3.1 Existing Conditions in the Areas of Critical Environmental Concern subsection. Generally, these ACECs define objectives to protect habitat for protected species; however, construction activities could cause temporary and permanent habitat loss and fragmentation within these ACECs. Consultation with the BLM would be required to determine if the Project would be compatible with the goals and objectives of the ACECs.

Construction and O&M activities could conflict with the terms and conditions of the Coachella Valley Multiple Species NCCP/HCP, Western Riverside County Multiple Species NCCP/HCP, or OCTA NCCP/HCP. The plans are currently in the implementation stage, so additional research would be needed to determine potential conflicts with the plans.

In addition, construction and O&M activities could conflict with the Coachella Valley Ecological Reserve or the San Jacinto Wildlife Area. However, consultation with the CDFW would be required to determine potential conflicts with this CDFW conservation easement.

3.13.3.3 Potential Avoidance and/or Minimization Measures

Impacts to biological resources could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures are previously detailed in Table 3.1-10: Biological Resources Potential Avoidance and Minimization Measures for Study Area 1A, Table 3.2-11: Biological Resources Potential Avoidance and Minimization Measures in Study Area 1B, and Table 3.9-9: Biological Resources Potential Avoidance and Minimization Measures for Study Area 3F. The impacts would not differ within Study Area 4D.

3.13.4 Cultural Resources and Tribal Cultural Resources

3.13.4.1 Existing Conditions

A total of 593 previously documented resources have been identified within the 0.25-mile buffer of Study Area 4D, as detailed in Table 3.13-12: Existing Cultural Resources in Study Area 4D. A total of 96 of the previously documented resources are within a 200-foot-wide pipeline corridor (comprising 100 feet on either side of the segment centerline).

Table 3.13-12: Existing Cultural Resources in Study Area 4D

Segment	Relationship to Segment	Total Identified Resources
N	Within[243]	33
	0.25 mile	143
Q	Within	63
	0.25 mile	354

Source: SoCalGas 2023

Information concerning resource type or NRHP/CRHR eligibility within Study Area 4D was not available. Until further information can be acquired, all of the 96 cultural resources within the 200-foot-wide pipeline corridor should be considered potentially eligible resources that may be impacted by the proposed undertaking.

3.13.4.2 Impact Discussion

Potential impacts to known cultural resources that could occur during construction and O&M of Segments N and Q, if built, within Study Area 4D are summarized in Table 3.13-13: Cultural and Tribal Resources Potential Impacts for Study Area 4D. All known eligible and unevaluated resources within Study Area 4D were analyzed to determine if Segments N and Q or the 200-foot-wide corridor could intersect them, thus having the potential to be destroyed or damaged during construction without implementation of protective measures.

Additional resources may be present in Study Area 4D that have not been previously documented and field surveys would be required to determine if other resources would be impacted. Based on the preliminary routes for Segments N and Q, as well as typical pipeline designs, impacts that could be expected and determinations of their potential effects on the identified resources are detailed in the following sections and AMMs that could be implemented are detailed in Section 3.13.4.3 Potential Avoidance and/or Minimization Measures.

[243] Within the 200-foot-wide corridor centered around the segment centerline (comprising 100 feet on each side of the segment centerline)

Table 3.13-13: Cultural and Tribal Resources Potential Impacts for Study Area 4D

Potential Impact	Project Phase	Segment N and Q
Change in the significance of a historical resource	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of an archaeological resource	Construction	Potential Impact
	O&M	Potential Impact
Disturb human remains	Construction	Potential Impact
	O&M	Potential Impact
Change in the significance of a TCR	Construction	Potential Impact
	O&M	Potential Impact

Historical Resources

Typical impacts to historical resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Historical Resources subsection. Construction and O&M activities would have the potential for direct impacts to historical resources identified within the segments in this study area.

Some of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.4.3 Potential Avoidance and/or Minimization Measures.

Archaeological Resources

Typical impacts to archaeological resources from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Archaeological Resources subsection. Construction and O&M activities would have the potential for direct impacts to archaeological resources for all segments in this study area.

Human Remains

Typical impacts to buried human remains from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Human Remains subsection. Construction and O&M activities would have the potential for direct impacts to human remains for all segments in this study area.

Tribal Cultural Resources

Typical impacts to TCRs from construction and O&M activities are detailed in Study Area 1A Section 3.1.4.2 Impact Discussion in the Tribal Cultural Resources subsection. Constructions and O&M activities would have the potential for impacts to TCRs for all segments in this study area. TCRs would be identified during Assembly Bill 52 consultation with tribes.

3.13.4.3 Potential Avoidance and/or Minimization Measures

Existing documentation for resources within the pipeline corridor should be analyzed to determine site attributes, reported conditions, and NRHP/CRHR eligibility status where available. Where records may not exist for mapped resource locations, pedestrian survey and site documentation is recommended. AMMs for each eligible/listed or currently unevaluated resource that could be impacted during construction are detailed in Study Area 1A in Table 3.1-13: Cultural and Tribal Resources Potential Avoidance and Minimization Measures in Study Area 1A.

3.13.5 Energy

3.13.5.1 Existing Conditions

The information in the subsections that follow includes a brief profile of the existing energy consumption (e.g., electricity, natural gas, diesel and gasoline, and existing renewables) and specific general plan policies or zoning ordinances within Orange, Riverside, and San Bernardino counties that support energy efficiency, decreasing reliance on fossil fuels, and increasing reliance on renewable energy resources in Study Area 4D.

Existing Local Energy Use

Electricity

Within Study Area 4D, SCE is the primary provider of electricity (SCE 2023). Additional information about SCE's programs and RPS requirements is included in Study Area 1B Section 3.2.5.1 Existing Conditions in the Existing Local Energy Use subsection. As detailed in Table 3.13-14: Electricity Consumption in 2022 for Counties Crossed by Study Area 4D, approximately 20 billion, 18 billion, and 17 billion kWh of electricity were consumed in Orange, Riverside, and San Bernardino counties in 2022, respectively.

Table 3.13-14: Electricity Consumption in 2022 for Counties Crossed by Study Area 4D

County	Electricity Consumption (Millions of kWh)		
	Residential Use	Non-Residential Use	Total
Orange County[244]	7,830.1	12,413.6	**20,243.7**
Riverside County	9,060.6	8,720.0	**17,780.6**
San Bernardino County	6,301.9	10,327.8	**16,629.6**

Source: CEC 2022a

Natural Gas

Within Study Area 4D, SoCalGas provides natural gas service (SoCalGas 2024). As detailed in Table 3.13-15: Natural Gas Consumption in 2022 for Counties Crossed By Study Area 4D, approximately 572 billion, 431 billion, and 562 million therms[245] of natural gas were consumed in Orange, Riverside, and San Bernardino counties in 2022, respectively.

[244] The Orange County figures include data from all of Orange County, which factors in electricity also provided by OCPA. OCPA was established under the CCA program in 2021 (OCPA 2024).
[245] One therm is equal to 100,000 Btu, or 100 kBtu.

Table 3.13-15: Natural Gas Consumption in 2022 for Counties Crossed By Study Area 4D

County	Natural Gas Consumption (Millions of Therms)		
	Residential Use	Non-Residential Use	Total
Orange County	351.7	220.8	**572.5**
Riverside County	284.1	146.9	**431.1**
San Bernardino County	267.3	294.8	**562.1**

Source: CEC 2022a

Diesel and Gasoline

Within Study Area 4D, diesel and regular unleaded gasoline are utilized. Gasoline and diesel are the first and second most used transportation fuels in California, respectively. Additional information about fuel composition and vehicle usage within California is detailed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Diesel and Gasoline subsection.

As detailed in Table 3.13-16: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 4D, approximately one billion gasoline fuel sales and 66 million diesel fuel sales were estimated in Orange County; approximately 981 million gasoline fuel sales and 173 million diesel fuel sales were estimated in Riverside County; and approximately 915 million gasoline fuel sales and 258 million diesel fuel sales were estimated in San Bernardino County in 2022.

Table 3.13-16: Gasoline and Diesel Fuel Sales in 2022 for Counties Crossed by Study Area 4D

County	Fuel Sales Estimated Totals (Millions of Gallons)	
	Gasoline	Diesel
Orange County	1,176	66
Riverside County	981	173
San Bernardino County	915	258

Source: CEC 2022b

Planned Renewable Areas

With respect to local land use, as discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. Therefore, Angeles Link would not conflict with any relevant land use plan, policy, or regulation.

However, information on local land use policies related to energy is provided for informational purposes in this study, as SoCalGas would consult with local agencies regarding land use matters in siting Angeles Link facilities.

Desert Renewable Energy Conservation Plan

As discussed in Study Area 1B Section 3.2.5.1 Existing Conditions in the Desert Renewable Energy Conservation Plan subsection, the DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties (BLM 2016). Portions of Study Area 4D would cross private lands and existing BLM-managed lands that are designated within the DRECP as DFAs, Conservations Areas, RMAs, and GPLs, as depicted in Attachment C: Energy Resources Maps. However, portions of Segment N within Study Area 4D follow existing SoCalGas pipeline corridors.

Wind Resource Areas

As discussed in Study Area 3D Section 3.7.5.1 Existing Conditions in the Wind Resource Areas subsection, wind resource areas were created by the CEC to group wind electric generating facilities into polygons, based on their proximity to each other (i.e., within 15 miles) (CEC 2023c). According to the Wind Resources Dataset from the CEC (CEC 2023c) and as depicted in Attachment C: Energy Resources Maps, Segments N and Q within Study Area 4D overlap the San Gorgonio Wind Resource Area.

Solar Resource Areas

As discussed in Study Area 1A Section 3.1.5.1 Existing Conditions in the Solar Resource Areas subsection, solar resource areas were created by the CEC to group solar-generating facilities into polygons, or regions, based on their proximity to the coastline and each other (CEC 2024). According to the Solar Resources dataset from the CEC (CEC 2022c) and as depicted in Attachment C: Energy Resources Maps, Segment Q within Study Area 4B overlaps the Imperial Solar Resource Area and Segment N overlaps the Los Angeles Metro Solar Resource Area.

Orange County

As discussed in Study Area 2 Section 3.3.5.1 Existing Conditions in the Existing Local Energy Use subsection, county-level regulations outlined in the Orange County General Plan provide detailed policies for energy efficiency and goals for managing energy resources. No separate renewable energy plan has been developed by Orange County (County of Orange 2015). Segments within Study Area 4D would not overlap any approved or in-progress PV solar-generation facilities within Orange County (CEC 2023d).

Riverside County

As discussed in Study Area 3B Section 3.5.5.1 Existing Conditions in the Riverside County subsection, as part of the eRED program, the County makes publicly available maps and analyses of renewable energy-related data (County of Riverside 2024).

Segments within Study Area 4D would not overlap any approved or in-progress PV solar-generation facilities within Riverside County (CEC 2023d).

San Bernardino County

As discussed in Study Area 3B Section 3.5.5.1 Existing Conditions in the San Bernardino County subsection, county-level regulations outlined in the County of San Bernardino General Plan provide strategies and policies for promoting renewable energy development. No separate renewable energy plan has been developed for San Bernardino County (County of San Bernardino 2019). Segments within Study Area 4D would not overlap any approved or in-progress PV solar-generation facilities within San Bernardino County (CEC 2023d).

3.13.5.2 Impact Discussion

Potential impacts related to energy that could occur during construction and O&M of the Evaluated Segments, if built, within Study Area 4D are summarized in Table 3.13-17: Study Area 4D Potential Energy Impacts.

Table 3.13-17: Study Area 4D Potential Energy Impacts

Potential Impact	Project Phase	Segment N	Segment Q
Wasteful, inefficient, or unnecessary consumption of energy resources	Construction	Potential Impact	Potential Impact
	O&M	No Impact	No Impact
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Construction	Potential Impact	Potential Impact
	O&M	No Impact	No Impact

Energy Consumption

Typical impacts that would be anticipated to occur to energy resources as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Energy Consumption subsection. Impacts for this study area would be similar to those identified for Study Area 1A and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.5.3 Potential Avoidance and/or Minimization Measures.

Renewable Energy and Energy Efficiency Plans

Typical impacts that would be anticipated to occur to renewable energy or energy efficiency plans as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection, Study Area 1B Section 3.2.5.2 Impact Discussion in the Renewable

Energy and Energy Efficiency Plans subsection, and Study Area 3D Section 3.7.5.2 Impact Discussion in the Renewable Energy and Energy Efficiency Plans subsection. Impacts would be similar to those identified for Study Areas 1A, 1B, and 3D and would include short-term construction impacts.

Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.5.3 Potential Avoidance and/or Minimization Measures.

3.13.5.3 Potential Avoidance and/or Minimization Measures

As detailed in Section 3.13.5.2 Impact Discussion, potential impacts are likely to occur during construction of the Evaluated Segments. However, these potential impacts could be reduced by the implementation of AMMs detailed in Table 3.1-18: Energy Potential Avoidance and Minimization Measures in Study Area 1A and Table 3.7-18: Energy Potential Avoidance and Minimization Measures in Study Area 3D.

3.13.6 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials as well as potential impacts that may occur within Study Area 4D.

3.13.6.1 Existing Conditions

Section 3.13.1 Study Area 4D Description provides a description of each segment, as well as the counties and cities through which each segment would pass. Potential hazards, sensitive receptors, airports, and existing hazardous materials sites within Study Area 4D are discussed in the following subsections and depicted in Attachment D: Community Facilities and Features.

Existing Hazardous Materials Sites

A review of available data on the SWRCB's GeoTracker (SWRCB 2023) and DTSC's EnviroStor (DTSC 2023) online databases revealed approximately 11 open and 105 closed hazardous materials cases within 1,000 feet of the segments in Study Area 4D. Open hazardous materials sites are summarized in Table 3.13-18: Open Hazardous Materials Sites within 1,000 Feet of Study Area 4D.

Fire Hazards

The CAL FIRE FHSZs that would be crossed by Study Area 4D segments are detailed in Table 3.13-19: Fire Hazard Severity Zones Crossed in Study Area 4D. Study Area 4D would be located within SRAs and LRAs. These areas are recognized by the Board of Forestry and Fire Protection as areas where CAL FIRE is the primary emergency response agency. Segment N would be located within High or Very High FHSZs within an SRA and LRA.

Schools and Day-Care Centers

Schools and day-care centers within 0.5 mile of Study Area 4D are presented in Table 3.13-20: Schools and Day-Care Centers within 0.5 Mile of Study Area 4D.

Airports

Five airports are located within two miles of Segments N and Q. The Banning Municipal Airport, Corona Municipal Airport and March Air Reserve Base (ARB) are located within two miles of Segment N, but Segment N would not be located within the Airport Influence Area (AIA) boundaries designated for those airports. However, the Blythe Airport and Chiriaco Summit Airport would be located within two miles of Segment Q, and Segment Q would be located within AIA boundaries designated for these airports.

Table 3.13-18: Open Hazardous Materials Sites within 1,000 Feet of Study Area 4D

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[246] (feet)	Media Affected	Regulatory Status
GeoTracker Sites				
Corona Brine Ponds (Closed)	N	7	Not Specified	Open - Closed/with Monitoring
March Air Force Base - Us Air Force, Former March Air Force Base, Irp, Brac	N	82	Aquifer used for drinking water supply, Soil, Soil Vapor	Open - Remediation
Alexis Oil Company	N	184	Not Specified	Pending Review
Franco-Langstaff Pond	N	235	Not Specified	Open - Assessment & Interim Remedial Action
Beaumont Wwtp No. 1	N	367	Not Specified	Active
Ez Serve #100808	Q	763	Aquifer used for drinking water supply	Open - Remediation
Aaa Air Conditioning	Q	777	Aquifer used for drinking water supply	Open - Eligible for Closure
EnviroStor Sites				
All American Asphalt	N	71	Not Specified	Refer: Other Agency[247]

[246] Distances were calculated based on the approximate center point coordinates provided by GeoTracker and EnviroStor. Depending on the actual property boundaries of each hazardous materials site and/or facility, these sites may be closer than specified.

[247] Sites with a “Refer” in their status are being managed by other agencies besides those more directly related to GeoTracker and EnviroStor.

Hazardous Materials Site	Closest Segment	Approximate Distance from Closest Segment[246] (feet)	Media Affected	Regulatory Status
Edison/Corona #1 Mgp	N	99	Soil	Active
Se Corner Of Washington & Van Buren	N	157	Not Specified	Refer: 1248 Local Agency
Frontier Aluminum, Inc.	N	257	Not Specified	Inactive - Needs Evaluation
Alper Cleaners	N	361	Not Specified	Refer: 1248 Local Agency
Sunkist Growers/Lemon Products Divisions	N	633	Not Specified	Refer: Other Agency

Sources: DTSC 2024 and SWRCB 2024

Table 3.13-19: Fire Hazard Severity Zones Crossed in Study Area 4D

FHSZ	Segment N (miles)	Segment Q (miles)
SRA		
Moderate	5.0	--
High	4.1	--
Very High	7.1	--
LRA		
Non-Wildland/Non-Urban	3.6	7.5
Urban Unzoned	16.8	3.5
Moderate	8.6	59.4
High	16.7	--
Very High	5.8	--

Source: CAL FIRE 2024

Table 3.13-20: Schools and Day-Care Centers within 0.5 Mile of Study Area 4D

Segment	Schools	Day-Care Centers
N	30	31
Q	2	0
Total	**32**	**31**

Source: U.S. Department of Homeland Security 2024

Emergency Response and Evacuation Plan

Evacuation and emergency response in the vicinity of Segments N and Q in Study Area 4D is managed by the following plans:

- Orange County CEMP (County of Orange 2013),
- County of Orange and Orange County LHMP (County of Orange 2021),
- San Bernardino County EOP (County of San Bernardino 2019),
- 2022 San Bernardino County MJHMP (County of San Bernardino 2022),
- Riverside County EOP (County of Riverside 2019),
- County of Riverside EMD 2022-2025 Strategic Plan (County of Riverside 2022), and
- County of Riverside Multi-Jurisdictional Local HMP (MJLHMP) (County of Riverside 2023).

The Emergency Response and Evacuation Plan subsection of Section 3.1.6.1 Existing Conditions provides additional information on these plans.

3.13.6.2 Impact Discussion

Potential impacts associated with hazards and hazardous materials that could occur during construction and O&M of the segments within Study Area 4D are summarized in Table 3.13-21: Study Area 4D Potential Impacts.

Hazardous Materials Transport, Use, or Disposal

Typical impacts that would be anticipated to occur from the routine transport, use, and disposal of hazardous materials (e.g., fuels, lubricating oil, and hydraulic fluid) during construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection. Impacts for this study area would be similar to those identified for Study Area 1A, as previously described in Section 3.1.6.2 Impact Discussion in the Hazardous Materials Transport, Use, or Disposal subsection.

Based on the resources present in this study area, construction and O&M activities would be anticipated to have a potential for temporary or permanent impact to the public or the environment in the event of an accident or spill during the routine transport, use, and/or disposal of hazardous materials during construction and O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.6.3 Potential Avoidance and/or Minimization Measures.

Table 3.13-21: Study Area 4D Potential Impacts

Potential Impact	Project Phase	Segment N	Segment Q
Hazardous Materials Transport, Use, or Disposal	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Reasonably Foreseeable Upset and Accident Conditions	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Hazardous Substances in Close Proximity in Schools	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Public Airport and/or Private Airstrip Hazards	Construction	No Impact	Potential Impact
	O&M	No Impact	No Impact
Emergency Evacuation and Response Plan Interference	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Wildland Fires	Construction	Potential Impact	No Impact
	O&M	Potential Impact	No Impact

Reasonably Foreseeable Upset and Accident Conditions

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Reasonably Foreseeable Upset and Accident Conditions subsection. Construction and O&M activities would have a potential to create a significant hazard to the public or the environment through reasonably foreseeable upset of accident conditions. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.6.3 Potential Avoidance and/or Minimization Measures.

Hazardous Substances in Close Proximity to Schools

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Hazardous Substances in Close Proximity to Schools subsection. Thirty-two schools and 31 day-care centers would be located within 0.5 mile of Segments N and Q. Construction and O&M activities would have a potential for a hazardous emission or impacts resulting from handling hazardous materials within 0.5 mile of a school. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.6.3 Potential Avoidance and/or Minimization Measures.

Existing Hazardous Materials Sites Listed in Government Code Section 65962.5

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Existing Hazardous Materials Sites Listed in Government Code Section 65962.5 subsection.

Based on the 11 open cases identified within 1,000 feet of the segments within Study Area 4D, temporary or permanent impacts may occur due to existing subsurface contamination that may be present during construction or O&M. Construction and O&M activities would have a potential for existing hazardous materials sites to create a significant hazard to the public or the environment. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.6.3 Potential Avoidance and/or Minimization Measures.

Public Airport and/or Private Airstrip Hazards

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1B Section 3.2.6.2 Impact Discussion in the Public Airport and/or Private Airstrip Hazards subsection.

As previously discussed, Segment N is not located within AIA boundaries designated for the Banning Municipal Airport, Corona Municipal Airport and March ARB. However, Segment Q would be located within AIA boundaries designated for the Blythe Airport and Chiriaco Summit Airport.

Construction activities are unlikely, but have a potential to result in a safety hazard or excessive noise for the people residing or working in the portions of Segment Q near the Blythe Airport and Chiriaco Summit Airport. No impacts would be anticipated to result in safety hazards related to airports during O&M activities. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.6.3 Potential Avoidance and/or Minimization Measures.

Emergency Evacuation and Response Plan Interference

Typical impacts that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Emergency Evacuation and Response Plan Interference subsection. Most of the potential impacts could be reduced through the implementation of AMMs detailed in Section 3.13.6.3 Potential Avoidance and/or Minimization Measures.

Wildland Fires

Typical impacts and wildfire prevention practices that would be anticipated to occur with construction and O&M activities are detailed in Study Area 1A Section 3.1.6.2 Impact Discussion in the Wildland Fires subsection.

As previously discussed, CAL FIRE FHSZs would be crossed by Study Area 4D. Approximately 7.1 and 5.8 miles of Segment N would be located within a Very High FHSZ within an SRA and LRA, respectively. Segment Q would not be located within a

Very High FHSZ within an SRA or LRA. High heat or sparks from vehicles or equipment would have the potential to ignite dry vegetation and cause fires. Most of the potential impacts could be reduced through the implementation of the AMMs detailed in Section 3.13.6.3 Potential Avoidance and/or Minimization Measures.

3.13.6.3 Potential Avoidance and/or Minimization Measures

Impacts to the environment or the public from hazards or hazardous materials could be reduced by implementing a variety of measures that could avoid, minimize, rectify, reduce, or compensate for the impacts of the pipeline installation and associated O&M. These measures were previously detailed in Table 3.1-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1A and Table 3.2-21: Hazards and Hazardous Materials Potential Avoidance and Minimization Measures for Study Area 1B. The impacts that could be anticipated within Study Area 4D would not be expected to differ from those identified within Study Areas 1A and 1B.

3.13.7 Hydrology and Water Quality

3.13.7.1 Existing Conditions

Study Area 4D includes Segment N, which is located in RWQCB Santa Ana Region 8 and Colorado River Region 7 and Segment Q, which is located in the RWQCB Colorado River Region 7. Water resources in these areas are also under the jurisdiction of CDFW Inland Deserts Region 6 and USACE Los Angeles District.

The following subsections discuss hydrological resource existing conditions in Study Area 4D; potential impacts from the construction, operation, and maintenance of the Evaluated Segments; and potential AMMs that could be implemented to reduce potential impacts for pipeline segments within this study area.

Surface Waters

The study area crosses 20 USGS watersheds (USGS 2023a). Segment N would cross the Headwaters Whitewater River, Lower San Gabriel River, Lower San Jacinto River, Lower Santa Ana River, Middle San Jacinto River, Middle Santa Ana River, San Gorgonio River, San Timoteo Wash, and Temescal Wash watersheds. Segment Q would cross the Big Wash, Ford Well, Hayfield Lake-Lake Tamarisk, Headwaters Whitewater River, Lower Whitewater River, Middle Whitewater River, Palen Lake, Palo Verde Valley, Pinkham Wash-Box Canyon Wash, and Ship Creek-Ford Dry Lake watersheds.

Based on review of the NWI (USFWS 2023) and NHD Plus High Resolution (USGS 2023b) data, Segment N would cross 11 named waterbodies and 93 unnamed waterbodies and Segment Q would cross nine named waterbodies and 132 unnamed waterbodies. A list of all named waterbodies crossed by the study area are included in Table 3.13-22: Named Waterbodies Crossed by Study Area 4DTable 3.13-22: Named Waterbodies Crossed by Study Area 4D. The identified waterbody types for all waterbodies (named and unnamed) are as follows:

- five artificial waterways,
- 16 canal/ditch,
- one connector between waterways, and
- 223 streams/rivers.

Impaired Surface Waters

As indicated by a review of the SWRCB California 2020-2022 Integrated Report Map (SWRCB 2022a), five impaired water bodies would be crossed by Segment N and no impaired waterbodies would be crossed by Segment Q, as listed in Table 3.13-23: Impaired Waterbodies Crossed by Study Area 4D. regarding the pollutants that exceeded water quality standards are included within the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b). The listings associated with the waterbodies specify that pH, indicator bacteria, turbidity, and iron are the pollutants causing a lack of attainment of water quality standards for certain waterbodies within the study area and the listings do not identify sources of the pollutants.

Table 3.13-22: Named Waterbodies Crossed by Study Area 4D

Waterbody Name	Segment(s) Crossed	Waterbody Classification
Garnet Wash	N	Artificial waterway
Potrero Creek	N	Stream/river
San Gorgonio River	N	Stream/river
Montgomery Creek	N	Stream/river
Gage Canal	N	Canal/ditch
Temescal Wash	N	Stream/river
Riverside Canal	N	Canal/ditch
Santa Ana River	N	Canal/ditch
Main Street Wash	N	Stream/river
Whitewater River	N	Stream/river
Smith Creek	N	Stream/river
Pinkham Wash	Q	Stream/river
East Side Drain	Q	Artificial waterway
Mission Creek	Q	Artificial waterway
C-03 Canal	Q	Canal/ditch
D-10 Canal	Q	Canal/ditch
F Canal	Q	Canal/ditch
West Side Drain	Q	Canal/ditch
C Canal	Q	Canal/ditch
Corn Springs Wash	Q	Stream/River

Table 3.13-23: Impaired Waterbodies Crossed by Study Area 4D

Waterbody Name[248]	RWQCB Jurisdiction	Pollutant
Prado Basin Management Zone	Regional Board 8 – Santa Ana Region	pH
Goldenstar Creek	Regional Board 8 – Santa Ana Region	Indicator Bacteria
San Timoteo Creek Reach 3 (Yucaipa Creek to Headwaters)	Regional Board 8 – Santa Ana Region	Indicator Bacteria
West Branch Millard Canyon Creek	Regional Board 7 – Colorado River Basin	Turbidity
Deep Canyon Creek (Morongo Area)	Regional Board 7 – Colorado River Basin	Iron, turbidity

Source: SWRCB 2022a

Floodplains

The FEMA Flood Hazard Layer (FEMA 2023) indicates that the study area crosses several floodplains, including the 500-year and 100-year-floodplains. Floodplains crossed by the segments within this study area are depicted in Attachment E: Hydrological Maps.

Groundwater

The study area crosses eleven groundwater basins (DWR 2022a). Segment N would cross the Upper Santa Ana Valley-Temescal, Upper Santa Ana Valley-Riverside Arlington, San Jacinto, Upper Santa Ana Valley-San Timoteo, Coachella Valley-San Gorgonio Pass, and Coachella Valley Indio groundwater Basins. Segment Q would cross the Coachella Valley-Indio, Coachella Valley-Desert Hot Springs, Orocopia Valley, Chuckwalla Valley, Palo Verde Mesa, and Palo Verde Valley groundwater basins.

Publicly available data from the DWR (DWR 2022b) was reviewed to estimate existing depths to groundwater. Groundwater readings from 79 monitoring wells located within two miles of the study area were reviewed as listed in Table 3.13-24: Groundwater Readings within Two Miles of Study Area 4D. The 2022 and 2023 groundwater depth readings at these monitoring wells ranged from 19.3 to 798.6 feet bgs. Groundwater levels within the study area are expected to vary based on a number of factors, including annual precipitation, permeable surfaces, and changes to the hydrological basins over time.

[248] Waterbody names of impaired waterbodies are based on data from the SWRCB California 2020-2022 Integrated Report and may differ from waterbody names included in Table 3.13-22: Named Waterbodies Crossed by Study Area 4D, which are taken from USGS NHD data.

Table 3.13-24: Groundwater Readings within Two Miles of Study Area 4D

Segment	Number of Monitoring Wells within Two Miles	Range in Groundwater Depth Readings	
		Shallowest Depth from Most Recent Readings (bgs)	Deepest Depth from Most Recent Readings (bgs)
N	62	19.3	798.6
Q	17	102.2	243.1

Source: DWR 2022b

3.13.7.2 Impact Discussion

Potential impacts to hydrology and water quality as a result of construction and O&M of Segments N and Q are summarized in Table 3.13-25: Study Area 4D Potential Impacts.

Table 3.13-25: Study Area 4D Potential Impacts

Potential Impact	Project Phase	Segment N	Segment Q
Water Quality Degradation	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Groundwater Supply Decrease or Recharge Interference	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact
Location within Flood Hazard Zones	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact

Surface Waters

As detailed in Section 3.13.7.1 Existing Conditions in the Surface Waters subsection, Study Area 4D would cross 245 mapped waterbodies, including 11 named waterbodies and 93 unnamed waterbodies that would be crossed by Segment N and nine named waterbodies and 132 unnamed waterbodies that would be crossed by Segment Q. Segment N would cross five impaired waterbodies as defined by the SWRCB California 2020-2022 Integrated Report (SWRCB 2022b).

Typical impacts to surface waters that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Surface Waters subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area that would cross surface waters. Construction and O&M activities would be likely to cause temporary impacts to surface water quality for segments that would cross surface waters. Most of the potential impacts related to construction and O&M could be reduced

through the implementation of the AMMs detailed in Section 3.13.7.3 Potential Avoidance and/or Minimization Measures.

Floodplains

Segments N and Q would be installed within and across the floodplains that are detailed in Section 3.13.7.1 Existing Conditions in the Floodplains subsection. Typical impacts related to floodplains that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Floodplains subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified the segments in this study area that would cross floodplains. Construction and O&M activities would likely not cause permanent impacts related to floodplains. Potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.13.7.3 Potential Avoidance and/or Minimization Measures.

Groundwater

Based on recently recorded groundwater levels within two miles of Study Area 4D, construction activities would have a potential for groundwater to be encountered during excavation associated with pipeline installation. Typical impacts to groundwater that would be anticipated as a result of construction and O&M activities are detailed in Study Area 1A Section 3.1.7.2 Impact Discussion in the Groundwater subsection. Impacts, as previously described in Section 3.1.7.2 Impact Discussion, would be similar to those identified for the segments in this study area. Construction and O&M activities could cause temporary impacts to groundwater. Most of the potential impacts related to construction and O&M could be reduced through the implementation of the AMMs detailed in Section 3.13.7.3 Potential Avoidance and/or Minimization Measures.

3.13.7.3 Potential Avoidance and/or Minimization Measures

In general, compliance with the Sections 401, 402, and 404 of the federal CWA would minimize impacts to water quality during construction of Segments N and Q. Additional BMPs were previously detailed in Table 3.1-26: Hydrology and Water Quality Potential Avoidance and Minimization Measures for Study Area 1A. The measures would be the same for Study Area 4D and could be implemented to avoid or reduce potential impacts to segments within this study area.

3.13.8 Land Use and Planning

3.13.8.1 Existing Conditions

Section 3.13.1 Study Area 4D Description provides a description of each segment and Table 3.13-1: Jurisdictions Crossed by Study Area 4D details the distance the segments would traverse each local jurisdiction within Study Area 4D.

3.13.8.2 Land Use

The western terminus of Segment N would cross open space/public (associated partially with Chino Hills State Park), an industrial area, and agricultural land before traveling along paved roads through mostly residential areas with larger industrial areas in the cities of Corona and Moreno Valley, as well as open space/public lands, commercial, and mixed-use areas interspersed. At the eastern edge of the City of Moreno Valley, the segment would roughly travel along unpaved roads through residential and industrial areas and open space/public land associated with the Badlands. Once the segment would reach the City of Beaumont, the remaining portion of segment would travel along a mixture of paved or unpaved roads, excluding the crossings of Smith Creek/San Gorgonio River and an unnamed drainage west of the unincorporated community of Whitewater. Surrounding uses would be mostly a mixture of open space/public lands and residential areas with some commercial and industrial areas in the cities of Beaumont, Banning, and Palm Springs and the unincorporated community of Cabazon. The eastern portion of the segment would travel through a wind farm.

Most of Segment Q would roughly follow unpaved roads and existing utility corridors. The western portion segment would travel through residential, industrial, and mixed-use areas associated with the cities of Palm Springs, Cathedral City, Indo, and Coachella. The central portion of the segment would travel through open space/public lands, as well as small commercial areas. The eastern portion of the segment would travel through agricultural, residential, industrial, and commercial areas associated with the City of Blythe.

General plan land use designations that would be crossed by the segment and corridor within each jurisdiction within Study Area 4D are detailed in Table 3.13-26: General Plan Designations Crossed by Study Area 4D.[249]

[249] As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Table 3.13-26: General Plan Designations Crossed by Study Area 4D

Segment	Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[250] (acres)
N	City of Banning	Agricultural	<0.1	2.3
		High-Density Residential	0.3	10.9
		Industrial	0.6	16.8
		Low-Density Commercial	N/A[251]	6.9
		Medium-Density Residential	1.3	50.5
		Open Space and Public Lands	N/A[251]	7.9
	City of Beaumont	High-Density Residential	N/A[251]	12.2
		Industrial	0.4	17.3
		Low-Density Commercial	N/A[251]	4.1
		Medium-Density Residential	<0.1	6.5
		Open Space and Public Lands	N/A[251]	<0.1
	City of Chino Hills	Agricultural	1.9	45.1
		Open Space and Public Lands	3.9	96.5
	City of Corona	High-Density Residential	N/A[251]	2.1
		Industrial	0.1	49.5
		Low-Density Commercial	N/A[251]	4.5
		Medium-Density Residential	N/A[251]	0.6
		Mixed Use	N/A[251]	3.6
		Open Space and Public Lands	<0.1	4.1
		Other	<0.1	1.0

[250] The corridor includes 100 feet on either side of the pipeline.
[251] This is not applicable because the pipeline would not cross the land use designation.

Segment	Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[250] (acres)
	City of Moreno Valley	High-Density Residential	0.8	23.5
		Industrial	2.7	65.0
		Low-Density Commercial	N/A[251]	6.9
		Medium-Density Residential	0.1	45.3
		Mixed use	N/A[251]	0.8
		Open Space and Public Lands	N/A[251]	1.6
		Other	N/A[251]	0.2
	City of Palm Springs	Industrial	1.5	37.3
		Medium-Density Residential	N/A[251]	0.2
		Open Space and Public Lands	1.7	42.6
	City of Riverside	Agricultural	N/A[251]	<0.1
		High-Density Residential	N/A[251]	0.1
		Industrial	N/A[251]	0.4
		Low-Density Commercial	<0.1	14.4
		Low-Density Residential	0.2	43.0
		Medium-Density Residential	N/A[251]	28.6
		Mixed Use	N/A[251]	<0.1
		Open Space and Public Lands	N/A[251]	6.1
		Other	N/A[251]	1.3
		Planned Development	N/A[251]	0.8
	County of Orange	Open Space and Public Lands	0.4	10.7
	County of Riverside	Agricultural	0.7	12.9
		High-Density Residential	0.1	12.1
		Industrial	2.0	109.0

Segment	Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[250] (acres)
		Low-Density Commercial	1.0	37.4
		Medium-Density Residential	8.6	247.4
		Mixed Use	N/A[251]	3.9
		Open Space and Public Lands	7.2	201.9
		Other	3.4	80.8
		Planned Development	N/A[251]	0.4
	San Bernardino County	Open Space and Public Lands	<0.1	0.7
Q	City of Blythe	Agricultural	0.1	7.7
		High-Density Residential	1.0	20.4
		Industrial	N/A[251]	7.9
		Low-Density Commercial	N/A[251]	3.7
		Medium-Density Residential	N/A[251]	11.6
		Mixed Use	0.8	28.8
		Open Space and Public Lands	<0.1	1.4
	City of Cathedral City	Industrial	1.2	25.6
		Medium-Density Residential	0.1	2.7
		Mixed Use	1.8	42.4
		Open Space and Public Lands	0.2	3.2
	City of Coachella	Low-Density Residential	2.0	49.3
		Open Space and Public Lands	1.1	27.8
	City of Indio	Industrial	0.1	2.4
		Low-Density Commercial	N/A[251]	0.1

Segment	Jurisdiction	General Plan Designation	Approximate Length Crossed (miles)	Approximate Area within Corridor[250] (acres)
		Open Space and Public Lands	<0.1	0.9
		Planned Development	3.5	84.6
	City of Palm Springs	Industrial	2.8	67.4
		Open Space and Public Lands	1.3	32.6
	County of Riverside	Agricultural	2.1	74.6
		Industrial	3.5	96.6
		Low-Density Commercial	2.2	54.1
		Medium-Density Residential	6.4	168.3
		Mixed Use	N/A[251]	0.3
		Open Space and Public Lands	84.6	2,047.0
		Planned Development	N/A[251]	0.7

Source: California Governor's OPR 2024

Special Land Use Designations

As described in the following subsections and detailed in Table 3.13-27: Agency-Managed and Protected Lands Crossed by Study Area 4D, Table 3.13-28: Linear Infrastructure and Protected Trails Crossed by Study Area 4D and Attachment F-1: Special Land Use Designations Maps, Segments N and Q would cross lands managed by federal, state, and local agencies, as well as non-governmental organizations. Section 3.13.3 Biological Resources contains a discussion of HCP/NCCP boundaries that the segments would cross within Study Area 4D. The HCP/NCCP boundaries are detailed in Attachment F-2: Management and Conservation Plans Map.

Lands Managed by Federal Agencies

The eastern portion of Segment N and most of Segment Q would cross land managed by the BLM. The Areas of Environmental Concern (ACECs) crossed by these segments are detailed in Table 3.13-9: Areas of Critical Environmental Concern within Study Area 4D. The ACECs are managed by the BLM's Palm Springs/South Coast Field Office under the DRECP and do not allow renewable energy development (BLM 2016). As detailed in Attachment F-2: Management and Conservation Plans Map, BLM-managed land in Study Area 4D is managed under the CDCA Plan (BLM 1980), as well as the DRECP, Northern & Eastern Colorado Desert Coordinated Management Plan (BLM 2002b), and the CDCA Plan Amendment for the Coachella Valley (BLM 2002a), which are LUPAs to the CDCA Plan.

In addition, Segments N and Q would cross National Conservation Land of the California Desert, which was designated under the DRECP and is closed to all energy development (BLM 2023). National monuments are created by U.S. Presidents using the authority granted by the Antiquities Act of 1906 (54 U.S.C. § 320301 et seq.). Administration of national monuments, national conservation areas, and other similar designations adhere to the policies listed in Manual 6220, which include avoiding granting new ROWs or authorizing use of utility corridors within these areas (BLM 2017).

Segment Q would cross the Coachella National Wildlife Refuge, which is managed by the USFWS as part of the National Wildlife Refuge System. The USFWS Service Manual Parts 340 and 601 to 603 provide policies and guidance for wildlife refuge management, including compatible use determinations and discouraging the types of uses included in ROW requests (USFWS 2023).

Segment N would cross the March ARB, which is managed by the DoD and is also utilized by civilian aircraft and organizations. The mission of the base is to provide airlift support and training (Airforce Reserve Command 2018).

Segment N would cross the Morongo Indian Reservation and Segment Q would cross the Aqua Caliente Indian Reservation, which are managed by the BIA.

Table 3.13-27: Agency-Managed and Protected Lands Crossed by Study Area 4D

Segment	Jurisdiction	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[252] (acres)
Federal				
N	BIA	Morongo Indian Reservation	2.2	60.6
	BLM	BLM-Managed Land	0.6	14.3
		National Conservation Land of the California Desert	0.3	6.0
	DoD	March ARB	3.8	95.2
Q	BIA	Aqua Caliente Indian Reservation	3.2	78.2
	BLM	BLM-Managed Land	46.4	1,125.3
		Alligator Rock ACEC	3.5	76.5
		Chuckwalla ACEC	36.6	895.5
		Chuckwalla Valley Dune Thicket ACEC	1.0	23.9
		Coachella Valley Fringe-toed Lizard ACEC	0.5	12.5
		Mule-McCoy Linkage ACEC	2.5	60.9
		National Conservation Land of the California Desert	32.9	786.1
		Palen-Ford Playa Dunes ACEC	6.2	150.6
	USFWS	Coachella Valley National Wildlife Refuge	1.7	41.9

[252] The corridor includes 100 feet on either side of the pipeline.

Segment	Jurisdiction	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[252] (acres)
State				
N	California State Parks	California Citrus State Historic Park	N/A[253]	3.9
		Chino Hills State Park	4.5	110.5
	Coachella Valley Mountains Conservancy	Conservation Land	0.2	4.5
Q	CDFW	Coachella Valley Ecological Reserve	0.9	22.9
	Coachella Valley Mountains Conservancy	Conservation Land	0.4	10.7
Regional				
N	Coachella Valley Conservation Commission (CVCC)	Conservation Land	1.0	25.2
	County of Riverside	Williamson Act Property	0.5	7.6
	MRCA	Open Space	0.6	14.5
	Regional Conservation Authority (RCA)	Conserved Land	0.5	13.1
Q	CVCC	Conservation Land	0.9	20.7
	County of Riverside	Williamson Act Property	0.3	8.7
	RivCoParks	Park and Open Space Land	<0.1	1.2

[253] This is not applicable because the pipeline would not cross the special land use.

Segment	Jurisdiction	Special Land Use	Approximate Length Crossed (miles)	Approximate Area within Corridor[252] (acres)
City				
N	City of Beamont	DeForge Park	N/A[253]	0.1
	City of Corona	City Park	N/A[253]	2.3
		Contreras Park	N/A[253]	<0.1
	City of Moreno Valley	Woodland Park	N/A[253]	0.7
	City of Riverside	California Citrus State Historic Park	N/A[253]	1.5
		Victoria Cross Park	N/A[253]	0.5
Q	City of Blythe	Miller Park	N/A[253]	1.0
Non-Governmental Organizations				
N	Friends of the Desert Mountains	Conservation Land	0.4	9.3
	Rivers & Lands Conservancy	Meridian Conservation Areas 1	N/A[253]	0.9
		Meridian Conservation Areas 2	N/A[253]	1.7
Q	Wildlife Heritage Foundation	Red Bluff Preserve	0.3	6.3
		West Sonoran Preserve	1.5	36.4

Sources: BLM 2022, BLM 2023a, BLM 2023c, BLM 2023d, CDFW 2023a, California Department of Conservation 2023, DISDI 2024, GreenInfo Network 2023a, GreenInfo Network 2023b

Table 3.13-28: Linear Infrastructure and Protected Trails Crossed by Study Area 4D

Segment	Agency/Organization	Special Land Use	Number of Times Crossed by the Project Route
Federal			
N	NPS	Juan Bautista de Anza National Historic Trail	1
	USFS	PCT	1
	NPS	Butterfield Overland National Historic Trail	1
State			
N	DWR	California Aqueduct	1
	HRSA	Los Angeles-to-San Diego Section	2
Regional			
N	MWD	Colorado River Aqueduct	1

Sources: BLM 2023e, California Department of Technology 2024, USGS 2023, USFS 2022b

Segment N would cross the Butterfield Overland National Historic Trail at a location west of Auto Center Drive and the City of Corona. The National Trails office for Regions 6, 7, and 8 of the NPS administers the trail. Segment N would cross the Juan Bautista de Anza National Historic Trail along Cactus Avenue on the southern border of the City of Moreno Valley. The Anza Trail Administrative Office of the NPS administers the trail. These offices do not manage any land but work with partners to help share and protect national historic trails (NPS 2023b, NPS 2023c). The 1996 Comprehensive Management and Use Plan (NPS 1996) and the 2023 Foundation Document (NPS 2023a) inform administration and planning decisions for the Juan Bautista de Anza National Historic Trail (NPS 2023a). Administration of national historic trails adheres to the policies listed in Director's Order #45 and Reference Manual 45 (NPS 2013, NPS 2019).

Segment N would also cross the PCT along Tamarack Road and north of I-10 within the unincorporated community of Whitewater. This portion of the trail occurs within public roads for Caltrans and Riverside County, as well as conservation land managed by the Coachella Valley Mountains Conservancy. The PCT is a National Scenic Trail managed by the USFS in partnership with other local, state, and federal agencies and organizations (USFS 2023). The 1982 Pacific Crest National Scenic Trail Comprehensive Plan and the 2022 Foundation Document inform management considerations, decisions, and planning efforts for the PCT (USFS 1982, USFS 2022).

The National Trails System Act of 1968, as amended, governs the activities of the National Trails System, which includes the PCT, Butterfield Overland National Historic Trail, and the Juan Bautista de Anza National Historic Trail (16 U.S.C. § 1241 et seq.).

Lands Managed by State Agencies

Segment N or the corridor would cross Chino Hills State Park and California Citrus State Historic Park, which are managed by the California State Parks. A portion of the California Citrus State Historic Park is also managed by the City of Riverside. Chino Hill State Park is an open space area that provides a critical link in the Puente-Chino Hills biological corridor and helps preserve local biodiversity (California State Parks 2018). California Citrus State Historic Park is dedicated to preserving and showcasing the history of the citrus industry (California State Parks 2024). The Chino Hills State Park General Plan, Chino Hills State Park Road and Trail Management Plan, and California Citrus State Historic Park General Plan inform the long-range development, management, and operation for each park (California State Parks 1995; California State Parks 1999; California State Parks 2020).

Segment Q would cross the Coachella Valley Ecological Reserve, which is managed by the CDFW and was acquired to protect the habitat of a threatened lizard species, as well as preserve blow-sand habitat and the flora and fauna native to this habitat (CDFW 2023).

Segment N would cross conservation land north of I-10 and along Tamarack Road in the community of Whitewater that is managed by the Coachella Valley Mountains Conservancy. Segment Q or the corridor would also cross Coachella Valley Mountains Conservancy land in the following locations:

- northwest of the intersection of Amite Lane and Ramon Road in the unincorporated community of Thousand Palms,
- along Coyote Song Way adjacent to the Mountain Vista Golf Club, and
- between I-10 and Box Canyon Road in Riverside County (2 locations).

The Conservancy uses the Coachella Valley MSHCP/NCCP priorities to guide its land acquisitions (Coachella Valley Mountains Conservancy 2019).

Segment N would cross the California Aqueduct east of the intersection of Heacock Street and Cactus Avenue in the City of Moreno Valley. The California Aqueduct is operated by the DWR.

Segment N would also cross the following two alternatives for the Los Angeles-to-San Diego section of the California High-Speed Rail alignment:

- Corona Option, west of the intersection of E 6th Street and Cardiff Street in the City of Corona; and
- March ARB Option, east of the intersection of I-215 and Cactus Avenue in the unincorporated community of March ARB.

The California HRSA is responsible for planning, designing, building, and operating the high-speed rail system.

The segments would also cross state highways managed by Caltrans.

Lands Managed by Local Agencies

As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. However, in locating project facilities, SoCalGas would consult with local agencies regarding land use matters.

Segment N would cross the Colorado River Aqueduct along Railroad Avenue and west of the community of Whitewater. The Colorado River Aqueduct is operated by the Metropolitan Water District of Southern California (MWD).

Segment N or the corridor would cross the following parks and open space areas:

- Open space in the Chino Hills, which is managed by the MRCA;
- City Park and Contreras Park, which are managed by the City of Corona;
- California Citrus State Historic Park and Victoria Cross Park, which are managed by the City of Riverside;
- Woodland Park, which is managed by the City of Moreno Valley; and
- DeForge Park, which is managed by the City of Beaumont.

Segment Q or the corridor would cross the following parks:

- Miller Park, which is managed by the City of Blythe; and
- Park and open space land, which is managed by the Riverside County Regional Park and Open-Space District (RivCoParks).

Segment N would cross conserved land managed by the Western Riverside County RCA in the Badlands west of the City of Beaumont. The RCA acquires land in accordance with the conservation goals of the Western Riverside County MSHCP (RCA 2023).

Segment N would cross conservation land east of the Whitewater River that is managed by the CVCC. Segment Q would also cross CVCC conservation land along Coyote Song Way adjacent to the Mountain Vista Golf Club and west of the Coachella Rest Area in Riverside County. The CVCC acquires land in accordance with the conservation goals of the Coachella Valley MSHCP (CVCC 2023).

Segments N and Q would cross Williamson Act properties. The Williamson Act allows local governments to enter into contracts with private landowners to restrict land to agricultural or related open space uses. Participating counties and cities establish their own rules regarding uses of these properties. The most similar use for Riverside County includes gas, electric, water, and communication utility facilities, and public service

facilities of like nature operated by a public agency or mutual water company (Riverside County 1988).

Lands Managed by Non-Governmental Organizations

Segment N would cross conservation land managed by the Friends of the Desert Mountains east of the intersection Tipton Road and Wendy Road and along the Whitewater River in the City of Palm Springs. The Segment N corridor would also cross two conservation easements along Van Buren Boulevard in the March ARB community that are managed by the Rivers and Lands Conservancy.

Segment Q would cross the following preserves managed by the Wildlife Heritage Foundation in Riverside County:

- West Sonoran Preserve, south of the Coachella Rest Area, north of Box Canyon Road, and west of the intersection of Eagle Mountain Road and I-10; and
- Red Bluff Preserve, west of the intersection of Eagle Mountain Road and I-10.

3.13.8.3 Impact Discussion

In addition to potential impacts specifically related to Study Area 4D, typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion. No land use conflicts would be anticipated for O&M activities beyond those mentioned for construction.

The potential for construction and O&M of the pipeline segments to impact communities and special land use designations within the study area is discussed in the following subsections and summarized in Table 3.13-29: Land Use and Planning Potential Impacts Study Area 4D.

Table 3.13-29: Land Use and Planning Potential Impacts Study Area 4D

Potential Impact	Project Phase	Segment N	Segment Q
Divide a community	Construction	No Impact	No Impact
	O&M	No Impact	No Impact
Conflict with an existing plan, policy, or regulation	Construction	Potential Impact	Potential Impact
	O&M	Potential Impact	Potential Impact

Communities

Typical impacts that could be anticipated to occur from construction and O&M activities are discussed in Study Area 1A Section 3.1.8.2 Impact Discussion in the Communities subsection and would not divide a community.

Land Uses

The segments could generally follow existing SoCalGas pipeline corridors and/or public roadways. A couple sections of Segments N and Q do not appear to have any existing access, so new temporary or permanent access roads could be needed in those areas during construction and O&M. If needed, the permanent access road footprints are anticipated to be relatively small and would allow for the existing or planned land uses. Depending on the location and jurisdiction, any new roads would likely require a new easement, landowner agreement, and/or additional permitting.

The segments could occur primarily in open space areas and could cross multiple land uses on publicly owned and private properties. Construction and O&M of underground utilities and associated facilities are typically considered an allowable use in many jurisdictions. Jurisdictions or land use designations with additional considerations are discussed further in this section.

Federal

The segments could cross BLM- and USFWS-managed lands with special management considerations (i.e., ACECs, a national monument, national conservation land, and a national wildlife refuge). These types of designations provide for protection of plants and animals, habitat, cultural resources, and/or other resources, and generally discourage or do not allow new utility scale projects (BLM 1980, 2002a, 2002b, 2004, 2006a, 2006b, 2012, 2017, 2023b; USFWS 2023). Although construction impacts would be temporary, the segments could be inconsistent with the goals, objectives, and/or mission of these areas and may not be an allowable or compatible use. For the most part, existing SoCalGas pipeline corridors could traverse these areas, but any new construction for the segments may still not be an allowable or compatible use. Coordination with the applicable agencies could determine whether construction and O&M of the pipeline could be compatible with these areas. In addition, any work outside of existing easements would require a grant of land rights.

In addition, within the BLM's CDCA Plan area, any new pipelines over 12 inches in diameter must be located within one of 16 designated utility planning corridors. Contingent corridors may also be used if a project cannot be sited within one of the designated corridors, but the exception would need to be processed through an amendment to the CDCA Plan (BLM 1980). On BLM-managed land, Segment N and Q could follow Designated Corridor K, excluding one small section north of the City of Cathedral City where Segment Q briefly leaves the corridor. A CDCA Plan amendment would be required for the portion of Segment Q that travels outside of the corridor on BLM-managed land.

Further, within the BLM's DRECP area, Segment Q could cross BLM-managed land designated as DFAs, GPLs, Conservation Areas, and RMAs. As discussed in Study Area 3C Section 3.6.8.2 Impact Discussion and Study Area 3D Section 3.7.8.2 Impact Discussion, renewable energy-related activities within GPLs require a plan amendment and renewable energy development is allowable in DFAs with the applicable CMAs. Installation of a transmission pipeline may not be a compatible use with Conservation

Areas or RMAs due to the additional restrictions and management considerations in these areas (BLM 2016).

Segment N could cross the March ARB along a public road within a warehouse district that is occupied primarily by private corporations; therefore, it is likely that construction and O&M of the pipeline would not conflict with operations of the base. Any work outside of existing easements on DoD-managed land would require the issuance of a new easement.

Segment N could cross the Morongo Indian Reservation, which is the reservation for the Morongo Band of Mission Indians, and Segment Q would cross the Aqua Caliente Indian Reservation, which is the reservation for the Agua Caliente Band of Cahuilla Indians. While the existing SoCalGas pipeline corridors could traverse some of these areas, construction or O&M of the pipeline could not align with the tribes' long-term plans for use of the reservation and would require approval from the tribes and the BIA. Coordination with the tribes could determine whether these areas are compatible with the construction and O&M of a pipeline. Any work outside of existing easements on BIA-managed land would require the issuance of a new easement.

Segment N could cross the federally administered Juan Bautista de Anza National Historic Trail and Butterfield Overland National Historic Trail on private land and public roads. The National Historic Trail designation has no effect on the rights of private landowners. Segment N could also cross the federally administered PCT on public roads managed by the County of Riverside. Portions of the PCT are protected through easements on non-federal lands; however, the pipeline could cross the PCT along an existing pipeline corridor where SoCalGas likely has existing land rights. Coordination with the County of Riverside could determine if any additional easements are needed. Although temporary impacts from construction could occur, the pipeline would not be anticipated to permanently impact the scenic or historical qualities of these trails or interfere with the nature and purposes of these trails. In addition, O&M of the pipeline would not be anticipated to conflict with the long-term management and use of these trails. Therefore, no conflicts with these trails would be anticipated.

State

Segment N could cross Chino Hills State Park and California Citrus State Historic Park. Although most impacts would be temporary, construction and O&M of the pipeline could conflict with management of resources within Chino Hills State Park. Segment N would generally follow an existing SoCalGas pipeline corridor within Chino Hills State Park, but any new construction for the segment may not be an allowable use. Because the segment could be located within public roads along the edge of California Citrus State Historic Park, it is likely that construction and O&M of the pipeline would not conflict with management of resources within the park. Construction and O&M activities would require a Right-of-Entry Permit and would need to be consistent with the applicable park planning documents.

The segments could cross a CDFW-managed ecological reserve and Coachella Valley Mountains Conservancy conservation land roughly along existing SoCalGas pipeline

corridors. CDFW ecological reserves are maintained primarily for the protection of specialized terrestrial or aquatic habitat types and rare, threatened, or endangered species (14 CCR § 630). The Coachella Valley Mountains Conservancy was created to acquire and hold, in perpetual open space, mountainous lands near the Coachella Valley (PRC § 33501). Although most impacts would be temporary, construction of the pipeline could conflict with these land uses.

The segments could also cross state-managed linear infrastructure, including the California Aqueduct, state highways, and two alternatives for the Los Angeles-to-San Diego section of the California High-Speed Rail alignment. The segments could require encroachment permits from the DWR and Caltrans for these crossings. No environmental review documents or timelines have been publicly distributed for the Los Angeles-to-San Diego section of the alignment (California HSRA 2024). Construction of the pipeline could conflict with implementation and construction of the alignment; however, it is unlikely the timing would overlap. Once constructed, crossing the alignment could require an encroachment permit from the California HSRA.

Local

The segments could cross privately owned Williamson Act properties that have specified agricultural or open space land use designations authorized under the California Land Conservation Act of 1965, which would require development to be consistent with these use designations. Similar uses to the pipeline were identified for these properties within Riverside County.

The segments or the corridor could also cross locally managed parks and open space areas, and although impacts would be temporary, construction of the pipeline could conflict with these land uses. As discussed in the High-Level Permitting Analysis prepared as a separate Angeles Link Phase 1 feasibility study, it is assumed that the CPUC has preemptory authority over local regulation of Angeles Link. While no conflicts with local agencies would be anticipated, when locating project facilities, SoCalGas would consult with local agencies regarding land use matters. Therefore, coordination with local agencies would be anticipated during future planning efforts.

While most of the parks/open space areas would only be subject to local discretionary authority, Segments N and Q could cross conserved lands managed by the CVCC and/or the RCA. As these lands are associated with MSHCPs, there may be additional underlying protections (e.g., conservation easements) that could conflict with the pipeline construction and O&M activities.

Non-Governmental Organizations

The segments could cross conservation land, conservation easements, and preserves managed by non-governmental organizations. Conservation easements permanently limit uses of the land to protect specific conservation values (e.g., species or habitat). Although most impacts would be temporary, construction of the pipeline would likely conflict with this land use. An existing SoCalGas pipeline corridor traverses the preserves. Further review of the easements could identify whether specific restrictions

and/or allowable uses within the easement agreements pertain to the construction and O&M activities.

3.13.8.4 Potential Avoidance and/or Minimization Measures

Based on similar pipeline projects, the segments would not divide an established community. Some conflicts with applicable land use plans or policies could occur as a result of construction and O&M of the pipeline; however, potential impacts are contingent on the actual pipeline routing and design. As such, AMMs that could reduce potential land use conflicts are shown in Table 3.13-30: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 4D. Additionally, close coordination with land-managing agencies and local jurisdictions would be recommended.

Table 3.13-30: Land Use and Planning Potential Avoidance and Minimization Measures for Study Area 4D

Potential Impact	Potential Avoidance and Minimization Measures
Land use conflicts with ACECs, a national monument, national conservation land, and a national wildlife refuge	The pipeline could be routed outside of these areas, to the extent feasible.
Land use conflict with the CDCA Plan	The pipeline could be fully routed within designated utility planning corridors on BLM-managed land, to the extent feasible.
Land use conflict with the DRECP	The pipeline could be routed outside of GPLs, Conservation Areas, or RMAs, to the extent feasible, or a DRECP amendment could be pursued for the portion of the alignment within GPLs.
Potential land use conflict with tribal land	The pipeline could be routed outside of these areas, to the extent feasible.
Potential land use conflict with Chino Hills State Park	The pipeline could be routed outside of the limits of the park or within existing SoCalGas pipeline corridors, to the extent feasible.
Land use conflicts with CDFW- and Coachella Valley Mountains Conservancy-managed land	The pipeline could be routed outside of these areas, to the extent feasible.
Potential land use conflicts with CVCC- and RCA-managed land	The pipeline could be routed outside of the limits of the park or within existing SoCalGas pipeline corridors, to the extent feasible.
Potential land use conflicts with conservation easements/land/preserves	The terms and conditions of the conservation easements/land/preserves could be reviewed for conflicts, or the pipeline could be routed outside of the conservation easements/preserve, to the extent feasible.

3.14 NON-LINEAR FACILITIES

Non-linear facilities, such as compressor stations and valves, are essential components of a pipeline system that control the flow of gas during operation of the system. These facilities are typically aboveground and within secured areas that limit public access for security and safety reasons. While the Pipeline Sizing and Design Criteria Study (SoCalGas and Burns and McDonnell 2024) provides additional information about these non-linear facilities, a general description of these facilities and high-level analysis of the potential environmental impacts associated with these facilities is provided in the following subsections.

3.14.1 Facility Descriptions

The following facility descriptions are used for the non-linear facilities in Angeles Link:

- Compressor Station: Compressor stations along a pipeline advance the flow of gas and are designed to operate on a nonstop basis (U.S. Energy Information Administration [USEIA] 2007). Compression equipment is typically housed within a building and other ancillary equipment (such as pipelines, valves, vessels/tanks, security lighting, cameras and perimeter block wall). The three compressor types that have been evaluated for use to transport clean renewable hydrogen are: centrifugal, diaphragm, and reciprocating. Angeles Link is assumed to require two to three compressor stations in total, using reciprocating (approximately 50,000 hp) compressors potentially powered by electricity. Compressors could result in emissions of NO_X if they are not powered by electricity. The equipment configuration and location of compressor stations are not known at this time and will be determined in a future phase based on detailed engineering design.

- Pressure-Limiting Station: A pressure-limiting station controls the pipeline pressure downstream of the station. These are also fenced facilities.

- Mainline Valve: Valves are mechanical devices that control the flow of gas through pipelines. An open valve allows gas to flow freely. A closed valve stops the flow of gas to a pipeline segment to allow for maintenance, testing, repair, or replacement of that segment. Valves are utilized for isolating pipeline segments for safety purposes as well. These are also fenced facilities.

3.14.2 Maintenance Activities

It is assumed that a variety of maintenance activities must be conducted to maintain these non-linear facilities, including, but not limited to the following:

- Corrosion control: In order to protect pipelines from external corrosion, SoCalGas uses pipeline coating and cathodic protection. SoCalGas also manages the quality of the gas in its system and manages the system operations to prevent internal corrosion.

- Valve inspection: Valves utilized for isolating pipeline segments are inspected once each year and serviced for valve casing leak detection, proper valve identification, adequate lubrication, and valve operation.

3.14.3 Impact Discussion

Although the Evaluated Segments and associated non-linear facilities have not been engineered or designed yet, some impacts associated with non-linear facilities can be inferred based on experience with similar pipeline construction projects. However, at this feasibility stage, it is not possible to quantify or determine actual impacts until more detail on the design is available, specifically the exact location of the pipeline alignment and appurtenance facilities. Related to the environmental factors assessed for the Evaluated Segments in this chapter, the impacts from the construction and O&M of non-linear facilities for the same environmental factors are assessed at a high-level in the following subsections.

3.14.3.1 Air Quality and Greenhouse Gas Emissions

Air pollutant emissions from trucks and equipment and dust during construction could impact both air quality and GHG emissions. Operational emissions would occur from occasional patrol and maintenance vehicles and equipment of the appurtenant facilities along the pipelines. Operation of the compressor stations could also lead to air pollutant emissions and GHG emissions (depending on the power source). The primary potential for GHG emissions during operations would be from potential hydrogen leakage areas from the compressors during emergency venting and pipeline valves and connectors (SoCalGas 2024). The use of electric motor-driven compressors could limit and minimize air quality impacts by reducing NO_X emissions during operations. Some of the same AMMs used for the pipeline construction and O&M could be utilized to minimize potential impacts from non-linear facilities.

3.14.3.2 Biological Resources

Construction of the non-linear facilities could impact protected species and their habitat during clearing and/or grading sites for the construction and during operations (due to maintenance activities) resulting in habitat loss or fragmentation. Additionally, relocation/translocation of protected species could be necessary if the non-linear facility site is occupied by those protected species, which could directly impact those species. Construction or O&M activities could result in the introduction of invasive species, fugitive dust, stormwater runoff, erosion or sedimentation leading to degradation of protected species habitat. Noise or night lighting during construction or operation may result in displacement of protected species from the habitat around non-linear facilities. Additional O&M impacts would be limited to occasional repairs and maintenance. Some of the same AMMs used for the pipeline construction and O&M could be utilized to minimize potential impacts from non-linear facilities.

3.14.3.3 Cultural Resources and Tribal Cultural Resources

Construction would have a potential to impact cultural resources or tribal cultural resources during construction if the resources occur in or near the construction area.

O&M activities for appurtenant facilities along the pipeline would occur in previously disturbed areas, but they could occur outside the construction disturbance footprint and potentially impact cultural and tribal cultural resources. Some of the same AMMs used for the pipeline construction and O&M could be utilized to minimize potential impacts from non-linear facilities.

3.14.3.4 Energy

Construction and O&M activities could increase local energy use. Non-linear facilities, other than compressor stations, require limited amounts of power and are likely to only minimally increase energy use and would likely not exceed local energy provider capacity. Compressor stations may have more impact on local energy use; however, additional analysis would be needed after the engineering and design of the facilities are known. Non-linear facilities could also have an impact on renewable energy plans, depending upon the location of the actual facilities. Some of the same AMMs used for the pipeline construction and O&M could be utilized to minimize potential impacts from non-linear facilities.

3.14.3.5 Hazards and Hazardous Materials

Construction and O&M activities, including operation of the compressor station, would require the use of hazardous materials associated with construction and operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater if released into the environment. Additionally, these facilities could be located in areas near sensitive receptors or where other hazards exist and could have additional potential impacts. Some of the same AMMs used for the pipeline construction and O&M could be utilized to minimize potential impacts from non-linear facilities, as well as in accordance with any hydrogen-specific safety measures that may be developed by SoCalGas or by any applicable regulators for non-linear facilities.

3.14.3.6 Hydrology and Water Quality

Construction and O&M could cause water quality impacts from stormwater runoff from exposed soils and construction materials. It is likely that the O&M activities along the pipeline routes would be infrequent and limited in size and scope and be less likely to result in potential impacts to hydrology and water quality. Often aboveground appurtenance facilities, including compressor stations, could be located a sufficient distance from waterbodies to avoid the potential for direct impacts to surface waters during aboveground work at the facilities. Some of the same AMMs used for the pipeline construction and O&M could be utilized to minimize potential impacts from non-linear facilities.

3.14.3.7 Land Use and Planning

Construction and O&M activities are not likely to divide an existing community or conflict with special land use designations. Additional analysis would be needed after the engineering and design of the facilities are known, including the proposed location of

the compressor stations. Some of the same AMMs used for the pipeline construction and O&M could be utilized to minimize potential impacts from non-linear facilities.

4 – ALTERNATIVES ANALYSIS

In accordance with Ordering Paragraph (OP) 5(e) of the CPUC Phase 1 Decision (D.22-12-055), this Chapter evaluates the potential environmental impacts of Angeles Link as compared to identified alternatives, including a localized hydrogen hub or other decarbonization options such as electrification.[254] The Alternatives Study prepared as a separate Angeles Link Phase 1 analysis identified and evaluated a range of alternatives to Angeles Link that may meet the underlying need for Angeles Link. The Alternatives Study also evaluated the specific alternatives set forth for review in CPUC D.22-12-055, including evaluation of a localized hydrogen hub and electrification option.

The alternatives identified in the Alternatives Study generally fall within two categories: (1) hydrogen delivery alternatives, including a localized hydrogen hub; and (2) non-hydrogen alternatives. The Alternatives Study applied evaluation criteria to the initial range of hydrogen delivery alternatives and non-hydrogen delivery alternatives to select alternatives that should be evaluated further in this Environmental Analysis.[255] The subsections that follow provide general information about each of those alternatives selected for review in this study, as well as a high-level assessment of the potential environmental impacts of those identified alternatives compared to Angeles Link. However, the magnitude of potential environmental impacts could not be evaluated at this time given the preliminary nature of Angeles Link (e.g., location and construction methods). The relative magnitude of potential impacts for each of the alternatives was also not compared to Angeles Link.

As explained further in Chapter 1 – Introduction and Chapter 2 – Methodology and Regulatory Setting, the desktop analysis included review of the potential environmental impacts associated with the construction and O&M of multiple conceptual pipeline routes initially identified for Angeles Link that combined traverse approximately 1,300 miles (the Evaluated Segments). To facilitate the analysis, the Evaluated Segments were grouped into 13 study areas. From those conceptual pipeline routes initially identified, the Routing Study identified four preferred route configurations and the Route Variation 1 for Angeles Link. Those preferred route configurations generally extend across approximately 450 miles and include segments within some of the 13 study areas as defined for this study. Given that a single preferred route for Angeles

[254] Pursuant to OP 6(i), Chapter 3 evaluates the potential environmental impacts of the Evaluated Segments as identified in the Routing Study prepared as a separate Phase 1 feasibility analysis. Combined, the Evaluated Segments encompass the different possible routes and configurations Angeles Link may pursue.

[255] The evaluation criteria were developed in consideration of the need for Angeles Link, among other factors, and provided a framework to select which alternatives should be carried forward for cost and environmental impact assessments in accordance with the D.22-12-055 requirements to evaluate the associated costs and environmental impacts of alternatives. For more information on how alternatives were selected to be carried forward for review in this Environmental Analysis, refer to the separate Alternatives Study.

Link has not yet been selected and that the preferred route configurations currently span multiple study areas in this study, this alternatives comparison assumes the potential impacts reflected in Study Area 1A, or in the study area where the resource occurs, are representative of the potential impacts of Angeles Link. This methodology was used in order to compare the potential environmental impacts of the identified alternatives with the potential impacts associated with Angeles Link.

In addition, the potential environmental impacts associated with the identified alternatives are based on typical construction and O&M impacts that could be realized from similar energy projects and/or the general location of the alternatives. The high-level of analysis of the potential environmental impacts associated with the identified alternatives follows the methodology applied to evaluate the potential impacts of the Evaluated Segments and appurtenant facilities as set forth in Chapter 2 – Methodology and Regulatory Setting.

4.1 HYDROGEN DELIVERY ALTERNATIVES

4.1.1 Transportation by Truck

The transportation by truck hydrogen delivery alternative assumes the equivalent volume of hydrogen that is proposed to be conveyed through Angeles Link (up to 1.5 MMTPY over time) would be transported by truck from third-party production and storage sites to end users in Central and Southern California, including the Los Angeles Basin (inclusive of the ports of Los Angeles and Long Beach). For purposes of comparing the Evaluated Segment's potential environmental impacts to transportation by truck, this study assumes the highest potential volume of clean renewable hydrogen of 1.5 MMTPY may be transported by truck. The clean renewable hydrogen would be transported either in a liquefied or gaseous state from production facilities to end users. The trucks transporting the clean renewable hydrogen in the liquefied gas or gaseous state are assumed to use diesel combustion engines at the start of the trucking alternative with the fleets converting to hydrogen fuel cells over time in the 2030s.

This alternative assumes approximately half of the 1.5 MMTPY of clean renewable hydrogen would be produced in the San Joaquin Valley and half would be produced near the City of Lancaster. The trucks would generally take the following five principal routes: (i) San Joaquin Valley production to end users in the Los Angeles Basin; (ii) San Joaquin Valley production to underground storage facilities near San Joaquin Valley; (iii) Lancaster production to the Los Angeles Basin; (iv) Lancaster production to underground storage facilities near San Joaquin Valley; and (v) underground storage facilities near San Joaquin Valley to the Los Angeles Basin. Some volume of hydrogen would also be delivered to users in Southern California outside of the Los Angeles Basin and to users in Central California. Trucks would use existing highways, freeways and surface streets and would likely follow transportation corridors that parallel the routes of the Evaluated Segments from those two regional production centers. Trucks would be filled at loading bays located at each production facility and/or storage site. Truck trips would vary during the year based on changes in daily demand and supply throughout the year.

For the truck deliveries to the Los Angeles Basin, the clean renewable hydrogen would be delivered to an underground delivery pipeline within the Los Angeles Basin, to be transported by pipeline to the final end users. The underground delivery pipeline is estimated to be approximately 80 miles in length. The length of the delivery pipeline is based on the potential delivery pipeline within a forty-mile radius from the ports of Los Angeles and Long Beach (collectively, the Ports of Los Angeles), as the ports are expected to serve as key end users of the clean renewable hydrogen produced within the Los Angeles Basin.

Additional information and assumptions for the alternatives to truck clean renewable hydrogen as a liquid or a gas are discussed in the subsections that follow.

4.1.1.1 Trucking Hydrogen as a Liquid

Under the alternative to truck hydrogen as a liquid, clean renewable hydrogen would be liquefied at the proposed production facilities. Each liquid truck could transport up to four tons of hydrogen per load, and loading bays at the production or storage facilities could dispatch five trucks per day. Approximately 292 loading bays would be required across the two production locations and 394 loading bays would be required at the storage facility. This alternative assumes 3,200 trucks would be needed to serve the maximum day capacity in a given year, which equates to a 32-mile chain of contiguous gaseous hydrogen trucks in a single day on a day that delivers the maximum hydrogen production and maximum draw from storage. Once at the point of distribution, the liquid hydrogen would be regasified through regasification facilities for distribution. For purposes of this analysis, it is assumed the regasification facilities would be powered by electricity.

For purposes of the potential environmental impacts associated with this alternative, this study analyzes potential construction- and operational-related impacts from the following: (i) vehicle miles traveled from truck trips from the regional production centers and/or from storage facilities to end users as described previously; (ii) truck loading bays at production and storage facilities; (iii) liquefaction facilities at the production locations; (iv) regasification facilities at points of distribution; (v) an underground delivery pipeline to transport the clean renewable hydrogen to end users in the Los Angeles Basin.

4.1.1.2 Trucking Hydrogen as a Gas

Under the alternative to truck hydrogen as a gas, each truck could transport up to one ton of hydrogen per load, and loading bays at the production or storage facilities could dispatch four trucks per day. Approximately 1,460 loading bays would be required across the two production locations and 1,968 loading bays would be required at the storage facility. This alternative assumes 12,700 trucks would be needed per year to serve the maximum day capacity in a given year, which equates to a 127-mile chain of contiguous gaseous hydrogen trucks on a day that delivers the maximum hydrogen production and maximum draw from storage.

For purposes of the potential environmental impacts associated with this alternative, this study analyzes potential construction- and operational-related impacts from the following: (i) vehicle miles traveled from truck trips from the regional production centers and/or from storage facilities to end users as described previously; (ii) truck loading bays at production and storage facilities; and (iii) an underground delivery pipeline to transport the clean renewable hydrogen to end users in the Los Angeles Basin.

4.1.2 Transportation by Ship

This alternative considers the transportation of an equivalent amount of hydrogen as proposed to be conveyed by Angeles Link (up to 1.5 MMTPY) by ships either as liquid clean renewable hydrogen or in the form of methanol. For purposes of comparing the Evaluated Segment's potential environmental impacts to transportation by truck, this study assumes the highest potential volume of clean renewable hydrogen of 1.5 MMTPY may be transported by ship. This alternative also assumes ships would be powered by diesel (very low sulfur fuel oil) engines, with conversion to lower emissions engines over time.

Under this alternative, clean renewable hydrogen would be produced in Northern and/or Central California and transported via an underground pipeline to a nearby port. The shipping alternatives focused on the potential for shipping from a port in Central/Northern California given the potential production facilities identified in Northern and Central California through the California ARCHES hydrogen hub (ARCHES 2023).

4.1.2.1 Shipping Liquid Hydrogen

To ship clean renewable hydrogen as a liquid, the hydrogen produced in Central and Northern California would be sent to a liquefaction terminal at a nearby port. The liquid hydrogen would be loaded into marine vessels that could hold approximately 10,000 cubic meters of liquid hydrogen (or approximately 700 tons). The marine vessels would ship the hydrogen south to the Ports of Los Angeles, where the liquid hydrogen would be transferred into aboveground liquid storage spheres. This alternative assumes the liquid hydrogen would be stored in a storage area that includes 610 liquid spheres over approximately 135 acres. The liquid hydrogen would be regasified through a regasification facility at the ports before being directly served at the delivery pipeline to be transported to end users. For the purposes of this analysis, it is assumed the regasification facilities would be powered by electricity. This alternative would require approximately 27 ships to make approximately 2,100 round trips of ships per year between a port in Central/Northern California and the Ports of Los Angeles.

Once available through the Ports of Los Angeles, the clean renewable hydrogen would be delivered to an underground delivery pipeline within the Los Angeles Basin, to be transported by pipeline to the final end users. The underground delivery pipeline is estimated to be approximately 80 miles in length. The length of the delivery pipeline is based on the potential delivery pipeline within a 40-mile radius from the Ports of Los Angeles, as the ports are expected to serve as key end users of the clean renewable hydrogen produce within the Los Angeles Basin. Some volume of hydrogen would also

be delivered to users in Southern California outside of the Los Angeles Basin and to users in Central California.

For purposes of the potential environmental impacts associated with this alternative, this study analyzes potential construction- and operational-related impacts from the following: (i) nautical miles traveled by ships from a port in Central/Northern California to the Ports of Los Angeles; (ii) underground pipeline to transport clean renewable hydrogen from production areas to a port in Central/Northern California; (iii) liquefaction facility at a port in Central/Northern California; (iv) regasification facility at the Ports of Los Angeles; and (v) an underground delivery pipeline to transport the clean renewable hydrogen to end users in the Los Angeles Basin.

4.1.2.2 Shipping by Methanol

To ship clean renewable hydrogen as methanol, the hydrogen produced in Central and Northern California would be sent to a methanol conversion plant in nearby ports. The methanol would be loaded into marine vessels that could hold approximately 174,000 cubic meters of methanol. The marine vessels would ship the methanol south to the Ports of Los Angeles, where the liquid hydrogen would be transferred into a methanol-to-hydrogen reconversion facility. After reconversion, the hydrogen would be stored as liquid hydrogen and would be regasified through a regasification facility at the ports before being directly served at the delivery pipeline to be transported to end users. This alternative assumes the liquid hydrogen would be stored in a storage area that includes 610 liquid spheres over approximately 135 acres. For purposes of this analysis, it is assumed the hydrogen to methanol and methanol to hydrogen conversion facilities, as well as the regasification facility, would be powered by electricity. This alternative would require one to two ships making approximately 60 round trips per year between a port in Central/Northern California and the Ports of Los Angeles.

Once available through the Ports of Los Angeles, the clean renewable hydrogen would be delivered to an underground delivery pipeline within the Los Angeles Basin, to be transported by pipeline to the final end users. The underground delivery pipeline is estimated to be approximately 80 miles in length. The length of the delivery pipeline is based on the potential delivery pipeline within a 40-mile radius from the Ports of Los Angeles, as the ports are expected to serve as key end users of the clean renewable hydrogen produce within the Los Angeles Basin. Some volume of hydrogen would also be delivered to users in Southern California outside of the Los Angeles Basin and to users in Central California.

For purposes of the potential environmental impacts associated with this alternative, this study analyzes potential construction- and operational-related impacts from the following: (i) nautical miles traveled by ships from a port in Central/Northern California to the Ports of Los Angeles; (ii) underground pipeline to transport clean renewable hydrogen from production areas to a port in Central/Northern California; (iii) hydrogen-to-methanol conversion facility at a port in Central/Northern California; (iv) methanol-to-hydrogen reconversion facility at the Ports of Los Angeles; (v) regasification facility at the Ports of Los Angeles; and (vi) an underground delivery pipeline to transport the clean renewable hydrogen to end users in the Los Angeles Basin.

4.1.3 Power Transmission & Distribution

Under this alternative, renewable energy would be produced at two production locations in California and that energy would be transmitted as electrons using a new electrical transmission system for clean renewable hydrogen production within the Los Angeles Basin. For purposes of comparing the Evaluated Segment's potential environmental impacts to the power transmission and distribution alternative, this study assumes the highest estimated throughput of Angeles Link of 1.5 MMTPY of clean renewable hydrogen would be produced within the Los Angeles Basin.

The two energy production locations include production in the San Joaquin Valley and near the City of Lancaster based on the potential renewable energy resources available in those areas as identified in the separate Angeles Link Phase 1 Production Study. Electrons would be transmitted through 400 miles of new 500 kV alternating current lines generally following the conceptual Angeles Link pipeline routes from solar energy produced in the San Joaquin Valley and Lancaster. This alternative assumes all new electric transmission lines would be constructed to transport the electrons into the Los Angeles Basin for production, with no interconnection to the existing grid. This alternative also assumes four new substations and 308 transformers would be required. This alternative also assumes some liquid hydrogen would be stored within the Los Angeles Basin in a storage area that includes 610 liquid spheres over approximately 135 acres.

The clean renewable hydrogen produced in the Los Angeles Basin would be transported to end users within the Los Angeles Basin through an underground delivery pipeline estimated to be approximately 80 miles in length. The length of the delivery pipeline is based on the potential delivery pipeline within a 40-mile radius from the Ports of Los Angeles, as the ports may serve as key end users of the clean renewable hydrogen produced within the Los Angeles Basin. Some volume of hydrogen would also be delivered to users in Southern California outside of the Los Angeles Basin and to users in Central California.

For purposes of the potential environmental impacts associated with the power transmission and distribution alternative, this study analyzes potential construction- and operational-related impacts from the following: (i) hundreds of miles of new transmission lines; (ii) several new substations; (iii) several new transformers; (iv) several new circuits; (v) hundreds of aboveground lattice steel towers or tubular steel poles to support the transmission lines; and (vi) an underground delivery pipeline to transport the clean renewable hydrogen to end users in the Los Angeles Basin. This analysis does not evaluate the potential environmental impacts associated with the new solar energy supply that may be developed to provide the electrons to transmit into the Los Angeles Basin or the potential impacts associated with the in-basin production. This approach allows for a comparison of the potential impacts associated with this alternative to the potential impacts of the Evaluated Segments, which includes the Evaluated Segments and associated facilities but does not include the third-party production of clean renewable hydrogen.

4.1.4 Local Hydrogen Hub

A localized hydrogen hub would consist of a pipeline system that connects clean renewable hydrogen producers to multiple end users in the hard-to-electrify sectors within the Los Angeles Basin, including the mobility, power generation, and industrial sectors. The localized hydrogen hub within the Los Angeles Basin would be fed only by in-basin production and/or production in close proximity to multiple in-basin end users and storage. The localized hydrogen hub assumes production and distribution within a 40-mile radius expanding outward from concentrated demand near the Ports of Los Angeles. This radius was designed to encompass the Los Angeles Basin and areas surrounding multiple in-Basin end users and storage. For purposes of this alternative, the Los Angeles Basin is a geographically defined area in Southern California: a coastal plain bounded by the Pacific Ocean to the west and surrounded by mountains and hills, including the Santa Monica Mountains to the north, the San Gabriel mountains to the northeast, and the Satna Ana Mountains to the southeast. The Los Angeles Basin encompasses the central part of Los Angeles County, including portions of the San Fernando Valley, and extends into parts of Orange, Riverside and San Bernardino counties.

The clean renewable hydrogen would be produced from solar energy and biomass. Solar energy could include potential independent solar power sites, and biomass could include the utilization of woody biomass and the conversion of municipal waste. From production sites, hydrogen would be transported through approximately 80 miles of delivery pipeline within the 40-mile radius identified for the production and storage facilities. The 40-mile radius would expand outward from the area of concentrated demand near the Ports of Los Angeles. The 80 miles of transmission pipeline corresponds to the miles of delivery pipeline that would be located within the Los Angeles Basin for Angeles Link, as this mileage provides the potential transmission needs for the localized hydrogen hub to connect to well-known demand centers near the Ports of Los Angeles. The total mileage of pipeline may be greater, as land constraints may result in more distributed production facilities and additional pipeline mileage needed for transmission and distribution to meet the production, demand, and storage needs. Hydrogen reserves would be stored in aboveground storage facilities. This alternative does not evaluate potential needs for compression in the delivery pipeline, as compression needs would be speculative without more refinement of the potential localized hub.

For purposes of the potential environmental impacts associated with this alternative, potential construction and operation impacts were analyzed from approximately 80 miles of delivery pipeline to convey the clean renewable hydrogen from production sites to end users in the Los Angeles Basin. This analysis does not evaluate the potential environmental impacts associated with the local production sites through solar or biomass sources of energy. This approach allows for a comparison of the potential impacts associated with this alternative to the potential impacts of the Evaluated Segments, which includes the Evaluated Segments and associated facilities but does not include the third-party production of clean renewable hydrogen.

4.2 NON-HYDROGEN ALTERNATIVES

4.2.1 Carbon Capture and Storage

Carbon capture and storage (CCS) is an alternative decarbonization approach across several sectors and can be applied where natural gas is used today. Under this alternative, natural gas is assumed to be used at current levels, with carbon management used to capture emissions from certain facilities. For purposes of analyzing CCS as an alternative, specific end use cases where CCS could be applied were analyzed and certain system-level considerations and assumptions were incorporated to evaluate the potential high-level potential environmental impacts associated with this alternative.

Under this alternative, carbon-capture equipment would be added to capture emissions at the following end uses: (i) natural gas-fueled power generation plants; (ii) natural gas-fueled cogeneration facilities; (iii) natural gas-fueled kilns at cement production facilities; and (iv) steam methane reformers generating grey hydrogen for refineries. For the last category of end uses, refineries currently use grey hydrogen for operations such as hydrocracking and sulfur removal. The CCS alternative evaluates converting the current grey hydrogen supply to blue hydrogen (decarbonized hydrogen) with the addition of CCS to existing natural gas fueled steam methane reformers.

The emissions captured at the end-use facilities evaluated would be sequestered at the facilities or transported by pipeline to be sequestered at on off-site storage facility. The location of the geological formation suited for storage in relation to the CCS facility would dictate the location and length of the pipeline. For purposes of the high-level environmental analysis in this study, it is assumed that the end use cases that would apply the CCS technology are generally located in the larger Los Angeles Basin region and that the captured emissions would be sequestered into underground storage facilities in Kern County. A pipeline to transport the emissions would be approximately 150 to 300 miles in length, potentially crossing through Los Angeles, Orange, San Bernardino, and Kern Counties, depending on the location of the facilities implementing CCS technology and the route of the pipeline. Kern County was selected as a potential destination for the sequestration as a location in Southern California with geologic features likely suitable for carbon sequestration.

For purposes of the potential environmental impacts associated with this alternative, this study analyzes potential construction- and operational-related impacts from the following: (i) a transmission pipeline from end uses to transport captured emissions to one or more sequestration sites; and (ii) underground storage facilities to sequester the captured emissions. This analysis does not evaluate the potential environmental impacts associated with implementing the carbon capture technology on end users.

4.2.2 Electrification

The electrification alternative includes two components: (1) system-level electrification (comparing Angeles Link to the power system infrastructure that would be required if the demand served by Angeles Link were instead electrified); (2) electrification of specific

use cases (e.g., battery electric vehicles as an alternative to fuel cell electric vehicles). Both electrification components are described further in the following sections. For purposes of comparing the potential environmental impacts of Angles Link as compared to the electrification alternative in this study, the environmental analysis did not focus on comparing Angeles Link to potential impacts of specific end users and instead analyzed the potential environmental impacts associated with the electrification alternative on a system-wide basis as described in Section 4.2.2.1 System-Wide Electrification Alternative.

4.2.2.1 System-Wide Electrification Alternative

As described in the Alternatives Study, replacing the approximate volume of clean renewable hydrogen that Angeles Link proposes to convey (0.5 to 1.5 MMTPY) with electricity would add roughly 17 to 50 terawatt-hours (TWh) of demand to the California power system.[256] This amounts to roughly 8 percent to 23 percent of total 2022 electric retail sales in California. The Alternatives Study further explains that as of 2023, California had approximately 25,000 miles of electric transmission lines in service.

The Alternatives Study also states that the latest transmission infrastructure plan released by the California Independent System Operator (CAISO) includes 45 transmission projects designed to support reliability of the grid, totaling an investment of $7.3 billion by 2033. The Alternatives Study concludes these investments do not reflect the additional infrastructure that may be needed to support a higher level of electrification of the use cases Angeles Link proposes to serve.

Taking into account existing and planned electric infrastructure projects, detailed power system studies would be required to analyze the incremental infrastructure that would be required to electrify the use cases Angeles Link proposes to serve. That detailed assessment was outside of the scope of the Angeles Link Phase 1 feasibility studies. However, for purposes of the Phase 1 feasibility studies, it is assumed that high-voltage transmission lines carry less energy than hydrogen pipelines and adding roughly 17 to 50 TWh of new electric demand and several hundred gigawatts of new supply would require significant new electric transmission infrastructure to reliably serve demand.

To meet Angeles Link's underlying purpose of decarbonization, it is assumed the electrification alternative would include new energy resources drawn from wind, solar, or battery storage. The Alternatives Study concludes that other carbon-free alternatives such as nuclear, hydro, geothermal, and biomass were not forecasted to play a large role in the California power system. The new electric transmission infrastructure would likely include hundreds of miles of new transmission lines and associated infrastructure from areas of plentiful wind and solar energy production to demand centers along the coast.

[256] See separate Angeles Link Phase 1 Project Options and Alternatives Study for more information on the system-wide electrification alternative.

For purposes of the potential environmental impacts associated with this alternative, this study analyzes potential construction- and operational-related impacts from the following: (i) hundreds of miles of new transmission lines; (ii) several new substations; (iii) several new transformers; (iv) several new circuits; and (v) hundreds of aboveground lattice steel towers or tubular steel poles to support the transmission lines. This analysis does not evaluate the potential environmental impacts associated with the new wind or solar energy supply that may be developed to meet the expected demand and instead focuses on the transmission for the systemwide electrification alternative. This approach allows for a comparison of the potential impacts associated with this alternative to the potential impacts of Angeles Link, which includes the pipeline transmission system and associated facilities but does not include the third-party production of clean renewable hydrogen.

4.2.2.2 Electrification of Use Cases

For the electrification of use cases, analysis was generally conducted to understand where it may be possible for end users to electrify in lieu of using clean renewable hydrogen or traditional fuels and what changes end users might have to implement to make that change. End uses were considered based on the end uses identified in the Angeles Link Demand Study, prepared as a separate Angeles Link Phase 1 feasibility analysis. Electrification on an end-use basis as an alternative to Angeles Link was considered for the following end uses: (i) in the mobility sector, use of battery electric vehicles for long-haul, heavy-duty trucking in lieu of hydrogen fuel cell electric vehicles; (ii) in the power generation sector, use of battery energy storage facilities for peaking and reliability needs in lieu of hydrogen-fueled combustion plants; (iii) for food and beverage in the industrial sector, use of electric ovens and fryers in lieu of hydrogen-fueled ovens and fryers; and (iv) for cement production in the industrial sector, use of electric kilns in lieu of hydrogen-fueled kilns. Further discussion of the electrification alternative on an end user basis is provided in the Alternatives Study.

4.3 ALTERNATIVES COMPARISON

As presented in Chapter 3 – Environmental Analysis, some impacts associated with Angeles Link can be inferred based on similar pipeline construction projects that were constructed in Southern California in the past, but actual impacts and their magnitude cannot be determined or quantified until more detail on the design is available, particularly the exact location of the alignment and appurtenance facilities. Similarly, information on potential alternatives is limited during this feasibility stage to draw conclusions on impacts; however, some potential environmental impacts can be inferred on a qualitative basis based on similar projects and general location information, allowing for a high-level comparison of potential environmental impacts of the alternatives as compared to each other and to Angeles Link.

Table 4.3-1: High-Level Hydrogen Alternative Comparison provides a high-level comparison of Angeles Link and the identified hydrogen delivery alternatives and lists potential impacts that may occur during construction and/or operation, as appropriate, for each resource addressed in Chapter 3 – Environmental Analysis.

Table 4.3-2: High-Level Non-Hydrogen Alternative Comparison provides a high-level comparison of Angeles Link and the identified non-hydrogen delivery alternatives and lists potential impacts that may occur during construction and/or operation, as appropriate, for each resource addressed in Chapter 3 – Environmental Analysis.[257]

In future phases, it is expected that Angeles Link will undergo full environmental review pursuant to CEQA and/or NEPA, as applicable. At the time of those reviews, more thorough review of Angeles Link's environmental impacts and the potential impacts of alternatives would be completed as more details of Angeles Link and potential alternatives develop.

[257] Given that a single preferred route for Angeles Link has not yet been selected and that the preferred route configurations currently identified span multiple study areas in this study, this comparison assumes the potential impacts reflected in Study Area 1A are representative of the potential impacts of Angeles Link. This methodology was used in order to compare the potential environmental impacts of the identified alternatives with the potential impacts associated with Angeles Link.

Table 4.3-1: High-Level Hydrogen Alternative Comparison

This analysis uses applicable questions from the CEQA Guidelines Appendix G as a framework to evaluate potential impacts in selected environmental factors at a high level. Findings are preliminary and high-level and therefore 1) do not represent if an impact is significant from the CEQA/NEPA perspective nor address the magnitude of the impact; 2) do not capture all impact areas that will be evaluated in a CEQA/NEPA document; and 3) do not account for Angeles Link's or the alternatives' benefits, including those benefits from the use of the clean energy delivered by each alternative.

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
Air Quality							
Potential conflict with implementation of applicable air quality plan, net increase of any criteria pollutant or exposure of sensitive receptors to substantial pollutant concentrations during construction	• Air pollutant emissions from trucks, equipment, and dust during construction of pipeline system, including delivery pipeline • Operational emissions associated with pipelines would be limited to occasional patrol and maintenance vehicles; potential operational emissions associated with compressor stations	• No construction required at receipt; air pollutant emissions from construction of delivery pipeline at points of distribution • Operational emissions would be commensurate with miles traveled per day and would vary depending on vehicle type; operational emissions for a delivery pipeline would be limited to occasional patrol and maintenance vehicles	• Emissions from construction of liquefaction and regassification terminals and delivery pipeline at points of distribution • Operational emissions would be commensurate with miles traveled per day and would vary depending on vehicle type; operational emissions from liquefaction and regassification terminal; emissions from delivery pipeline would be limited to occasional patrol and maintenance vehicles	• Air pollutant emissions from truck and equipment required to construct the storage tanks liquefaction terminal, and regassification terminal at the respective ports (port in Northern/Central California and Ports of Los Angeles in Southern California), as well as trucks and construction equipment for a pipeline from production to the port and delivery pipeline at delivery point • Operational emissions from marine vessels, operating on low sulfur fuel, would be commensurate with nautical miles traveled per day • Operational air emissions from liquefaction and regassification facilities	• Air pollutant emissions from truck and equipment required to construct the conversion facilities at the respective ports, as well as trucks and construction equipment for a pipeline from production to the port and delivery pipeline at points of distribution • Operational emissions from marine vessels, operating on low sulfur fuel, would be commensurate with nautical miles traveled per day • Operational emissions from conversion facilities; emissions for pipelines would be limited to occasional patrol and maintenance vehicles	• Air pollutant emissions from trucks and equipment and dust during construction of transmission lines and delivery pipeline at points of distribution • Operational emissions would be limited to occasional patrol and maintenance vehicles and equipment	• Air pollutant emissions from trucks and equipment and dust during construction of pipeline • Operational emissions would be limited to occasional patrol and maintenance vehicles and equipment

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
				• Operational emissions for the pipelines would be limited to occasional patrol and maintenance vehicles			
GHG emissions that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation	• GHG emissions from trucks and equipment during construction • Operational emissions associated with pipelines would be limited to occasional patrol and maintenance vehicles; potential operational emissions associated with compressor stations	• No construction required at receipt; GHG emissions from construction of delivery pipeline at points of distribution • Operational emissions would be commensurate with miles traveled per day and would depend on vehicle type	• Emissions from construction of liquefaction and regassification terminals and delivery pipeline at points of distribution • Operational emissions from truck trips would be commensurate with miles traveled per day and would depend on vehicle type • Operational GHG emissions from liquefaction and regassification facilities	• GHG emissions from trucks and equipment during construction • Operational emissions from marine vessels, operating on diesel or marine gas fuel, would be commensurate with nautical miles traveled per day • Operational GHG emissions from liquefaction and regassification facilities • Operational emissions for the pipelines would be limited to occasional patrol and maintenance vehicles	• GHG emissions from trucks and equipment during construction • Operational emissions from marine vessels, operating on diesel or marine gas fuel, would be commensurate with nautical miles traveled per day • Operational GHG emissions from conversion facilities • Operational emissions for the pipelines would be limited to occasional patrol and maintenance vehicles	• GHG emissions from trucks and equipment during construction of transmission lines and delivery pipeline for delivery • Operational emissions would be limited to occasional patrol and maintenance vehicles and equipment	• GHG emissions from trucks and equipment during construction • Operational emissions would be limited to occasional patrol and maintenance vehicles and equipment
Biological Resources							
Direct or indirect impacts to any protected species or modification of their habitat	• Potential for direct and indirect impacts to species from clearing, grading, construction noise, and siting of underground	• No impacts to species or habitat would be anticipated from truck trips, as existing, paved roads would be used	• Potential impacts from construction of liquefaction and regassification facilities; however, construction of those facilities would be likely to occur in	• Potential impacts from construction of liquefaction and regassification facilities; however, construction of those facilities would be likely to occur in	• Potential impacts from construction of conversion facilities; however, construction of those facilities would be likely to occur in previously disturbed	• Potential for direct and indirect impacts to species from clearing, grading, and construction noise • Potential for direct operational impacts	• Potential for direct and indirect impacts to species from clearing, grading, construction noise, and siting of underground

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
	pipelines and appurtenant facilities • Operational impacts would be limited to infrequent repairs and occasional maintenance	• Limited impacts to species or habitat anticipated from construction of delivery pipeline; operational impacts to species for delivery pipeline would be limited to occasional patrol and maintenance vehicles	previously disturbed industrial areas and impacts to sensitive or special-status species terrestrial habitats would be expected to be minimal • No impacts to species or habitat would be anticipated from truck trips as existing, paved roads would be used • Limited impacts to species or habitat anticipated from operation of liquefaction and regassification facilities and delivery pipeline; operational impacts to species would be limited to occasional patrol and maintenance vehicles	previously disturbed port industrial areas and impacts to sensitive or special-status species terrestrial habitats would be expected to be minimal • Potential impacts from construction of a pipeline from production to the port and delivery pipeline at delivery point • During the operational phase, vessel ingress and egress, and transit may have direct and indirect impacts to sensitive marine species and habitats • Operational impacts for the pipelines would be limited to occasional patrol and maintenance	port industrial areas and impacts to sensitive or special-status species terrestrial habitats would be expected to be minimal • Potential impacts from construction of a pipeline from production to the port and delivery pipeline • During the operational phase, vessel ingress and egress, and transit may have direct and indirect impacts to sensitive marine species and habitats • Operational impacts for the pipelines would be limited to occasional patrol and maintenance	due to collision and electrocution of birds by transmission lines • Additional operational impacts limited to occasional repairs and maintenance	pipelines and appurtenant facilities • Operational impacts would be limited to infrequent repairs and occasional maintenance
Direct or indirect impacts to any riparian habitat, state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.), or other sensitive natural community	• Potential for temporary impacts from clearing, grading, and excavation during construction depending on routing and construction methodology • Potential for temporary impacts, but	• No impacts to habitat would be anticipated from truck trips as existing, paved roads would be used • Limited impacts to habitat anticipated from construction of delivery pipeline at delivery point; operational impacts to habitat for	• No impacts to habitat would be anticipated from truck trips as existing, paved roads would be used • Limited impacts to habitat anticipated from construction of liquefaction and regassification facilities and delivery pipeline; operational impacts to habitat would be limited to	• Potential for temporary impacts from clearing, grading, and excavation during construction depending on routing and construction methodology • Potential impacts from construction of liquefaction and regassification	• Potential for temporary impacts from clearing, grading, and excavation during construction depending on routing and construction methodology • Potential impacts from construction of energy conversion facilities; however, construction of those	• Potential for temporary impacts from clearing, grading, and excavation during construction depending on routing and construction methodology • Impacts would not be expected or would be minimal during the operational phase as work would be limited	• Potential for temporary impacts from clearing, grading, and excavation during construction depending on routing and construction methodology • Operational impacts for a pipeline would

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
	expected to be minimal during the operational phase as clearing, grading, or excavation would only be necessary for repairs	delivery pipeline would be limited to occasional patrol and maintenance vehicles	occasional patrol and maintenance vehicles	facilities; however, construction at the ports is likely to occur in previously disturbed port or industrial areas and impacts to sensitive or special-status species terrestrial habitats would be expected to be minimal • Potential impacts from construction of a pipeline from production to the port and delivery pipeline at delivery point • During the operational phase, vessel ingress and egress, and transit may have direct and indirect impacts to marine species and habitats • Operational impacts for the pipeline would be limited to occasional patrol and maintenance	facilities would likely occur in previously disturbed port or industrial areas and impacts to sensitive or special-status species terrestrial habitats would be expected to be minimal • Potential impacts from construction of a pipeline from production to the port and delivery pipeline at delivery point • During the operational phase, vessel ingress and egress, and transit may have direct and indirect impacts to marine species and habitats • Operational impacts for the pipeline would be limited to occasional patrol and maintenance	to the pole and tower sites	be limited to occasional patrol and maintenance
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	• Potential to interfere with movement during construction, particularly during excavation, but it would be limited and short-term • Pipeline would be installed below	• No impacts to wildlife movement or migration patterns from truck trips would be anticipated as existing, paved roads would be used	• No impacts to wildlife movement or migration patterns from truck trips would be anticipated as existing, paved roads would be used • Limited impacts from construction of delivery pipeline and	• Potential to interfere with movement during construction, particularly during excavation, but it would be limited and short-term • No impacts to wildlife movement or migration during	• Potential to interfere with movement during construction, particularly during excavation, but it would be limited and short-term • No impacts to wildlife movement or migration during	• Potential to interfere with movement during construction, particularly during excavation, but it would be limited and short-term • Transmission line towers and distribution pipeline	• Potential to interfere with movement during construction, particularly during excavation, but it would be limited and short-term

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
	ground, so impacts during operational phase would be limited to infrequent maintenance; potential impacts associated with appurtenant facilities	• Limited impacts from construction of delivery pipeline; operational impacts to habitat for delivery pipeline would be limited to occasional patrol and maintenance vehicles	liquefaction and regassification facility at delivery point; operational impacts would be limited to occasional patrol and maintenance	construction at the ports as all facilities are likely to be built in previously disturbed port industrial areas. • During the operational phase, vessel ingress and egress, and transit may have direct and indirect impacts to established marine species • Pipelines would be installed below ground, and the operational impacts of pipeline and liquefaction and regassification facilities would be limited to occasional patrol and maintenance	construction at the ports as all facilities are likely to be built in previously disturbed port industrial areas • Potential impacts to wildlife movement or migration during construction of pipelines, but they would be limited and short-term • During the operational phase, vessel ingress and egress, and transit may have direct and indirect impacts to established marine species • Pipelines would be installed below ground, and the operational impacts of pipeline and conversion and reconversion facilities would be limited to occasional patrol and maintenance	may impact movement or migration during the operational phase, but impacts would be limited	• Pipeline would be installed below ground, so impacts during operational phase would be limited to infrequent maintenance; potential impacts associated with appurtenant facilities
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	• Pipeline would be located underground and may conflict with some policies or land uses within an existing plan prior to or during construction • Pipeline would be located	• No impacts to an existing HCP or other wildlife protection plan would be anticipated from truck trips as existing, paved roads would be used	• No impacts to an existing HCP or other wildlife protection plan would be anticipated from truck trips as existing, paved roads would be used • Delivery pipeline would be located underground; construction of	• No impacts to an existing HCP or other wildlife protection plan would be anticipated from construction that would occur within existing port industrial areas not subject to such plans	• No impacts to an existing HCP or other wildlife protection plan would be anticipated from construction that would occur within existing port industrial areas not subject to such plans	• Lattice towers or steel poles would be required for the power lines and, depending on the location, could conflict with existing conservation plans during construction and operation phases	• Pipelines would be located underground; once in the operational phase, conflicts would be limited to infrequent maintenance; potential impacts associated with

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
	underground; once in the operational phase, conflicts with existing plans would be limited to infrequent maintenance; potential impacts associated with appurtenant facilities	• Delivery pipeline would be located underground and may conflict with some policies or land uses within an existing plan prior to or during construction • Pipeline would be located underground; once in the operational phase, conflicts with existing plans would be limited to infrequent maintenance	pipeline and liquefaction and regassification facilities may conflict with some policies or land uses within an existing plan prior to or during construction • Once in the operational phase, conflicts with existing plans would be limited to infrequent maintenance	• Pipelines would be located underground and may conflict with some policies or land uses within an existing plan prior to or during construction • Vessel transit routes could conflict with the policies for any marine sanctuaries or marine protected areas, depending on the routes • Pipelines would be located underground and the operational impacts of pipelines and liquefaction and regassification facilities would be limited to occasional patrol and maintenance	• Pipeline would be located underground and may conflict with some policies or land uses within an existing plan prior to or during construction • Vessel transit routes could conflict with the policies for any marine sanctuaries or marine protected areas, depending on the routes • Pipelines would be located underground, and the operational impacts of pipelines and conversion and reconversion facilities would be limited to occasional patrol and maintenance	• Transmission pipeline would be located underground and may conflict with some policies or land uses within an existing plan prior to or during construction • Delivery pipeline would be located underground; once in the operational phase, conflicts with existing plans would be limited to infrequent maintenance	appurtenant facilities
Cultural Resources and Tribal Cultural Resources							
Change in the significance of a historical resource	• Grading and excavation for pipeline installation could impact known and unanticipated resources • Limited potential impacts would be expected during the operational phase, as infrequent maintenance work would occur	• No substantial adverse change in a significance of a historic resource from truck trips would be expected as trucks would be traveling on existing, paved roads • Limited potential impacts from construction of delivery pipeline; operational phase for pipeline would	• No substantial adverse change in a significance of a historic resource from truck trips would be expected as trucks would be traveling on existing, paved roads • Limited potential impacts from construction of delivery pipeline, liquefaction, and regassification facilities; operational phase would not likely	• Grading and excavation for pipeline installation could impact known and unanticipated resources • Any grading and excavation for pipelines, or conversion facilities could impact known and unanticipated resources; however, this is unlikely given these facilities would be constructed	• Grading and excavation for pipeline installation could impact known and unanticipated resources • Any grading and excavation for pipelines, or conversion facilities could impact known and unanticipated resources; however, this is unlikely given these facilities would be constructed within	• Grading and foundation hole drilling for power line poles and towers could impact known and unanticipated resources • Operational phase may impact resources, but maintenance work would be infrequent and in previously disturbed areas	• Grading and excavation for facility installation could impact known and unanticipated resources • Operational phase may impact resources, but maintenance work would be infrequent and occur in

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
	in previously disturbed areas	not likely impact resources as infrequent maintenance work would occur in previously disturbed areas	impact resources as infrequent maintenance work would occur in previously disturbed areas	within previously disturbed port industrial areas • Operational phase may impact resources, but maintenance work would be infrequent and occur in previously disturbed areas	previously disturbed port industrial areas • Operational phase may impact resources, but maintenance work would be infrequent and occur in previously disturbed areas	• Limited potential impacts from construction of delivery pipeline at delivery point; operational phase for pipeline would not likely impact resources as infrequent maintenance work would occur in previously disturbed areas.	previously disturbed areas
Change in the significance of an archaeological resource	• Grading and excavation for pipeline installation could impact known and unanticipated resources • Limited potential impacts would be expected during the operational phase, as infrequent maintenance work would occur in previously disturbed areas	• No substantial adverse change in a significance of an archaeological resource from truck trips would be expected as trucks would be traveling on existing, paved roads • Limited potential impacts from construction of delivery pipeline at delivery point; operational phase for pipeline may impact resources, but maintenance work would be infrequent and in previously disturbed areas	• No substantial adverse change in a significance of an archaeological resource from truck trips would be expected as trucks would be traveling on existing, paved roads • Limited potential impacts from construction of delivery pipeline and regassification facility at delivery point; operational phase may impact resources, but maintenance work would be infrequent and in previously disturbed areas	• Grading and excavation for pipeline installation could impact known and unanticipated resources • Grading and excavation for, pipelines or liquefaction or regassification facilities could impact known and unanticipated resources; however, this is unlikely given these facilities would be constructed within previously disturbed port industrial areas • Operational phase may impact resources, but maintenance work would be infrequent and occur in	• Grading and excavation for pipeline installation could impact known and unanticipated resources • Grading and excavation for pipelines or conversion facilities could impact known and unanticipated resources; however, this is unlikely given these facilities would be constructed within previously disturbed port industrial areas • Operational phase may impact resources, but maintenance work would be infrequent and occur in previously disturbed areas	• Grading and foundation hole drilling for power line poles and towers could impact known and unanticipated resources • Operational phase of transmission line may impact resources, but maintenance work would be infrequent and occur in previously disturbed areas • Limited potential impacts from construction of delivery pipeline at delivery point; operational phase for pipeline would not likely impact resources as infrequent maintenance work would occur in	• Grading and excavation for facility installation could impact known and unanticipated resources • Operational phase may impact resources, but maintenance work would be infrequent and occur in previously disturbed areas

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
				previously disturbed areas		previously disturbed areas.	
Disturb human remains	• Grading or excavation for pipeline installation could uncover human remains • Operational phase may uncover human remains, but maintenance work would be infrequent and within previously disturbed areas	• Trucking would not require excavation, so uncovering human remains would not occur from truck trips • Limited potential impacts from construction of delivery pipeline at delivery point; operational phase for pipeline may impact resources, but maintenance work would be infrequent and in previously disturbed areas	• Trucking would not require excavation, so uncovering human remains would not occur from truck trips • Limited potential impacts from construction of delivery pipeline and regassification facility at delivery point; operational phase may impact resources, but maintenance work would be infrequent and in previously disturbed areas	• Grading and excavation for pipelines or liquefaction or regassification facilities could impact known and unanticipated resources • During the operational phase, transportation by ship and liquefaction or regassification operations would not likely uncover human remains • Operation of the pipeline may uncover human remains, but maintenance work would be infrequent and in previously disturbed areas	• Grading and excavation for pipelines or liquefaction or regassification facilities could impact known and unanticipated resources • During the operational phase, transportation by ship and conversion operations from methanol to hydrogen would not likely uncover human remains • Operation of the pipeline may uncover human remains, but maintenance work would be infrequent and in previously disturbed areas	• Grading and foundation hole drilling for power line poles and towers could uncover human remains • Operational phase may uncover human remains, but maintenance work would be infrequent and within previously disturbed areas	• Grading or excavation for facility installation could uncover human remains • Operational may uncover human remains, but maintenance work would be infrequent and within previously disturbed areas
Change in the significance of a TCR	• Clearing, grading, and excavation could impact tribal resources depending on the location • Operational phase work would occur within previously disturbed areas and occur infrequently; however, TCRs with cultural	• Trucking would be limited to existing roadways and therefore would not impact TCRs from truck trips • Limited potential impacts from construction of delivery pipeline • Operational phase for pipeline may impact resources, but maintenance	• Trucking would be limited to existing roadways and therefore would not impact TCRs from truck trips • Limited potential impacts from construction of delivery pipeline and regassification facility at delivery point • Operational phase may impact	• Clearing, grading, and excavation could impact tribal resources during pipeline installation depending on the location • Grading and excavation for pipelines or liquefaction or regassification facilities could impact known and unanticipated	• Clearing, grading, and excavation could impact tribal resources during pipeline installation depending on the location • Grading and excavation for pipelines or conversion facilities could impact known and unanticipated resources; however, this is unlikely given	• Clearing, grading, foundation hole drilling, or other ground-disturbing activities could impact tribal resources depending on the location • Operational phase work would occur within previously disturbed areas and occur infrequently; however, TCRs with cultural value, such	• Clearing, grading, and excavation could impact tribal resources depending on the location • Operational phase work would occur within previously disturbed areas and occur infrequently; however, TCRs

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
	value, such as sacred places, may be impacted if located in or near areas of work	work would be infrequent and occur in previously disturbed areas; however, TCRs with cultural value, such as sacred places, may be impacted if located in or near areas of work	resources, but maintenance work would be infrequent and occur in previously disturbed areas; however, TCRs with cultural value, such as sacred places, may be impacted if located in or near areas of work	resources; however, this is unlikely given these facilities would be constructed within previously disturbed port industrial areas • During the operational phase, transportation by ship and liquefaction or regassification to hydrogen would not cause a substantial adverse change in the significance of a tribal resource area • Operational phase work for the pipeline would occur within previously disturbed areas and occur infrequently; however, TCRs with cultural value, such as sacred places, may be impacted if located in or near areas of work	these facilities would be constructed within previously disturbed port industrial areas • During the operational phase, transportation by ship and conversion from methanol to hydrogen would not cause a substantial adverse change in the significance of a tribal resource area • Operational phase work for the pipeline would occur within previously disturbed areas; however, TCRs with cultural value, such as sacred places, may be impacted if located in or near areas of work	as sacred places, may be impacted if located in or near areas of work	with cultural value, such as sacred places, may be impacted if located in or near areas of work
Energy							
Wasteful, inefficient, or unnecessary consumption of energy resources	• Power construction equipment and vehicles would be needed for pipeline installation and require energy consumption; however, the energy use is not likely to result in	• This alternative could use diesel fuel to transport hydrogen via trucking; electric or hydrogen-fueled trucks would potentially be used over time to eliminate diesel consumption	• This alternative could use diesel fuel to transport hydrogen via trucking; electric or hydrogen-fueled trucks would potentially be used over time to eliminate diesel consumption • Power construction equipment and vehicles would be	• Power construction equipment and vehicles would be needed for pipeline installation and require energy consumption; however, the energy use is not likely to result in wasteful, inefficient, or	• Power construction equipment and vehicles would be needed for pipeline installation and require energy consumption; however, the energy use is not likely to result in wasteful, inefficient, or	• Power construction equipment and vehicles would be needed for transmission line installation and require energy consumption; however, the energy use is not likely to result in wasteful, inefficient, or	• Power construction equipment and vehicles would be needed for installation and require energy consumption; however, the energy use is not likely to result in wasteful,

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
	wasteful, inefficient, or unnecessary consumption • The pipeline would require periodic testing and maintenance that would result in limited energy consumption • Potential energy impacts associated with operation of compressor stations	• Power construction equipment and vehicles would be needed for pipeline installation and require energy consumption; however, the energy use is not likely to result in wasteful, inefficient, or unnecessary consumption	needed for pipeline installation and require energy consumption; however, the energy use is not likely to result in wasteful, inefficient, or unnecessary consumption • The operation of the conversion facilities may require large amounts of energy	unnecessary consumption • The pipelines would require periodic testing and maintenance that would result in limited energy consumption • Shipping between the ports may require large amount of fuel during the operational phase and may have a significant amount of energy consumption • The operation of the conversion facilities may require large amounts of energy	unnecessary consumption • The pipelines would require periodic testing and maintenance that would result in limited energy consumption • Shipping between the ports may require large amount of fuel during the operational phase and may have a significant amount of energy consumption • The operation of the conversion facilities may require large amounts of energy	unnecessary consumption • The system would require periodic testing and maintenance that would result in limited energy consumption	inefficient, or unnecessary consumption • The system would require periodic testing and maintenance that would result in limited energy consumption
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	• The siting and construction of pipelines may conflict with or obstruct some existing (e.g., existing PV solar or wind facilities) or planned renewable energy projects	• This alternative could conflict with state and local renewable energy or energy efficiency goals if diesel trucks are used; diesel trucks would be phased out over time	• This alternative could conflict with state and local renewable energy or energy efficiency goals if diesel trucks are used; diesel trucks would also be phased out over time	• The siting and construction of pipelines may conflict with or obstruct some existing (e.g., existing PV solar or wind facilities) or planned renewable energy projects or local land uses or zoning • This alternative could conflict with state or local plans for renewable energy as it would use transport methods (shipping) that still use fossil fuels	• The siting and construction of pipelines may conflict with or obstruct some existing (e.g., existing PV solar or wind facilities) or planned renewable energy projects or local land uses or zoning • This alternative could conflict with state or local plans for renewable energy as it would use transport methods (shipping) that still use fossil fuels and would not support zero-carbon emissions goals	• The siting and construction of pipelines may conflict with or obstruct some existing (e.g., existing PV solar or wind facilities) or planned renewable energy projects	• The siting and construction of pipelines may conflict with or obstruct some existing (e.g., existing PV solar or wind facilities) or planned renewable energy projects

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
Hazards and Hazardous Materials							
Hazardous Materials Transport, Use, or Disposal	• Construction would require the use of hazardous materials associated with operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater • Operational phase would require infrequent maintenance activities, which could also release hazardous materials • Hydrogen gas is flammable and could be considered a hazardous material, which would be transported via the pipeline	• Construction of delivery pipeline would require the use of hazardous materials associated with operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater • Operational phase would require infrequent maintenance activities, which could also release hazardous materials • Trucking would involve the transport of gaseous hydrogen, which would be considered a hazardous material	• Construction of delivery pipeline and regassification facility would require the use of hazardous materials associated with operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater • Operational phase would require infrequent maintenance activities, which could also release hazardous materials • Trucking would involve the transport of liquid hydrogen, which would be considered a hazardous material	• Construction would require the use of hazardous materials associated with operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater • Transportation by ship/vessel would involve the shipping of liquid hydrogen, which would be considered a hazardous material; gaseous hydrogen would also be transported by delivery pipeline	• Construction would require the use of hazardous materials associated with operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater • Transportation by ship/vessel would involve the shipping of liquid methanol, which would be considered a hazardous material • Delivery pipeline would transport gaseous hydrogen, which could be considered a hazardous material	• Construction would require the use of hazardous materials associated with operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater • Operational phase would require infrequent maintenance activities, which could also release hazardous materials	• Construction would require the use of hazardous materials associated with operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater • Operational phase would require infrequent maintenance activities, which could also release hazardous materials • Hydrogen gas is flammable and could be considered a hazardous material, which would be transported via the pipeline
Reasonably Foreseeable Upset and Accident Conditions	• Construction would require use of hazardous materials and may result in	• Trucks transporting gaseous hydrogen can be involved in vehicular collisions resulting in upsets	• Trucks transporting liquid hydrogen can be involved in vehicular collisions resulting in upsets	• Construction of the pipelines and conversion facilities would require use of hazardous materials and may result in	• Construction of the pipelines and conversion facilities would require use of hazardous materials and may result in	• Construction would require use of hazardous materials and may result in	• Construction would require use of hazardous materials and may result in

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
	upset or accident conditions • Transporting hydrogen gas through pipelines during the operational phase has an inherent risk of upset; pipelines would be below ground and designed to reduce risk	• Inclement weather, traffic, or human error can cause trucking accidents • Construction of delivery pipeline would require use of hazardous materials and may result in upset or accident conditions • Transporting hydrogen gas through pipeline during the operational phase has an inherent risk of upset; however, pipelines would be below ground and designed to reduce risk	• Inclement weather, traffic, or human error can cause trucking accidents • Construction of delivery pipeline and regassification facility would require use of hazardous materials and may result in upset or accident conditions • Transporting hydrogen gas through pipeline during the operational phase has an inherent risk of upset; however, pipelines would be below ground and designed to reduce risk	upset or accident conditions • Ships/vessels transporting liquid hydrogen can be involved in vessel collisions, resulting in upsets and accident conditions • Inclement weather, traffic, or human error can cause vessel accidents • Transporting hydrogen gas through pipelines during the operational phase has an inherent risk of upset; however, pipelines would be below ground and designed to reduce risk	upset or accident conditions • Ships/vessels transporting liquid methanol can be involved in vessel collisions, resulting in upsets and accident conditions • Inclement weather, traffic, or human error can cause vessel accidents • Transporting hydrogen gas through pipelines during the operational phase has an inherent risk of upset; however, pipelines would be below ground and designed to reduce risk	upset or accident conditions • The risk of upset for electrical transmission lines is limited; however, it could happen at substations that use oil-filled/-cooled transforms; however, substation equipment could be designed for on-site containment to reduce this risk	upset or accident conditions • Transporting hydrogen gas through pipelines and other facilities have an inherent risk of upset; however, pipelines would be below ground and designed to reduce risk
Hazardous Substances in Close Proximity in Schools	• The pipelines could be located in close proximity to schools, but efforts could be made to avoid schools	• Depending on where trucks would need to travel, truck routes could pass schools and therefore carry gaseous hydrogen in close proximity to schools • The delivery pipeline could be located in close proximity to schools, but efforts could be made to avoid schools	• Depending on where trucks would need to travel, truck routes could pass schools and therefore carry liquid hydrogen in close proximity to schools • The delivery pipeline and regassification facility could be located in close proximity to schools, but efforts could be made to avoid schools	• The pipelines could be located in close proximity to schools, but efforts would be made to avoid schools • The liquefaction and regassification facilities and ships/vessels would be located at specific sites/berths at a port in Northern/Central California or the Ports of Los Angeles, neither of	• The pipelines could be located in close proximity to schools, but efforts would be made to avoid schools • The conversion facilities (methanol to hydrogen) and ships/vessels would be located at specific sites/berths at a port in Northern/Central California or the Ports of Los Angeles, neither of which is in close proximity to schools	• The transmission lines and delivery pipeline could be located in close proximity to schools, but efforts would be made to avoid schools • Once constructed, the power transmission and distribution lines would not involve the routine use or storage of hazardous materials and therefore would not locate hazardous	• The pipelines could be located in close proximity to schools, but efforts could be made to avoid schools

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
				which is in close proximity to schools		substances in close proximity to schools	
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	• The pipelines could cross existing hazardous materials sites and may have an impact during construction	• The delivery pipeline could cross existing hazardous materials sites and may have an impact during construction • Trucks would use existing roads and therefore would not be affected by existing hazardous materials sites	• The delivery pipeline and regassification facility could cross existing hazardous materials sites and may have an impact during construction • Trucks would use existing roads and therefore would not be affected by existing hazardous materials sites	• The pipelines could cross existing hazardous materials sites and may have an impact during construction • The conversion facilities would be located at a port and existing hazardous materials sites are likely to be present	• The pipelines could cross existing hazardous materials sites and may have an impact during construction • The conversion facilities would be located at a port and existing hazardous materials sites are likely to be present	• The transmission lines and delivery pipeline could cross existing hazardous materials sites and may have an impact during construction	• The pipeline could cross existing hazardous materials sites and may have an impact during construction
Public Airport and/or Private Airstrip Hazards	• Pipeline construction would not likely interfere with airports as the equipment used is generally too low to conflict with aviation services • During the operational phase, the pipelines would be underground and not impact aviation	• Delivery pipeline construction would not likely interfere with airports as the equipment used is generally too low to conflict with aviation services • Trucks would use existing roads and would not be expected to introduce a new hazard for airports • During the operational phase, the delivery pipeline would be underground and not impact aviation	• Delivery pipeline and liquefaction and regassification facility construction would not likely interfere with airports as the equipment used is generally too low to conflict with aviation services • Trucks would use existing roads and would not be expected to introduce a new hazard for airports • Operation of delivery pipeline and liquefaction and regassification facility not expected to impact aviation	• The pipeline and conversion facilities and the shipping vessels are not likely to occur adjacent to or near any airports or interfere with airport operations • Operation of delivery pipeline and conversion facilities not expected to impact aviation	• The pipeline and conversion facilities and the shipping vessels are not likely to occur adjacent to or near any airports or interfere with airport operations • Operation of delivery pipeline and conversion facilities not expected to impact aviation	• Construction of the towers and poles could impact airport operations if the poles are located near runways, but they could be designed to avoid conflicts • Delivery pipeline construction would not likely interfere with airports as the equipment used is generally too low to conflict with aviation services • During the operational phase, impacts to aviation may not be expected with marker balls and/or lights on conductors and/or transmission structures	• Pipeline construction would not likely interfere with airports as the equipment used is generally too low to conflict with aviation services • During the operational phase, the pipelines would be underground and would not impact aviation

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
Emergency Evacuation and Response Plan Interference	• Pipeline construction could obstruct an evacuation and response plan, but generally equipment can be moved and coordination with emergency responders can occur prior to construction so that no impacts would occur • The pipelines would be installed underground; interference with evacuation and response plans would not be expected during the operational phase	• Delivery pipeline construction could obstruct an evacuation and response plan, but generally equipment can be moved and coordination with emergency responders can occur prior to construction so that no impacts would occur • The pipeline would be installed underground; interference with evacuation and response plans would not be expected during the operational phase • Trucks would use existing roads and would not be expected to interfere with an evacuation and response plan	• Delivery pipeline and liquefaction and regassification facility construction could obstruct an evacuation and response plan, but generally equipment can be moved and coordination with emergency responders can occur prior to construction so that no impacts would occur • The pipeline would be installed underground; interference with evacuation and response plans would not be expected during the operational phase • Trucks would use existing roads and would not be expected to interfere with an evacuation and response plan • Operation of delivery pipeline and liquefaction and regassification facilities not expected to impact evacuation or emergency response	• Pipeline construction could obstruct an evacuation and response plan, but generally equipment can be moved and coordination with emergency responders can occur prior to construction so that no impacts would occur • Pipeline, or conversion facility construction could obstruct evacuation and response plans at a Northern/Central California port or Ports of Los Angeles, but generally equipment can be moved and coordination with emergency responders can occur prior to construction • Any vessels and conversion operations would be required to comply with the safety and security plans at the Northern/Central California port or Ports of Los Angeles • The delivery pipeline would be installed underground;	• Pipeline construction could obstruct an evacuation and response plan, but generally equipment can be moved and coordination with emergency responders can occur prior to construction so that no impacts would occur • Pipeline, or conversion facility construction could obstruct evacuation and response plans at the Northern/Central California port or Ports of Los Angeles, but generally equipment can be moved and coordination with emergency responders can occur prior to construction • Any vessels and conversion operations would be required to comply with the safety and security plans at the Northern/Central California port and/or Ports of Los Angeles • The delivery pipeline would be installed underground;	• Construction of transmission line and delivery pipeline could obstruct an evacuation and response plan, but generally equipment can be moved and coordination with emergency responders can occur prior to construction • The delivery pipeline would be installed underground; interference with evacuation and response plans would not be expected during the operational phase • Power lines would span roads and other evacuation routes and would not be expected to interfere with an evacuation and response plan during the operational phase	• Pipeline construction could obstruct an evacuation and response plan, but generally equipment can be moved and coordination with emergency responders can occur prior to construction • The pipelines would be installed underground; interference with evacuation and response plans would not be expected during the operational phase

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
				interference with evacuation and response plans would not be expected during the operational phase	interference with evacuation and response plans would not be expected during the operational phase		
Wildland Fires	• During construction, welding or other activities could spark a wildland fire • During the operational phase, the pipeline would be underground and within previously disturbed areas and would have a low risk for starting a wildland fire	• During construction of delivery pipeline, welding or other activities could spark a wildland fire • During the operational phase, the pipeline would be underground and within a previously disturbed area and would have a low risk for starting a wildland fire • Trucking could result in a wildfire if brush adjacent to roadways was ignited as the result of an accident, but this is unlikely to occur from truck trips	• During construction of delivery pipeline and liquefaction and regassification facilities, welding or other activities could spark a wildland fire • During the operational phase, the pipeline would be underground and within a previously disturbed area and would have a low risk for starting a wildland fire • Trucking could result in a wildfire if brush adjacent to roadways was ignited as the result of an accident, but this is unlikely to occur from truck trips • Operation of liquefaction and regassification facilities not expected to start a wildland fire	• During construction, pipeline welding or other activities could spark a wildland fire • No impact is anticipated at the ports as all construction and operations would occur within the port industrial areas where wildland areas are not present • During the operational phase, the delivery pipeline would be underground and within a previously disturbed area and would have a low risk for starting a wildland fire	• During construction, pipeline welding or other activities could spark a wildland fire • No impact is anticipated at the ports as all construction and operations would occur within the port industrial areas where wildland areas are not present • During the operational phase, the delivery pipeline would be underground and within a previously disturbed area and would have a low risk for starting a wildland fire	• During construction, welding and other activities could spark a wildland fire • During the operational phase, the delivery pipeline would be underground and within a previously disturbed area and would have a low risk for starting a wildland fire • During the operational phase, downed conductors, tree or avian strikes, or damaged transforms could start wildland fires	• During construction, welding or other activities could spark a wildland fire • During the operational phase, the pipeline would be underground and within previously disturbed areas and would have a low risk for starting a wildland fire
Hydrology and Water Quality							
Water Quality Degradation	• Construction could cause short-term water quality impacts from stormwater runoff from exposed soils and	• Construction of delivery pipeline could cause short-term water quality impacts from stormwater runoff from exposed soils	• Construction of delivery pipeline could cause short-term water quality impacts from stormwater runoff from exposed	• Construction could cause short-term water quality impacts from stormwater runoff from exposed soils	• Construction could cause short-term water quality impacts from stormwater runoff from exposed soils and	• Construction could cause short-term water quality impacts from stormwater runoff from exposed soils and	• Construction could cause short-term water quality impacts from stormwater runoff from exposed soils

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
	construction materials • Construction could expose soils and subject them to erosion • Operational phase water quality impacts could occur, but the pipelines would be underground, the surface would be stabilized, and repair and maintenance would be infrequent and limited in size and scope • During the operational phase, soils would be stabilized and potential impacts causing erosion would be expected to be minimal	and construction materials • During construction of delivery pipeline, exposed soils would be subject to erosion • During the operational phase of delivery pipeline, soils would be stabilized and erosion would be expected to be minimal • Operational phase water quality impacts could occur, but the pipeline would be underground, the surface would be stabilized, and repair and maintenance would be infrequent and limited in size and scope • Trucking would use existing roads and would not be expected to impact water quality from truck trips • Trucking would use existing roads and would not cause erosion from truck trips	soils and construction materials • During construction of delivery pipeline, exposed soils would be subject to erosion • During the operational phase of delivery pipeline, soils would be stabilized and erosion would be expected to be minimal • Operational phase water quality impacts could occur, but the pipeline would be underground, the surface would be stabilized, and repair and maintenance would be infrequent and limited in size and scope • Trucking would use existing roads and would not be expected to impact water quality from truck trips • Trucking would use existing roads and would not cause erosion from truck trips	and construction materials • During the operational phase, potential impacts would include contamination of surface waters through any leakage or spills from loading equipment or ships/vessels transporting liquid hydrogen • Operational phase water quality impacts could occur, but the pipelines would be underground, the surface would be stabilized, and repair and maintenance would be infrequent and limited in size and scope • During the operational phase, soils would be stabilized and erosion would be expected to be minimal • Vessel transport would be located within open waters and not anticipated to impact erosion	construction materials • During the operational phase, potential impacts would include contamination of surface waters through any leakage or spills from loading equipment or ships/vessels transporting liquid hydrogen • Operational phase water quality impacts could occur, but the pipelines would be underground, the surface would be stabilized, and repair and maintenance would be infrequent and limited in size and scope • During the operational phase, soils would be stabilized and erosion would be expected to be minimal • Vessel transport would be located within open waters and not anticipated to impact erosion	construction materials • Operational phase water quality impacts could occur, but the delivery pipeline would be underground, the surface would be stabilized, and repair and maintenance would be infrequent and limited in size and scope • During the operational phase, limited soil disturbance would occur and soils would be stabilized; thus, erosion would be expected to be minimal	and construction materials • Operational phase water quality impacts could occur, but the pipelines would be underground, the surface would be stabilized, and repair and maintenance would be infrequent and limited in size and scope • During the operational phase, limited soil disturbance would occur and soils would be stabilized; thus, erosion would be expected to be minimal
Groundwater Supply Decrease or	• Water use during construction	• Water use during construction of delivery pipeline	• Water use during construction of delivery pipeline and	• Water use during construction would	• Water use during construction would	• Water use during construction would	• Water use during construction

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
Recharge Interference	would be limited and short-term • Impervious surfaces would not be added, so groundwater recharge would not be impacted • The operational phase may use water (e.g., for compression needs, hydrotesting of pipelines), but potential impacts from water usage would not be expected to adversely affect groundwater	would be limited and short-term • Impervious surfaces would not be added, so groundwater recharge would not be impacted • The operational phase of the delivery pipeline may use water, but water usage is not expected to impact groundwater Trucking would use existing roads and would not impact groundwater as none would be required for truck trips	liquefaction and regassification facilities would be limited and short-term • Impervious surfaces would not be added, so groundwater recharge would not be impacted • The operational phase of the delivery pipeline and liquefaction and regasification facilities may use water, but water usage is not expected to impact groundwater Trucking would use existing roads and would not impact groundwater as none would be required for truck trips	be limited and short-term • Impervious surfaces would be negligible but would result from conversion facility pads, or other aboveground features; however, because the impervious surface increase would be minor, groundwater recharge would not be impacted • The operational phase may use water, but water usage is not expected to impact groundwater	be limited and short-term • Impervious surfaces would be negligible but would result from conversion facility pads, or other aboveground features; however, because the impervious surface increase would be minor, groundwater recharge would not be impacted • The operational phase may use water, but water usage is not expected to impact groundwater	be limited and short-term • Impervious surfaces would likely be small or inconsequential, so groundwater recharge would not be impacted • The operational phase would not impact groundwater as none would be required for operations	would be limited and short-term • Impervious surfaces would not be added for the pipeline; groundwater recharge would not be expected to be impacted • The operational phase may use water (e.g., for compression needs, hydrotesting of pipelines), but potential impacts from water usage would not be expected to adversely affect groundwater
Location within flood hazard zones	• The pipelines would be installed below the ground surface and may result in potential impacts, but they could be designed to cross floodplains, as needed, without causing risk to life or property	• The delivery pipeline would be installed below the ground surface and may result in potential impacts, but it could be designed to cross floodplains, as needed, without causing risk to life or property • Trucking would use existing roads and would not be impacted by floodplains from truck trips	• Delivery pipeline underground and liquefaction and regassification facilities may result in potential impacts, but they could be designed to cross floodplains, as needed, without causing risk to life or property • Trucking would use existing roads and would not be impacted by floodplains from truck trips	• The pipelines and conversion facilities would be installed in coastal areas at the ports and likely occur within the FEMA 100-year floodplain; however, these facilities would be required to be constructed in a manner that is resilient to sea level rise and climate change • Inland pipelines would be installed below the ground surface and may	• The pipelines and conversion facilities would be installed in coastal areas at the ports and likely occur within the FEMA 100-year floodplain; however, these facilities would be required to be constructed in a manner that is resilient to sea level rise and climate change • Inland pipelines would be installed below the ground surface and may	• Electrical transmission towers and poles could be constructed across floodplains, as needed, without causing risk to life or property • The delivery pipelines would be installed below the ground surface and may result in potential impacts, but they could be designed to cross floodplains, as needed, without	• The pipelines would be installed below the ground surface and could be designed to cross floodplains, as needed, without causing risk to life or property

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
				result in potential impacts, but they could be designed to cross floodplains, as needed, without causing risk to life or property	result in potential impacts, but they could be designed to cross floodplains, as needed, without causing risk to life or property	causing risk to life or property	
Land Use							
Divide a community	• The pipeline would be underground and would not divide a community	• Delivery pipeline would be underground and would not divide a community • Trucks would use existing roads and would not divide a community	• The pipeline would be underground and would not divide a community; liquefaction and regassification facilities not expected to divide a community • Trucks would use existing roads and would not divide a community	• The pipeline would be underground and would not divide a community • No impact from construction of facilities at the ports as these would all be constructed within an existing port land use area and would not divide a community	• The pipeline would be underground and would not divide a community • No impact from construction of the facilities at the ports as these would all be constructed within an existing port land use area and would not divide a community	• The power lines would add new aboveground structures that could divide communities • The delivery pipeline would be underground and would not divide a community	• The pipeline would be underground and would not divide a community
Conflict with an existing plan, policy, or regulation	• Depending on the pipeline routes, it is possible that the alignment crosses land uses that have existing plans that may conflict with the construction and operation of pipelines	• Depending on the delivery pipeline route, it is possible that the alignment crosses land uses that have existing plans that may conflict with the construction of pipelines • If the trucks used to transport hydrogen are diesel-powered, it could conflict with an existing local, state, or federal plan or policy to reduce emissions; trucks are expected	• Depending on the delivery pipeline route, it is possible that the alignment crosses land uses that have existing plans that may conflict with the construction of pipelines • Impacts from construction and operation of liquefaction and regassification facilities not expected as they will likely be constructed consistent with existing plans, policies, or regulations	• Depending on the pipeline routes, it is possible that the alignment crosses land uses that have existing plans that may conflict with the construction of pipelines • No impact from the facilities at the ports as these facilities would all be constructed within an existing port land use area and be required to comply with all applicable port plans	• Depending on the pipeline routes, it is possible that the alignment crosses land uses that have existing plans that may conflict with the construction of pipelines • No impact from the facilities at the ports as these facilities would all be constructed within an existing port land use area and be required to comply with all applicable port plans	• Depending on the routes for the power lines, it is possible that the alignment crosses land that precludes the operation of an electrical transmission line • Depending on the delivery pipeline route, it is possible that the alignment crosses land uses that have existing plans that may conflict with the construction and operation of pipelines	• Depending on the pipeline routes, it is possible that the alignment crosses land uses that have existing plans that may conflict with the construction of pipelines

Impact Criterion	Angeles Link	Trucking		Shipping		Power Transmission & Distribution	Local Hydrogen Hub
		Gaseous Hydrogen	Liquid Hydrogen	Liquid Hydrogen	Methanol		
		to transition to zero emissions over time	• If the trucks used to transport hydrogen are diesel-powered, it could conflict with an existing local, state, or federal plan or policy to reduce emissions; trucks are expected to transition to zero emissions over time				

Table 4.3-2: High-Level Non-Hydrogen Alternative Comparison

Findings are preliminary and high-level and therefore 1) do not represent if an impact is significant from the CEQA/NEPA perspective nor address the magnitude of the impact; 2) do not capture all impact areas that will be evaluated in a CEQA/NEPA document; and 3) do not account for the project's or alternatives' benefits, including those benefits from the use of the clean energy delivered by each alternative/option.

Impact Criterion	Angeles Link	CCS	Electrification
Air Quality			
Potential conflict with implementation of applicable air quality plan, net increase of any criteria pollutant or exposure of sensitive receptors to substantial pollutant concentrations during construction	• Air pollutant emissions from trucks and equipment and dust during construction of pipeline system, including delivery pipeline • Operational emissions associated with pipelines would be limited to occasional patrol and maintenance vehicles; potential operational emissions associated with compressor stations.	• Air pollutant emissions from trucks and equipment and dust during construction • Operational emissions would be limited to occasional patrol and maintenance vehicles	• Air pollutant emissions from trucks and equipment and dust during construction • Operational emissions would be limited to occasional patrol vehicles
GHG emissions that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation	• GHG emissions from trucks and equipment during construction • Operational emissions associated with pipelines would be limited to occasional patrol and maintenance vehicles; potential operational emissions associated with compressor stations	• GHG emissions from trucks and equipment during construction • Operational emissions would be limited to occasional patrol and maintenance vehicles	• GHG emissions from trucks and equipment during construction • Operational emissions would be limited to occasional patrol vehicles and equipment
Biological Resources			
Direct or indirect impacts to any protected species or modification of their habitat	• Potential for direct and indirect impacts to species from clearing, grading, construction noise and siting of underground pipeline and appurtenant facilities • Operational impacts would be limited to infrequent repairs and occasional maintenance	• Potential for direct and indirect impacts to species from clearing, grading, construction noise and siting of underground pipeline and appurtenant facilities • Operational impacts would be limited to infrequent repairs and occasional maintenance	• Potential for direct and indirect impacts to species from clearing, grading, and construction noise • Potential for direct operational impacts due to collision and electrocution of birds by transmission lines • Operational impacts would be limited to infrequent repairs and occasional maintenance
Direct or indirect impacts to any riparian habitat, state or federally protected wetlands (including, but not limited to, marsh vernal pool, coastal, etc.), or other sensitive natural community	• Potential for temporary impacts from clearing, grading, and excavation during construction depending on routing and construction methodology • Potential for temporary impacts, but expected to be minimal during the operational phase as clearing, grading, or excavation would only be necessary for repairs	• Potential for temporary and possibly permanent impacts from clearing, grading, and excavation during construction depending on location of pipeline route to storage location • Operational impacts would be limited to infrequent repairs and occasional maintenance	• Potential for temporary impacts from clearing and grading during construction depending on routing and whether sensitive resources can be spanned • Impacts would not be expected or would be minimal during the operational phase as work would be limited to the pole and tower sites

Impact Criterion	Angeles Link	CCS	Electrification
Interfere with movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors	• Potential to interfere with movement during construction, particularly during excavation, but it would be limited and short-term • Pipeline would be installed below ground, so impacts during operational phase would be limited to infrequent maintenance; potential impacts associated with appurtenant facilities	• Potential to interfere with movement during construction, particularly during excavation • Aboveground facilities would likely already be established and the pipelines would be below ground; thus, impacts to wildlife movement are unlikely, but they could occur during the operational phase if large areas were required to be fenced	• Potential to interfere with movement during construction due to the presence of construction equipment and noise, but it would be limited and short-term • Transmission line towers would not be expected to limit movement or migration during the operational phase
Conflict with the provisions of an adopted HCP; NCCP; or other approved local, regional, state, or federal conservation plans	• Pipeline would be located underground and may conflict with some policies or land uses within an existing plan prior to or during construction • Pipeline would be located underground; once in the operational phase, conflicts with existing plans would be limited to infrequent maintenance; potential impacts associated with appurtenant facilities	• Pipelines associated with the CCS would be located underground, but aboveground facilities may be needed for injection to underground storage • Conflicts with existing plans is possible, depending on the location of the facilities • Conflicts with existing conservation plans would be contingent on the location of the pipeline and appurtenances and storage facilities	• Lattice towers or steel poles would be required for the power lines and, depending on the location, could conflict with existing conservation plans during construction and operation phases
Cultural Resources and Tribal Cultural Resources			
Change in the significance of a historical resource	• Grading and excavation for pipeline installation could impact known and unanticipated resources • Limited potential impacts would be expected during the operational phase, as infrequent maintenance work would occur in previously disturbed areas	• Grading and excavation for pipeline installation could impact known and unanticipated resources • Operational phase may impact resources, but O&M work would be infrequent and occur in previously disturbed areas	• Grading and foundation hole drilling for power line poles and towers could impact known and unanticipated resources • Operational phase may impact resources, but maintenance work would be infrequent and occur in previously disturbed areas
Change in the significance of an archaeological resource	• Grading and excavation for pipeline installation could impact known and unanticipated resources • Limited potential impacts would be expected during the operational phase, as infrequent maintenance work would occur in previously disturbed areas	• Grading and excavation for pipeline installation could impact known and unanticipated resources • Operational phase may impact resources, but O&M work would be infrequent and occur in previously disturbed areas	• Grading and foundation hole drilling for power line poles and towers could impact known and unanticipated resources • Operational phase may impact resources, but maintenance work would be infrequent and occur in previously disturbed areas
Disturb human remains	• Grading or excavation for pipeline installation could uncover human remains • Operational phase may uncover human remains, but maintenance work would be infrequent and within previously disturbed areas	• Grading or excavation for pipeline installation could uncover human remains • Operational phase may uncover human remains, but O&M work would be infrequent and within previously disturbed areas	• Grading and foundation hole drilling for power line poles and towers could uncover human remains • Operational phase may uncover human remains, but maintenance work would be infrequent and ground disturbance would be limited to repairs and within previously disturbed areas
Change in the significance of a TCR	• Clearing, grading, and excavation could impact tribal resources depending on the location • Operational phase work would occur within previously disturbed areas and occur infrequently;	• Clearing, grading, excavation, or other ground-disturbing activities could impact tribal resources depending on the location	• Clearing, grading, foundation hole drilling, or other ground-disturbing activities could impact tribal resources depending on the location

Impact Criterion	Angeles Link	CCS	Electrification
	however, TCRs with cultural value, such as sacred places, may be impacted if located in or near areas of work	• Operational phase would not likely impact tribal resources as work would occur within previously disturbed areas for maintenance work; however, daily activities at injection sites could adversely affect tribal areas	• The presence of towers and poles could adversely affect tribal areas by changing views and landscapes • Operational phase could impact tribal resources, but maintenance work would occur within previously disturbed areas and would occur infrequently
Energy			
Wasteful, inefficient, or unnecessary consumption of energy resources	• Power construction equipment and vehicles would be needed for pipeline installation and require energy consumption; however, the energy use is not likely to result in wasteful, inefficient, or unnecessary consumption • The pipeline would require periodic testing and maintenance that would result in limited energy consumption • Potential energy impacts associated with operation of compressor stations	• Power construction equipment and vehicles would be needed for pipeline installation and require energy consumption; however, the energy use is not likely to result in wasteful, inefficient, or unnecessary consumption • The pipeline would require periodic testing and maintenance that would result in limited energy consumption • CCUS would involve sequestering emissions from existing industrial sources and is not anticipated to substantially change the current consumption of energy resources	• Power construction equipment and vehicles would be needed for transmission line installation and require energy consumption; however, the energy use is not likely to result in wasteful, inefficient, or unnecessary consumption • The system would require periodic testing and maintenance that would result in limited energy consumption • This alternative would have a beneficial impact as it would reduce the consumption of natural gas and introduce a new energy source
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	• The siting and construction of the hydrogen pipeline may conflict with or obstruct some existing (e.g., existing PV solar or wind facilities) or planned renewable energy projects	• The siting and construction of the pipeline, appurtenant facilities, and storage facilities may conflict with or obstruct some existing (e.g., existing PV solar or wind facilities) or planned renewable energy projects	• The siting and construction of new electric lines may conflict with or obstruct some existing (e.g., existing PV solar or wind facilities) or planned renewable energy projects
Hazards and Hazardous Materials			
Hazardous Materials Transport, Use, or Disposal	• Construction would require the use of hazardous materials associated with operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater • Operational phase would require infrequent maintenance activities, which could also release hazardous materials • Hydrogen gas is flammable and could be considered a hazardous material, which would be transported via the pipeline	• Construction would require the use of hazardous materials associated with operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater • Transporting CO_2 gas through pipelines during the operational phase has an inherent risk of upset; however, pipeline would be below ground and designed to reduce risk • Operational phase would involve the storage of large volumes of CO_2 gas underground and potential impacts to the public or the environment could occur during a leak or release from the underground storage area	• Construction would require the use of hazardous materials associated with operating equipment, such as gasoline, diesel, hydraulic fluid, paints, and solvents, which could be inadvertently released and contaminate soil and groundwater • Operational phase would require infrequent maintenance activities, which could also release hazardous materials

Impact Criterion	Angeles Link	CCS	Electrification
Reasonably Foreseeable Upset and Accident Conditions	• Construction would require use of hazardous materials and may result in upset or accident conditions • Transporting hydrogen gas through pipelines during the operational phase has an inherent risk of upset; pipelines would be below ground and designed to reduce risk	• Construction would require use of hazardous materials and may result in upset or accident conditions • Transporting CO_2 gas through pipelines during the operational phase has a risk of upset; however, because it is below ground and designed to reduce this risk, it is less likely to occur • Operational phase would involve the storage of large volumes of CO_2 gas underground and potential impacts to the public or the environment could occur during a leak or release from the underground storage area	• The risk of upset for electrical transmission lines is limited; however, it could happen at substations that use oil-filled/-cooled transforms (Substation equipment may be designed for on-site containment to reduce this risk)
Hazardous Substances in Close Proximity in Schools	• The pipelines could be located in close proximity to schools, but efforts could be made to avoid schools	• The pipeline could be located in close proximity to schools, but efforts could be made to avoid schools • The carbon capture sites would likely be existing depleted oil and gas fields and are not likely near schools	• The transmission lines could be located in close proximity to schools, but efforts could be made to avoid schools • Once constructed, the power line would not involve the routine use or storage of hazardous materials and therefore would not locate hazardous substances in close proximity to schools
Existing Hazardous Materials Sites Listed in Government Code Section 65962.5	• The pipelines could cross existing hazardous materials sites and may have an impact during construction	• The pipelines could cross existing hazardous materials sites	• The transmission lines could cross existing hazardous materials sites and may have an impact during construction
Public Airport and/or Private Airstrip Hazards	• Pipeline construction would not likely interfere with airports as the equipment used is generally too low to conflict with aviation services • During the operational phase, the pipelines would be underground and not impact aviation	• Pipeline construction would not likely interfere with airports or airstrips as the equipment used is generally too low to conflict with aviation services • During the operational phase, the pipelines would be underground and not impact aviation • Facilities would be likely be in developed areas and unlikely to impact airports or airstrips	• Construction of the towers and poles could impact airport operations if the poles are located near runways, but typically can be designed to avoid conflicts • During the operational phase, impacts to aviation may not be expected with marker balls and/or lights installed on conductors
Emergency Evacuation and Response Plan Interference	• Pipeline construction could obstruct an evacuation and response plan, but generally equipment can be moved and coordination with emergency responders can occur prior to construction so that no impacts would occur • The pipelines would be installed underground; interference with evacuation and response plans would not be expected during the operational phase	• Pipeline construction could obstruct an evacuation and response plan, but generally equipment can be moved and coordination with emergency responders can occur prior to construction • The pipelines would be installed underground; interference with evacuation and response plans would not be expected during the operational phase • During the operational phase, it is likely that roadways adjacent to the storage facilities would remain open; however, a substantial closure may be needed in the event of a large leak or release, but mitigation measures covered in a risk management plan could be	• Construction of transmission lines could obstruct an evacuation and response plan, but generally equipment can be moved and coordination with emergency responders can occur prior to construction • Power lines would span roads and other evacuation routes and would not be expected to interfere with an evacuation and response plan during the operational phase

Impact Criterion	Angeles Link	CCS	Electrification
		implemented in coordination with appropriate agencies and emergency evacuation and response plans	
Wildland Fires	• During construction, welding or other activities could spark a wildland fire • During the operational phase, the pipeline would be underground and within previously disturbed areas and would have a low risk for starting a wildland fire	• During construction, welding or other activities could spark a wildland fire • During the operational phase, the pipeline and storage area would be underground and within previously disturbed areas and would have a low risk for starting a wildland fire • CO_2 is generally not flammable and would not likely contribute to the ignition of a wildfire	• During construction, welding and other activities could spark a wildland fire • During the operational phase, downed conductors, tree or avian strikes, or damaged transforms could start wildland fires
Hydrology and Water Quality			
Water Quality Degradation	• Construction could cause short-term water quality impacts from stormwater runoff from exposed soils and construction materials • Operational phase water quality impacts could occur, but the pipelines would be underground, the surface would be stabilized, and repair and maintenance would be infrequent and limited in size and scope	• Construction could cause short-term water quality impacts from stormwater runoff from exposed soils and construction materials • During the operational phase, potential impacts would include contamination of groundwater through leakage or brine displacement	• Construction could cause short-term water quality impacts from stormwater runoff from exposed soils and construction materials • Water quality impacts would not be anticipated during the operation phase as repair and maintenance would be infrequent and limited in size and scope
Groundwater Supply Decrease or Recharge Interference	• Water use during construction would be limited and short-term • Impervious surfaces would not be added, so groundwater recharge would not be impacted • The operational phase may use water (e.g., for compression needs, hydrotesting of pipelines), but potential impacts from water usage would not be expected to adversely affect groundwater	• Water use during construction would be limited and short-term • Impervious surfaces would be negligible but would result from injection pads, valves, or other aboveground features; however, because the impervious increase would be minor, groundwater recharge would not be impacted • The operational phase may use water (e.g., for compression needs, hydrotesting of pipelines), but potential impacts from water usage would not be expected to adversely affect groundwater	• Water use during construction would be limited and short-term • Impervious surfaces would likely be small or inconsequential, so groundwater recharge would not be impacted • The operational phase would not impact groundwater as none would be required for operations
Location within flood hazard zones	• The pipelines would be installed below the ground surface and may result in potential impacts, but they could be designed to cross floodplains, as needed, without causing risk to life or property	• The pipelines would be installed below the ground surface and could be designed to cross floodplains, as needed, without causing risk to life or property	• Electrical transmission towers and poles could be constructed across floodplains, as needed, without causing risk to life or property
Land Use			
Divide a community	• The pipeline would be underground and would not divide a community	• The pipeline and storage sites would be underground and would not divide a community	• The power lines would add new aboveground structures, that could divide communities

Impact Criterion	Angeles Link	CCS	Electrification
Conflict with an existing plan, policy, or regulation	• Depending on the pipeline routes, it is possible that the alignment crosses land uses that have existing plans that may conflict with the construction and operation of pipelines	• Depending on the pipeline routes, it is possible that the alignment crosses land uses that have existing plans that may conflict with the construction and operation of a of a pipeline • Injection or storage sites could conflict with existing land use restrictions	• Depending on the routes for the power lines, it is possible that the alignment crosses land uses that have existing plans that may conflict with the construction and operation of an electrical transmission line

4.4 CONCLUSION

Angeles Link would transport clean renewable hydrogen through a network of underground transmission pipelines. Construction would result in environmental impacts typically associated with construction of pipelines and appurtenant facilities. Operational phase impacts associated with the pipelines would be limited to routine repairs and maintenance. However, impacts would also occur during the operational phase from the appurtenant facilities, including one or more compressor stations, needed to transport gas through the pipeline system.

Each of the identified hydrogen delivery alternatives and non-hydrogen alternatives would also have construction and operational-related impacts in all of the resource areas evaluated for this study. To provide a high-level comparison of the potential impacts associated with Angeles Link and the identified alternatives at this feasibility stage, the potential impacts associated with the alternatives must be inferred on a qualitative, high-level basis based on similar projects and general location information. As the details of Angeles Link develop further in future phases, it is anticipated Angeles Link would undergo a full environmental review pursuant to CEQA and/or NEPA, as applicable, and a more thorough review of the potential environmental impacts of potential alternatives to a defined, proposed project of Angeles Link would be completed at that time.

5 – STAKEHOLDER FEEDBACK

5.1 MILESTONES

SoCalGas presented opportunities for the PAG and CBOSG to provide feedback at the following four key milestones in the course of conducting this study:

- the draft description of the Scope of Work,
- the draft Technical Approach,
- Preliminary Findings and Data, and
- the Draft Report.

These milestones are detailed in Table 5.1-1: Key Milestone Dates and were selected because they are critical points at which relevant feedback could meaningfully influence the study.

Table 5.1-1: Key Milestone Dates

Milestone	Date Provided to PAG/CBOSG	PAG/CBOSG Comment Due Date	Responses to Comments in Quarterly Report
Scope of Work	July 6, 2023	July 31, 2023	Q3 2023
Technical Approach	September 7, 2023	October 20, 2023	Q4 2023
Preliminary Data and Findings	June 11, 2024	June 25, 2024	Q2 2024
Draft Report	July 26, 2024	September 6, 2024	Q3 2024

Feedback provided at the PAG/CBOSG meetings is memorialized in the transcripts of each of the meetings. Written feedback received is included in the quarterly reports, along with SoCalGas's responses to the comments. Meeting transcripts are also included in the quarterly reports. The quarterly reports were submitted to the CPUC and are published on SoCalGas's website for Angeles Link (SoCalGas 2024).

Feedback was incorporated as applicable at each milestone throughout the progression of this study. Some feedback was not incorporated for various reasons, including feedback that was outside the scope of the Phase 1 CPUC Decision or study and feedback that raised issues better suited for third parties to address (e.g., third-party production, third-party storage, and end users are not evaluated in this Environmental Analysis). A summary of stakeholder input that was incorporated throughout the development of the Environmental Analysis Study and into this Final Report is provided in Table 5.1-2: Summary of Incorporated Stakeholder Feedback. All feedback received, whether or not it is incorporated into the Environmental Analysis as described

previously, has been recorded in the quarterly reports, along with SoCalGas's responses.

Additionally, some administrative and other minor corrections were made to the final report for the Environmental Analysis for clarity.

Table 5.1-2: Summary of Incorporated Stakeholder Feedback

Thematic Comments from PAG/CBOSG Members	Incorporation of and Response to Feedback
Map Detail	
Stakeholders expressed concern regarding the level of detail provided on the mapping in the Preliminary Data and Findings.	In response to stakeholder comments, maps with greater detail (e.g., cities and counties) were provided to the PAG and CBOSG members through the Living Library. The supporting maps and details for the Evaluated Segments, as well as potential environmental impacts associated with those conceptual pipeline segments, are provided in this Final Report.
200-Foot-Wide Study Corridor	
Stakeholders questioned the assumption of a 200-foot-wide study corridor for the Environmental Analysis and requested clarification on the corridor's placement in relation to the Angeles Link segments.	In response to stakeholder comments, Figure 2.1-1: Typical Areas Used in the Desktop Analysis was added to the Environmental Analysis Draft Report and this Final Report to provide a visual representation of the 200-foot-wide corridor in relation to the Angeles Link Evaluated Segments. The Environmental Analysis assumes a 200-foot-wide corridor of disturbance as a conservative estimate of the impact area and, in some cases, additional buffer areas were used to evaluate a wider area of potential impact based on the particular parameters of that environmental topic area and available data (e.g., locations of monitoring stations with available data, current air basin boundaries and attainment status, components of biological resources evaluation and protected species, proximity to sensitive receptors), as further discussed in Chapter 2 – Methodology and Regulatory Setting.
Potential AMMs	
Stakeholders noted that the potential AMMs for each resource area are not specific to the unique characteristics of each study area.	Language has been added to Chapter 1 – Introduction and Chapter 2 – Methodology and Regulatory Setting to explain how the potential AMMs were developed. In particular, the AMMs are specific to the study area for certain environmental factors where distinct attributes are present (e.g., location and type of resource crossed). As the details of Angeles Link are refined, additional AMMs may need to be tailored or enhanced to address specific geographic considerations along the pipeline routes (e.g., considerations for densely populated areas).

Thematic Comments from PAG/CBOSG Members	Incorporation of and Response to Feedback
Magnitude of Impact for Alternatives	
Stakeholders noted that the impacts associated with alternatives do not include a magnitude or comparison to impacts associated with Angeles Link.	In response to stakeholder comments, language has been added to Chapter 4 – Alternatives Analysis to further clarify that the magnitude of impacts could not be evaluated at this time due to the lack of specific information about Angeles Link and about the identified alternatives.
Safety Standards for Hydrogen	
Stakeholders noted that hydrogen poses different dangers than natural gas and therefore requires different and additional safety considerations.	Language has been added in the hazards and hazardous materials sections in each study area to clarify that hydrogen-specific standards and safety measures may need to be developed and implemented in future phases of Angeles Link.

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ATTACHMENT A: AIR BASINS AND AIR DISTRICTS MAPS

ATTACHMENT B-1: VEGETATION COMMUNITIES WITHIN THE 200-FOOT-WIDE CORRIDOR

ATTACHMENT B-2: HABITAT TYPE DESCRIPTIONS

ATTACHMENT B-3: PROTECTED SPECIES WITH THE POTENTIAL TO OCCUR

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ATTACHMENT C: ENERGY RESOURCES MAPS

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