CANNON STREET
WIDENING PROJECT

INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION NO. 1887-24

October 2024

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INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION NO. 1887-24

Submitted to:

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Project No. 20230893

October 2024

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SECTION 1.0 INTRODUCTION

In accordance with the California Environmental Quality Act (CEQA) and the *State CEQA Guidelines*, this Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared for the Cannon Street Widening Project (proposed project) spanning Cannon Street between Santiago Canyon Road and Serrano Avenue in the City of Orange (City). Consistent with *State CEQA Guidelines* Section 15071, this IS/MND includes a description of the project, an evaluation of the potential environmental impacts, and findings from the environmental review.

This IS/MND evaluates the potential environmental impacts that may result from implementing the proposed project. The City is the Lead Agency under CEQA, and its City Council is responsible for adoption of the environmental analysis and approval of the proposed project.

1.1 CONTACT PERSON

Any questions or comments regarding the preparation of this IS/MND, its assumptions, or its conclusions should be referred to:

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SECTION 2.0 PROJECT DESCRIPTION

This section describes the proposed Cannon Street Widening Project (proposed project) that is evaluated in this Initial Study/Mitigated Negative Declaration (IS/MND). A description of the proposed project's location, characteristics, and required approvals is provided below.

2.1 EXISTING CONDITIONS

2.1.1 Regional Project Location

The Cannon Street Widening Project (proposed project) is proposed for an approximately 0.6-mile segment of Cannon Street between Santiago Canyon Road and Serrano Avenue (project limits) in the City of Orange (City), County of Orange (County). The project limits are located in the eastern portion of the City of Orange, while the westerly northern portion of the roadway within the project limits borders the City of Villa Park. South of the City of Orange limits, the roadway enters the City of Santa Ana as it becomes Crawford Canyon Road, narrows to two lanes, and terminates at Newport Avenue. North of the Orange city limits, the roadway enters the City of Anaheim as it becomes Imperial Highway. Regional access to the project limits is provided by State Route 55 (SR-55), State Route 261 (SR-261), State Route 91 (SR-91), and Interstate 5 (I-5).

2.1.2 Project Vicinity and Surrounding Land Uses

Residential neighborhoods border Cannon Street on both sides north of Santiago Creek. The residential neighborhood west of Cannon Street, north of Taft Avenue is located in the City of Villa Park. The project, and all other adjacent properties, are in the City of Orange. According to the City of Orange Zoning Code, these properties are zoned for Single Family Residential: 8,000 square feet (R-1-8).[1]

South of Santiago Creek, undeveloped parcels owned by the County of Orange border Cannon Street. These parcels are zoned for Sand and Gravel Extraction District in the City's Zoning Code.[2] The County-owned property at the northeast corner of the Cannon Street and Santiago Canyon Road intersection is a former landfill undergoing methane monitoring. The City of Orange Water Department Pump Station site is situated on the northwest corner of the Cannon Street and Santiago Canyon Road intersection. A parking lot for the Santiago Creek Trail and Bike Path is located on the southwest corner of the Santiago Creek bridge.

2.1.3 Existing Roadway

Cannon Street is a four-lane north-south street traversing approximately 3.5 miles of the eastern portion of the City of Orange. As previously stated, the roadway terminates at Newport Avenue on the south end and becomes Imperial Highway at the north end. The roadway passes over Santiago Creek, an Orange County Flood Control District facility, on a three-span concrete bridge.

1 City of Orange. 2020. Zoning Map. September. Website: https://www.cityoforange.org/home/showpublisheddocument/40/637707607413300000 (accessed April 10, 2024).

2 Ibid.

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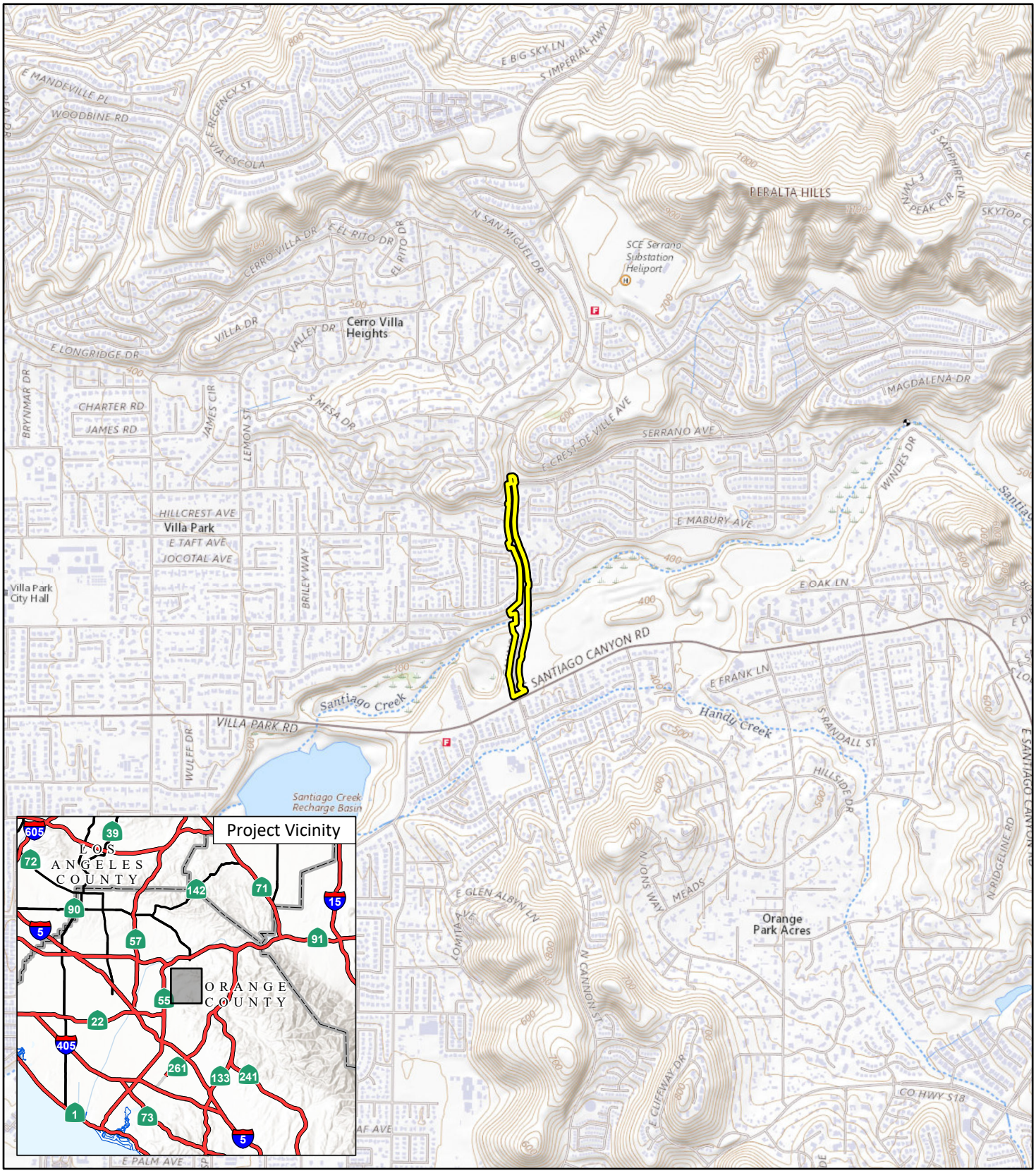

LSA

Project Location

FIGURE 2-1

N

0 1000 2000

FEET

SOURCE: USGS The National Map

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Cannon Street Widening Project

Project Location

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The City of Orange General Plan Circulation and Mobility Element[3] classifies Cannon Street as a Major Arterial (six lanes with a center median) from the Anaheim city limit to Santiago Canyon Road and as a Secondary Arterial (four lanes without a center median) from Santiago Canyon Road to the southern boundary of the City of Orange. As such, the project limits are considered a Major Arterial, which can accommodate up to 50,700 vehicles on an average weekday at level of service (LOS) D conditions. Although classified as a Major Arterial from the Anaheim city limit to Santiago Canyon Road, Cannon Street is configured with no more than four through lanes. A configuration of four lanes with a center median is stated in the Circulation and Mobility Element to have a daily capacity of 33,750 vehicle trips. The 2023 Traffic Flow Map[4] shows an average of 22,000 daily vehicle trips within the project area. These volumes were, however, collected in 2020, and may reflect a lower volume of traffic due to pandemic-related shelter-in-place orders. Traffic volume data collected in April 2023 revealed 33,096 daily vehicle trips between Serrano Avenue and Taft Avenue and 30,297 daily vehicle trips between Taft Avenue and Santiago Canyon Road. These volumes are near the capacity of the existing roadway.

Both the intersection of Cannon Street/Serrano Avenue and Cannon Street/Santiago Canyon Road are identified as critical intersections in the Circulation and Mobility Element. Critical intersections can deviate from typical City design standards in their role regulating the flow of vehicles along City streets. Cannon Street is not included in the Orange County Congestion Management Program (CMP).

A 10-foot wide Class I off-street bicycle path (part of the Santiago Creek Trail and Bikepath) is provided on the west side of Cannon Street between Santiago Canyon Road and the Santiago Creek Trail and Bikepath bicycle parking area (approximately 1,200 feet south of Taft Avenue). Class II on-street bicycle lanes of approximately 4–6 feet in width are provided on both sides of Cannon Street in this area as well. The bicycle lanes continue north to Serrano Avenue. For a portion of that distance, the bicycle lane on the west side of Cannon Street is limited to 4 feet, including the gutter. A sidewalk is provided along the east side of Cannon Street between Serrano Avenue and Santiago Canyon Road. On the west side of Cannon Street, however, a portion of sidewalk is missing between Serrano Avenue and Taft Avenue and pedestrians must share the Santiago Creek Trail and Bikepath south of the Santiago Creek Trail and Bikepath bicycle parking area.

2.2 PROPOSED PROJECT

The proposed project would widen the Cannon Street roadway within the project limits to accommodate a third northbound lane from approximately 500 feet north of Santiago Canyon Road to Serrano Avenue where it would join the two existing dedicated right-turn lanes to eastbound Serrano Avenue. As such, this additional lane will function as an auxiliary lane to improve traffic operations. South of Santiago Creek, additional pavement would be constructed to the east to widen the roadway. North of Santiago Creek, the roadway would be widened to the west by approximately 6 feet. In the southbound direction, bicyclists and pedestrians would cross Santiago Creek on a new bridge just west of the existing vehicular bridge. The new bridge would clear span the creek and is expected to consist of a prefabricated steel truss, approximately 170 feet long and 12 feet wide. The new bridge would carry two-way traffic for pedestrians and southbound traffic for bicyclists. Existing pavement delineation

[3] City of Orange. 2015. Orange General Plan Circulation and Mobility Element. Website: https://www.cityoforange.org/home/showpublisheddocument/192/637698172525970000 (accessed April 10, 2024).

[4] Orange County Transportation Authority (OCTA). 2023. Traffic Flow Map 2023. August. Website: https://maps.octa.net/portal/home/item.html?id=ef1e93c895ae4357ab5f9bc3e3daa20f (accessed April 12, 2024).

would be reconfigured and portions of the painted median would be replaced with a raised landscaped median. A traffic signal modification is required at Taft Avenue. **Figure 2-2, Proposed Project Improvements,** shows the improvements proposed under the project.

The proposed improvements are not expected to require permanent right-of-way acquisitions. However, the proposed pedestrian bridge will be located within the County of Orange, including the Orange County Flood Control District right-of-way. As such, an encroachment permit, a permanent easement, and a maintenance agreement may be required, and the City has coordinated with both parties. Temporary construction easements would be needed from the County of Orange to construct the new pedestrian bridge. A portion of the widening would be outside of the City of Orange's jurisdiction and the City has been and would continue to coordinate with Villa Park regarding the project. Utilities, traffic signals, and street lighting that are in conflict with the proposed improvements would be relocated.

Construction of the new pedestrian bridge would involve excavation for and construction of concrete abutments on the top of the Santiago Creek banks. The abutments would be supported on deep foundations, either cast-in-drilled-hole piles or driven piles. Construction of the roadway widening would involve the removal of existing pavement, sidewalk, and landscaping and the placement of fill material, aggregate base, hot mix asphalt pavement, and new guard rails. Tree removal and removal of other vegetation near the new bridge abutments would be necessary for the project.

During construction, Cannon Street would remain open to traffic. Lane shifts would be used to complete the widening work. Construction is expected to have a duration of approximately 8 months.

2.3 ANTICIPATED DISCRETIONARY ACTIONS

In accordance with Sections 15050 and 15367 of the *State CEQA Guidelines*, the City is the designated Lead Agency for the proposed project and has principal authority and jurisdiction for CEQA actions and project approval. Responsible Agencies are those agencies that have jurisdiction or authority over one or more aspects associated with the development of a proposed project and/or mitigation. Trustee Agencies are State agencies that have jurisdiction by law over natural resources affected by a proposed project.

The discretionary actions to be considered by the City of Orange as part of the proposed project include the following:

- Adoption of the Mitigated Negative Declaration

The following actions are required to be administered by the County of Orange and included as part of the proposed project:

- Approval of Temporary Construction Easement(s) for Proposed Pedestrian Bridge (a permanent easement and a maintenance agreement may also be required)
- Tree Removal Permit
- Clean Water Act 401 and 404 Permits
- CDFW Streambed Alteration

LSA

Existing Pavement Edges

Proposed Improvements and Lane Striping

City Boundaries

0 60 120

FEET

SOURCE: Nearmap (5/2023)

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FIGURE 2-2
Sheet 1 of 2

Cannon Street Widening Project

Proposed Project Improvements

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LSA

Existing Pavement Edges

Proposed Improvements and Lane Striping

City Boundaries

0 60 120

FEET

SOURCE: Nearmap (5/2023)

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FIGURE 2-2

Sheet 2 of 2

Cannon Street Widening Project

Proposed Project Improvements

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The following permits/agreement would be required from Responsible/Trustee Agencies:

- United States Army Corp of Engineers – Clean Water Act 404 Permit
- Regional Water Quality Control Board – Clean Water Act 401 Certification
- California Department of Fish and Wildlife – 1602 Streambed Alteration Agreement
- United States Fish and Wildlife Service – Section 7 Consultation

In addition, construction of the pedestrian bridge as part of the proposed project may require the following from Responsible/Trustee Agencies:

- County of Orange and Orange County Flood Control District – Encroachment Permit, Permanent Easement, and a Maintenance Agreement

The City will continue to coordinate with both parties to ensure the appropriate actions are incorporated for the construction of the proposed project.

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SECTION 3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist in Chapter 4.0.

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

DETERMINATION

On the basis of this initial evaluation:

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

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

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

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

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

Eric Peres — 10/28/2024

Signature — Date

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SECTION 4.0 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

    a. The significance criteria or threshold, if any, used to evaluate each question; and

    b. The mitigation measure identified, if any, to reduce the impact to less than significant.

4.1 AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Impact Analysis

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

California State Government Code Section 65560(b)(3) stipulates that city and county General Plans address "…Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historical and cultural value; areas particularly suited for park and recreation purposes, including access to lakes shores, beaches, and rivers, and streams; and areas which serve as links between major recreation and open space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors…" A scenic vista is generally defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public.

According to the City of Orange's (City) General Plan Program Environmental Impact Report (PEIR),[5] scenic vistas are primarily available in the eastern portion of the City due to the varied topography and open space allowing for scenic views. According to Figure 5.1-1 in the General Plan PEIR, the City has three officially designated viewscape corridors: the portion of Newport Boulevard within the City's boundary, Chapman Avenue east of Newport Boulevard, and State Route 91 (SR-91) north of Nohl Ranch Road. The proposed project is not located within the vicinity of any of these corridors and therefore the scenic views associated with these corridors are therefore not visible from the project limits. The PEIR considers public parks, open spaces, and architecturally significant historical structures to be scenic resources within the City. According to Figure 5.1-1 in the PEIR, the southern portion of the project limits is bordered by existing parks. The proposed project also intersects with Santiago Creek, which is also considered a scenic resource within the City. Views from the project

[5] City of Orange. 2010. Orange General Plan Program Environmental Impact Report (PEIR). March 2010. Website: https://www.cityoforange.org/home/showpublisheddocument/240/637698173340500000 (accessed March 2024).

limits to these park areas could be considered scenic, especially considering their proximity to Santiago Creek.

The proposed project consists of widening the existing Cannon Street roadway to accommodate a third northbound lane, as well as the construction of a new pedestrian bridge over Santiago Creek and a traffic signal modification. The proposed improvements would generally maintain the existing visual character of the roadway and would not increase the scale of development within the project limits. The proposed pedestrian bridge would be located directly west of the existing vehicular bridge and would not exceed the height of the existing vehicular bridge. Based on this location directly adjacent to existing development, the proposed pedestrian bridge would not substantially alter scenic resources surrounding the project limits.

Near the northern boundary of the project limits, Cannon Street is lined with ornamental trees along both sides. As part of the proposed widening efforts, Cannon Street would be extended further to the west by 9 feet. This widening would necessitate the removal of approximately 33 trees, which are considered scenic resources, from the western edge of Cannon Street. However, the proposed project would involve the planting of 65 trees in place of the 33 to be removed, which would be planted within the proposed landscaped median as well as along the western curb of Cannon Street. Therefore, the proposed project would replace lost scenic resources to an approximate 2:1 ratio and would improve the visual character of the roadway. Further, this tree removal would occur within the portion of the project limits surrounded by development rather than the portion considered scenic due to proximity to Santiago Creek. In addition, the removal of street trees is subject to Chapter 12.28, Street Trees, of the City's Municipal Code. Specifically, Section 12.28.030 states the following:[6]

> Every person planting or arranging for the planting of street trees shall obtain a permit required by this chapter from the Director of Public Works/City Engineer and perform the work in accordance with the specifications prepared by the Public Works Director/City Engineer;
>
> Every person removing or arranging for the removal of a street tree shall obtain a permit required by this chapter from the Director of Public Works/City Engineer and perform the work in accordance with the specifications prepared by the Public Works Director/City Engineer.

Therefore, all tree removal and planting activities proposed under the project would be subject to a permit and specifications set forth by the Director of Public Works/City Engineer, which would ensure that they are completed in a manner visually compatible with surrounding land uses.

Therefore, the proposed project would neither alter an existing scenic vista, nor block views of any scenic vistas. Impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

[6] City of Orange Municipal Code. Section 12.28.030. Street Trees. Specification – Permits.

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

The California Department of Transportation's (Caltrans) Landscape Architecture Program administers the Scenic Highway Program, contained in the Streets and Highways Code, Sections 260–263. State Highways are classified as either Officially Listed or Eligible. According to a map of the Scenic Highway Program, there are no officially designated or eligible State Scenic Highways within the City of Orange.[7] Furthermore, the City's General Plan Circulation and Mobility Element does not identify or designate any scenic roadways or corridors. Therefore, no impacts to scenic resources, including trees, rock outcroppings, or historic buildings visible from a State Scenic Highway would occur. No mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

c) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The project limits are located within a partially urbanized area characterized by residential development as well as vacant open space areas. The northern portion of the project limits is bound by residential neighborhoods while the southern portion of the project limits is bound by undeveloped land, some of which is previously disturbed. The project limits are currently developed with the existing Cannon Street roadway and the proposed project generally proposes to continue this roadway use with the addition of a new pedestrian bridge crossing Santiago Creek. As discussed below, the proposed project would not conflict with applicable zoning and General Plan regulations governing scenic quality.

Municipal Code. The project limits consist of an existing roadway surrounded by vacant and residential land uses. The City's Municipal Code sets forth requirements for the City's roads, including procedures for roadway construction projects.

Section 12.02.010 of the City's Municipal Code[8] states that:

> …the 2021 edition of the *Standard Specifications for Public Works Construction*, also known as the "Greenbook", are applicable to all public works construction, unless stricter standards have been set forth in Title 12 of the Municipal Code, Streets, Sidewalks, and Public Places.

[7] California Department of Transportation (Caltrans). 2018. California State Scenic Highway System Map. Website: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa (accessed February 12, 2024).

[8] City of Orange Municipal Code. Section 12.02.010.

Section 12.52.030 of the City's Municipal Code states that:

> …any work impacting public infrastructure shall make necessary improvements to address such impacts, including roadway pavement and street tree replacement.

The proposed project is required to comply with the City's Municipal Code and therefore, by reference, the 2021 *Standard Specifications for Public Works Construction*. This adherence would ensure that the proposed roadway improvements are designed in a consistent manner with the rest of the City's circulation system. The proposed project would ensure that impacted land adjacent to Cannon Street is improved beyond existing conditions given the proposed resurfacing and landscaping plans, which would replace trees at a nearly 2:1 ratio per the City's Municipal Code. Therefore, the proposed project would be consistent with Sections 12.02.010 and 12.52.030 of the City's Municipal Code, as well as any other applicable Municipal Code sections pertaining to aesthetics.

General Plan. According to the General Plan Circulation and Mobility Element, Cannon Street is classified as a Major Arterial roadway consisting of six divided lanes.[9] The Circulation and Mobility Element sets forth several goals and policies pertaining to roadway aesthetics that would be relevant to the proposed project, as listed below:

> **Goal 6.0**: Provide roadway corridors that are aesthetically pleasing and contribute to a feeling of safety, security, and comfort for motorists, bicyclists, and pedestrians.
>
> > **Policy 6.2:** Provide clear indicators in the right-of-way for where pedestrians and bicyclists are encouraged to walk, bike, or cross safely. These may include special paving, line stripes, and crosswalks.
> >
> > **Policy 6.3:** Provide lighting, landscaping, street trees, and other appropriately scaled streetscape features that accommodate all users on commercial corridors. Where appropriate, lighting should be scaled for autos as well as pedestrians.

The Urban Design Element of the City's General Plan[10] also sets forth goals and policies related to aesthetics that would be relevant to the proposed project, as follows:

> **Goal 1.0**: Promote streetscapes that enhance the economic vitality and overall visual quality of commercial corridors, support the circulation network, and support pedestrian-scale streets and patterns of activity.
>
> > **Policy 1.3**: Ensure that streetscape improvements provide for an environment that offers a pleasant experience for motorists, pedestrians, and transit riders.

As previously established, the proposed project would be consistent with all applicable City design standards upon project approval The roadway improvements would improve the visual character of Cannon Street within the project limits through the inclusion of appropriate streetscape features including landscaped median and curb areas with the planting of more trees than present under

[9] City of Orange. 2010. Orange General Plan Circulation and Mobility Element. March 2010. Website: https://www.cityoforange.org/home/showpublisheddocument/192/637698172525970000 (accessed March 21, 2024).

[10] City of Orange. 2010. Orange General Plan Urban Design Element. March 2010. Website: https://www.cityoforange.org/home/showpublisheddocument/218/637698172574570000 (accessed March 21, 2024).

existing conditions. Further, the proposed pedestrian bridge would incorporate clear signage and an aesthetically pleasing design, and would allow for separation from the Cannon Street vehicular roadway in order to provide safe and pleasant pedestrian and bicyclist experience.

As such, the features of the proposed project would be compatible with Goal 1.0 and Policy 1.3 of the City's General Plan Circulation and Mobility and Urban Design Elements. Overall, improvements associated with the proposed project would improve the existing visual character of the project limits and surrounding area. For the reasons stated above, the proposed project would not degrade the visual character of the planning area or conflict with applicable zoning and General Plan regulations governing scenic quality. Impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

The impact of nighttime lighting depends upon the type of use affected, the proximity to the affected use, the intensity of specific lighting, and the background or ambient level of the combined nighttime lighting. Nighttime ambient light levels may vary considerably depending on the age, condition, and abundance of point-of-light sources present in a particular view. The use of exterior lighting for safety and aesthetic illumination of the proposed pedestrian bridge may contribute to ambient nighttime lighting conditions. Spillover light can be problematic in areas where the ambient conditions are very dark, and there are specialized uses that depend on that darkness.

The spillover of light onto adjacent properties has the potential to interfere with certain activities, including vision, sleep, privacy, and the general enjoyment of the natural nighttime condition. Light sensitive uses include residential, some commercial and institutional uses, and, in some situations, natural areas. Changes in nighttime lighting may become significant if a proposed project substantially increases ambient lighting conditions beyond its property line and project lighting routinely spills over into adjacent light-sensitive land use areas. Nighttime illumination impacts are evaluated in terms of the project's net change in ambient lighting conditions and proximity to light-sensitive land uses.

Reflective light (glare) is caused by sunlight or artificial light reflecting from finished surfaces (e.g., window glass) or other reflective materials. Glass and other materials can have many different reflectance characteristics. Buildings constructed of highly reflective materials from which the sun reflects at a low angle commonly cause adverse glare. Reflective light is common in urban areas. Glare generally does not result in the illumination of off-site locations but results in a visible source of light viewable from a distance. However, the proposed project is a roadway widening project that does not consist of construction of buildings or structures containing reflective materials.

As previously discussed, the project limits are surrounded by a residential uses and vacant land. The nearest light-sensitive land uses are the single-family residential neighborhoods adjacent to the northern portion of the project limits. Existing sources of light on and adjacent to the project limits include streetlights, exterior lighting from adjacent properties, traffic signals, and vehicle headlights. The proposed project would not introduce any substantial new sources of reflective light associated with reflective building materials because it proposes roadway improvements and no new buildings. The

proposed pedestrian would include lighting fixtures to ensure pedestrian safety at night, which would be required to comply with Section 12.12.030 of the City's Municipal Code, which states the following:

> Lighting on any premises shall be directed, controlled, screened or shaded in such a manner as not to shine directly on surrounding premises. Furthermore, lighting on any residential property shall be controlled so as to prevent glare or direct illumination of any public sidewalk or thoroughfares.

Therefore, any temporary lighting fixtures established for construction visibility purposes or permanent lighting fixtures associated with the proposed improvements would be appropriately screened from adjacent land uses pursuant to Section 12.12.030 of the City's Municipal Code.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

4.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Impact Analysis

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The project limits consist of an existing roadway generally surrounded by developed land, adjacent to vacant land toward the southern project limits. The project's location on the California Important Farmland Finder map prepared by the California Department of Conservation (DOC) identifies the project limits as "Urban and Built-Up Land" and "Other Land" which is defined as land that is occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. Portions of the project limits are also classified as "Other Land," which consists of land not included in any other mapping category. These classifications indicate that Prime Farmland,

Unique Farmland, or Farmland of Statewide Importance is not present within the project limits. Moreover, the areas zoned Agricultural use (A-1) in the City of Orange are not located within the immediate vicinity of the project limits. Therefore, the implementation of the proposed project would not result in any conversion of designated Prime Farmland, Unique Farmland, or Farmland of Statewide importance to a non-agricultural use. No impact would occur, and no mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

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

The project limits consist of a roadway and adjacent land zoned for Single Family Residential (R-1-8)[11] and designated for Resource Area and Open Space.[12] The project limits are not currently zoned or used for any agricultural purposes, and there are no Williamson Act contracts associated with the project limits. Therefore, no conflicts would arise regarding agricultural zoning use or a Williamson Act contract. No impact would occur, and no mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

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

In reference to California's Public Resources Code (PRC) Section 1220(g), PRC Section 4526, or Government Code Section 51104(g), the project limits currently are not used for timberland production, are not zoned as forest land or timberland, and do not contain any forest land or timberland refined in the State code. Therefore, no impacts to forest land or timberland would occur, and no mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

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

The project limits currently contain a roadway and do not contain any type of forest land. Moreover, the future project use would not involve converting any forest land into non-forest use. As such, construction of the proposed project would not involve any environmental changes that would result in

[11] City of Orange. 2020. City of Orange Zoning Map. September. Website: https://www.cityoforange.org/home/showpublisheddocument/40/637707607413300000 (accessed February 9, 2024).

[12] City of Orange. 2015. Orange General Plan Land Use Element. Website: https://www.cityof orange.org/home/showpublisheddocument/208/637698172555630000 (accessed February 9, 2024).

the conversion of forest land to a non-forest use. Therefore, no impacts would occur, and no mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The project limits are bounded by residential and vacant land that is not near any Agricultural zoned parcels. As such, the proposed project would not convert any farmland into a non-agriculture use, and the proposed project would not contribute to environmental changes that could result in the conversion of farmland to non-agricultural use. Therefore, no impact would occur, and no mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

4.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Technical Background

The analysis presented in the following section is based upon the Air Quality and Greenhouse Gas Emissions Technical Memorandum (AQ/GHG Memo) (April 2024) prepared for the proposed project, which involved emissions modeling using the California Emissions Estimator Model version 2022.1 (CalEEMod) computer program. The AQ/GHG Memo is included within this IS/MND as Appendix A.

A region's topographic features have a direct correlation with air pollution flow and therefore are used to determine the boundary of air basins. The proposed project is in the City of Orange in the County of Orange and is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD), which regulates air quality in the South Coast Air Basin (Basin). The Basin comprises approximately 10,000 square miles and covers all of Orange County and the urban parts of Los Angeles, Riverside, and San Bernardino Counties. The Basin is on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east, forming the inland perimeter.

The federal Clean Air Act and the California Clean Air Act mandate the control and reduction of specific air pollutants. Under these acts, the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards for six criteria air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Two criteria pollutants, O_3 and NO_2, are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO_2, and Pb are considered local pollutants that tend to accumulate in the air locally.

Air quality monitoring stations are located throughout the nation and are maintained by the local air districts and State air quality regulating agencies. Data collected at permanent monitoring stations are

used by the USEPA to identify regions as "attainment" or "nonattainment" depending on whether the regions meet the requirements stated in the applicable National Ambient Air Quality Standards (NAAQS). Nonattainment areas are imposed with additional restrictions as required by the USEPA. In addition, different classifications of attainment (e.g., marginal, moderate, serious, severe, and extreme) are used to classify each air basin in the State on a pollutant-by-pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and to comply with the NAAQS. As shown in Table 4.3.A, the Basin is designated as nonattainment by federal standards for O_3 and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) and nonattainment by State standards for O_3, particulate matter less than 10 microns in diameter (PM_{10}), and $PM_{2.5}$.

Table 4.3.A: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1-hour	Nonattainment	N/A
O_3 8-hour	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Unclassified/Attainment (1-hour) Attainment/Maintenance (Annual)
SO_2	Attainment	Unclassified/Attainment
Lead	Nonattainment[1]	Unclassified/Attainment[1]
All Others	Attainment/Unclassified	Attainment/Unclassified

Source 1: NAAQS and CAAQS Attainment Status for South Coast Air Basin (SCAQMD 2016). Website: www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf (accessed April 2024).
Source 2: Nonattainment Areas for Criteria Pollutants (Green Book) (USEPA 2019). Website: www.epa.gov/green-book (accessed April 2024).

[1] Only the Los Angeles County portion of the South Coast Air Basin is in nonattainment for lead.

CAAQS = California Ambient Air Quality Standards
CO = carbon monoxide
N/A = not applicable
NAAQS = National Ambient Air Quality Standards
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SCAQMD = South Coast Air Quality Management District
SO_2 = sulfur dioxide
USEPA = United States Environmental Protection Agency

The SCAQMD considers any project in the Basin with construction- or operation-related emissions that exceed any of the following emission thresholds to have potentially significant impacts. The emission thresholds were established based on the attainment status of the Basin with regards to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these emission thresholds are regarded as conservative and would overstate an individual project's contribution to health risks. Table 4.3.B lists the California Environmental Quality Act (CEQA) significance thresholds for construction and operational emissions established for the Basin.

Table 4.3.B: SCAQMD Construction and Operation Thresholds of Significance

Emission Sources	Pollutant Emissions Threshold (lbs/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction Thresholds	75	100	550	150	150	55
Operation Thresholds	55	55	550	150	150	55

Source: South Coast Air Quality Management District (1993).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_2 = sulfur dioxide
VOC = volatile organic compounds

In addition, the SCAQMD published its Final Localized Significance Threshold Methodology in June 2003 (updated July 2008), recommending that all air quality analyses include an assessment of air quality impacts to nearby sensitive receptors.[13] This guidance was used to analyze potential localized air quality impacts associated with construction of the proposed project. Localized significance thresholds (LSTs) are developed based on the size or total area of the emissions source, the ambient air quality in the source receptor area, and the distance to the project. Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. The closest sensitive receptors to the project limits include single-family residential uses located approximately 50 feet along the eastern and western boundaries of the project limits.

LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For the proposed project, the appropriate SRA for the LST is the Central Orange County area (SRA 17). SCAQMD provides LST screening tables for 25-, 50-, 100-, 200-, and 500-meter source-receptor distances. As identified above, the closest sensitive receptors to the project limits include the single-family residential uses located approximately 50 feet from the eastern and western boundaries of the project limits. In cases where receptors may be closer than 82 feet (25 meters), any distances within the 82-foot (25-meter) buffer zone can be used to assess potential impacts on nearby sensitive receptors. As identified above, the closest sensitive receptors nearby the project limits include single-family residential uses located approximately 50 feet from the eastern and western boundaries of the project limits. Because these sensitive receptors abut the project limits, the minimum distance of 82 feet was used. Based on the anticipated construction equipment, it was conservatively assumed that the maximum daily disturbed acreage for the proposed project would be 5.0 acres.[14] As such, the LSTs for a 5.0-acre site at a distance of 82 feet were derived by interpolation. Table 4.3.C lists the localized emissions thresholds that would apply during project construction.

Table 4.3.C: SCAQMD Localized Significance Thresholds

Emissions Source	Pollutant Emissions Threshold (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Construction (5.0-acres, 82-foot distance)	183	1,253	13	7

Source: Final Localized Significance Threshold Methodology (SCAQMD, July 2008).
CO = carbon monoxide
lbs/day = pounds per day
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size

[13] South Coast Air Quality Management District (SCAQMD). 2008. *Final Localized Significance Threshold Methodology.* July. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf (accessed April 15, 2024).

[14] Ibid.

Table 4.3.C: SCAQMD Localized Significance Thresholds

Emissions Source	Pollutant Emissions Threshold (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$

NO_x = nitrogen oxides SCAQMD = South Coast Air Quality Management District

Impact Analysis

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

An Air Quality Management Plan (AQMP) describes air pollution control strategies to be undertaken by a city or county in a region classified as a nonattainment area to meet the requirements of the federal Clean Air Act. As previously stated, the Basin is in nonattainment for federal standards for O_3 and $PM_{2.5}$ and is in nonattainment by State standards for O_3, PM_{10}, and $PM_{2.5}$. The main purpose of an AQMP is to bring an area into compliance with the requirements of federal and State ambient air quality standards (AAQS). Every 3 years, the SCAQMD prepares a new AQMP, updating the previous plan and 20-year horizon.[15] The Final 2022 Air Quality Management Plan is the currently adopted AQMP for the region.

A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review given that the air quality plan strategy is based on projections from local General Plans.

The City of Orange's General Plan is consistent with the Southern California Association of Governments' (SCAG) Regional Comprehensive Plan Guidelines and the SCAQMD AQMP. Pursuant to the methodology provided in the SCAQMD's 1993 *CEQA Air Quality Handbook*, consistency with the Basin AQMP is affirmed when a project (1) would not increase the frequency or severity of an air quality standards violation or cause a new violation, and (2) is consistent with the growth assumptions in the AQMP.

The proposed project would result in short-term construction and long-term operational pollutant emissions that are all less than the CEQA significance emissions thresholds established by the SCAQMD, as demonstrated below in Response 4.3(b); therefore, the proposed project would not result in an increase in the frequency or severity of an air quality standards violation or cause a new air quality standards violation. Further, the *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities.

The proposed project consists of widening an existing 0.6-mile portion of the Cannon Street roadway to accommodate a third northbound lane, as well as the construction of a new pedestrian bridge over

[15] South Coast Air Quality Management District (SCAQMD). 2022. *Final 2022 Air Quality Management Plan.* December 2.

Santiago Creek and a traffic signal modification. The proposed improvements would generally maintain the existing visual character of the roadway and would not increase the scale of development within the project; therefore, the proposed project is not defined as significant. In addition, the proposed project would not require a change to the General Plan land use designation or the current zoning. Based on the consistency analysis presented above, the proposed project would be consistent with the regional AQMP. Impacts related to conflict with or obstruction of implementation of the applicable air quality plan would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

As identified above, the Basin is currently designated as nonattainment for the federal and State standards for O_3 and $PM_{2.5}$. The Basin's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, to result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified SCAQMD significance thresholds identified above in Table 4.3.B, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is not necessary. The following analysis assesses the potential project-level air quality impacts associated with construction and operation of the proposed project.

Construction. During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by site preparation and grading activities. Emissions from construction equipment are also anticipated and would include CO, sulfur oxides, nitrogen oxides (NO_X), VOC, directly emitted $PM_{2.5}$ or PM_{10}, and toxic air contaminants such as diesel exhaust particulate matter.

Project construction activities would include grubbing and land clearing, grading and excavation, drainage, utilities, and sub-grade, and paving activities. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. Fugitive dust emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Fugitive dust emissions would depend on soil moisture, silt content of soil, wind speed, and amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

The SCAQMD has established Rule 403: Fugitive Dust, which would require the City of Orange Public Works Department to implement measures that would reduce the amount of particulate matter generated during the construction period. The Rule 403 measures that were incorporated in this analysis include:

- Water active sites at least twice daily (locations where earth disturbance is to occur shall be thoroughly watered prior to earthmoving).

- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet (0.6 meter) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.

- Reduce traffic speeds on all unpaved roads to 15 miles per hour or less.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, sulfur oxides (SO_X), NO_X, VOC, and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the proposed project using the California Emissions Estimator Model version 2022.1 (CalEEMod) and are summarized in Table 4.3.D below.

Table 4.3.D: Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	Total PM_{10}	Total $PM_{2.5}$
Maximum Daily Emissions	10.3	88.2	100.9	0.2	7.9	4.2
SCAQMD Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (April 2024).
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_x = sulfur oxides
VOC = volatile organic compounds

As shown in Table 4.3.D, the proposed project would not exceed the significance criteria for daily VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ emissions. Therefore, construction of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS. Construction impacts would be less than significant, and no mitigation is required.

Operation. Long-term air pollutant emission impacts are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity), and area sources (e.g., landscape maintenance equipment use) related to the proposed project. The proposed project consists of widening an existing 0.6-mile portion of the Cannon Street roadway to accommodate a third northbound auxiliary lane, as well as the construction of a new pedestrian bridge over Santiago Creek and a traffic signal modification. The proposed improvements would generally maintain the existing visual character of the roadway and would not increase the scale of development within the project. As discussed in the

project's vehicle miles traveled (VMT) memorandum[16] for the proposed project, upon completion of construction activities, operation of the proposed project would not result in a significant traffic impact at the study intersections, and the Level of Service (LOS) traffic designation would remain the same as with the existing conditions. Therefore, no additional trips are anticipated due to implementation of the proposed project. As such, the proposed project would not result in an increase in the generation of vehicle trips or VMT that would increase air pollutant emissions.

Furthermore, any utility relocations that may be required would not result in a substantial source of energy and water source emissions. After relocation, the proposed project would operate similarly to existing conditions. Therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS. Operational impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

Sensitive receptors are defined as people who have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential dwelling units. The closest sensitive receptors nearby the project limits include single-family residential uses located approximately 50 feet along the eastern and western boundaries of the project limits. Table 4.3.E shows the results of the LST analysis during project construction for a 5.0-acre site at a distance of 25 meters (82 feet).

Table 4.3.E: Project Localized Construction Emissions

Sources	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	87.6	95.1	6.5	3.9
Localized Significance Threshold	**183.0**	**1,253.0**	**13.0**	**7.0**
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (April 2024).
Note: Source Receptor Area 17, based on a 5.0-acre construction disturbance daily area, at a distance of 82 feet (25 meters) from the project boundary.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

As detailed in Table 4.3.E, the proposed project would not result in an exceedance of a SCAQMD LST during project construction or operation. During construction, construction contractors would be required to implement measures to reduce or eliminate emissions by implementing SCAQMD Rule 403 dust control measures. In addition, the maximum daily emissions associated with project construction emissions are identified in Table 4.3.E and indicate the project would not exceed the significance criteria for VOC, NOx, CO, PM_{10}, or $PM_{2.5}$ emissions. Therefore, the emissions associated with

[16] LSA Associates, Inc. (LSA). 2024. *Proposed Improvements to Cannon Street Traffic Assessment Memo.* October 2024.

construction of the proposed project would not be expected to exceed the most stringent applicable federal or State ambient air quality standards. It should be noted that the ambient air quality standards are developed and represent levels at which the most susceptible persons (children and the elderly) are protected. In other words, the ambient air quality standards are purposefully set low to protect children, the elderly, and those with existing respiratory problems. Therefore, given the temporary nature of short-term construction impacts, and the absence of any exceeded threshold of significance related to construction impacts, construction of the proposed project would not exceed SCAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations. No significant health risk would occur from project construction emissions. Furthermore, as discussed in the preceding section, the proposed project's operational activities would not be considered significant. Therefore, the project would not expose sensitive receptors to substantial pollutant concentrations during project construction or operation.

Naturally Occurring Asbestos. The project is located in Orange County, which is among the counties found to have serpentine and ultramafic rock in their soils.[17] However, according to the California Geological Survey, no such rock has been identified in the project vicinity. As described above, the proposed project would undergo median/curb modifications, resurfacing, and utility relocations that would require asphalt demolition. As such, asphalt demolition may expose asbestos used in building materials; however, the proposed project would be required to comply with SCAQMD Rule 1403: Asbestos demolition and removal, which would help reduce asbestos exposure. Therefore, with compliance of SCAQMD Rule 1403, the potential risk for naturally occurring asbestos (NOA) during project construction is small and would be considered to be less than significant.

Based on the analysis presented above, impacts related to exposure of sensitive receptors to substantial pollutant concentrations would be less than significant, and mitigation is not required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

Heavy-duty equipment within the project limits during construction would emit odors, primarily from equipment exhaust. However, the construction activity would cease after individual construction is completed. No other sources of objectionable odors have been identified for the proposed project.

SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." The proposed uses are not anticipated to emit any objectionable odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Impacts would be less than significant, and mitigation is not required.

[17] California Department of Conservation (DOC). California Geological Survey. n.d. Asbestos. Website: https://www.conservation.ca.gov/cgs/minerals/mineral-hazards (accessed April 15, 2024).

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

4.4 BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

The analysis presented in the following section is based upon the Biological Resources Assessment (BRA) prepared for the proposed project in April 2024. This assessment was prepared by a qualified biologist using a methodology consisting of a literature review, a reconnaissance-level pedestrian field survey, a bat survey, and a jurisdictional delineation report. The Biological Resources Assessment is included within this IS/MND as Appendix B.

Impact Analysis

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

Plant Species. Based on review of current biological database records conducted during preparation of the Biological Resources Assessment for the proposed project, there are known occurrence records of

37 special-status plant species in the vicinity of the project limits.[18] Three of these 37 species are visually detectable year-round. Because the three species, Malibu baccharis (*Baccharis malibuensis*; California Rare Plant Rank [CRPR] 1B.1), Tecate cypress *(Hesperocyparis forbesii;* CRPR 1B.1), and chaparral nolina (*Nolina cismontane*; CRPR 1B.2) were not observed within the project limits during the site survey but would have been observed if present, these species were determined to be absent from the project limits.

Of the remaining 34 special-status plant species, 33 species are not expected to occur within the project limits due to the lack of suitable habitat and/or conditions on site. However, there is one special-status plant species (i.e., southern tarplant [*Centromadia parryi* ssp. *australis*; CRPR 1B.1]) known to occur near the project limits and that has a low probability of occurrence based on the existing habitat and conditions within the project limits. Southern tarplant has a CRPR of 1B.1, which is a California Native Plant Society (CNPS) designation given to plants considered rare, threatened, or endangered in California, and seriously threatened elsewhere. This species does not have federal or State listing of threatened or endangered. This special-status plant was not observed during the May 2023 field surveys conducted at the project limits, which is the appropriate season for this species.

Because no special-status plant species were observed within the project limits and vegetation removal is not proposed to take place in areas where the southern tarplant species may occur within the project limits, impacts to special-status plant species are not anticipated under the proposed project.

Animal Species. Based on review of the current biological database records conducted during preparation of the Biological Resources Assessment for the proposed project, there are known occurrence records of 57 special-status animal species in the vicinity of the project limits. Of the 57 special-status animal species, 46 are not expected to occur within the project limits due to the lack of suitable habitat and/or conditions on site. Although not observed during the site survey, the following 9 special-status animal species identified from the California Natural Diversity Database (CNDDB) and Information for Planning and Consultation (IPaC) records search could potentially occur within the project limits:

- Crotch bumble bee (*Bombus crotchii*);
- Quino checkerspot butterfly (*Euphydryas editha quino*);
- Southern California legless lizard (*Anniella stebbinsi*);
- Great blue heron; foraging (*Ardea Herodias*);
- Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis)*;
- Coastal California gnatcatcher (*Polioptila californica californica*);
- Cooper's hawk; nesting (*Accipiter cooperii*);
- White-tailed kite (*Elanus leucurus)*; and
- Yuma myotis (*Myotis yumanensis)*.

Of these 9 species, four have a moderate or higher probably to occur within the project limits due to habitat suitability and documented occurrences within the vicinity: southern California legless lizard, Cooper's hawk, white-tailed kite, and coastal California gnatcatcher. Additionally, two species

[18] California Department of Fish and Wildlife (CDFW). 2021. California Natural Diversity Database. RareFind 5 (Version 5.3.0) website: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data (May and June 2023).

identified in the CNDDB and IPaC records search were observed within the Biological Study Area (BSA): yellow warbler (*Setophagia petechia*) and least Bell's vireo (*Vireo bellii pusillus*).

The southern California legless lizard has suitable habitat present within the project limits, particularly within Santiago Creek and the southwestern portion of the project limits that consists of coastal sage scrub. While this species was not observed during the May 2023 field visits, it was documented within 3 miles of the project limits as recently as 2019. Because suitable habitat exists and recent documentation of it within the vicinity of the project limits, southern California legless lizard has a moderate potential to occur. Implementation of Mitigation Measure (MM) BIO-1 would reduce potential impacts to the Southern California legless lizard (*Anniella stebbinsi*) to a less than significant level.

During construction of the proposed project, potential impacts such as noise could potentially disrupt or otherwise adversely affect bird nesting activities within or adjacent to the project limits. Nesting birds are protected under the federal Migratory Bird Treaty Act (MBTA) (Title 33, United States Code [USC], Section 703 et seq., see also Title 50, Code of Federal Regulations [CFR], Part 10) and Section 3503 of the California Fish and Game Code. Therefore, implementation of the proposed project would be subject to the provisions of the MBTA, which prohibits disturbing or destroying active nests. Implementation of MMs BIO-2 and BIO-3 would ensure compliance with the MBTA and would reduce potential impacts to nesting birds to a less than significant level.

Section 4150 of the California Fish and Game Code protects non-game mammals, which are defined as any naturally occurring mammal in California that is not a game mammal, fully protected mammal, or fur-bearing mammal. Non-game mammals, which include bats, bat roosts, and maternity colonies, may not be taken or possessed except as provided by the California Fish and Game Code or in accordance with applicable regulations.

The bridge portion of Cannon Street, as well as the ornamental and native tree species occurring throughout the project limits, could provide habitat to native bats in the form of roosts, foraging, or maternity sites. Bats breed in late spring/early summer (approximately February–August). Bats attempting to roost or breed in landscape trees or bridges can be subject to impacts from tree removal or trimming activities (e.g., the trimming of palm fronds) and bridge modifications and maintenance. Because bats have low reproductive turnover (i.e., most species have only one young per year) and high juvenile mortality, it can take many years for a colony or population of bats to recover from any impacts that result in mortality or even a decrease in reproductive ability. Therefore, the proposed project could potentially result in adverse impacts to roosting bats. However, with incorporation of MMs BIO-4 through BIO-6, potential impacts to roosting bats would be reduced to a less than significant level. Therefore, the proposed project would result in less than significant impacts to candidate, sensitive, or special-status species with implementation of MMs BIO-1 through BIO-6.

Mitigation Measures:

MM BIO-1 **Pre-Construction California Legless Lizard Surveys.** If construction activities take place from September through November, a qualified biologist will conduct pre-construction surveys for California legless lizards no more than 48 hours before initial grading and/or ground-disturbing activities in or near areas of sandy, friable soil. This survey will include systematic subsurface searching, as legless lizards are fossorial (burrowing), and staking and fencing the limits of the survey areas with small-mesh

construction fencing buried to a minimum depth of 6 to 10 inches below grade would reduce the likelihood of lizards reentering the construction zone.

Potential direct and/or indirect impacts (e.g., noise during construction) could potentially disrupt or otherwise adversely affect bird nesting activities in and/or adjacent to the project impact area. However, implementation of the recommended avoidance measure identified below would reduce potential impacts to nesting birds to less than significant levels. Other avoidance and minimization measures identified below would address potential construction-related impacts to nesting birds.

MM BIO-2 **Pre-Construction Nesting Bird Surveys and Active Nest Avoidance Buffers.** If vegetation removal, construction, or grading activities are planned to take place within the active nesting bird season (February 15 through August 31), a qualified biologist should conduct a pre-construction nesting bird survey no more than 3 days prior to the start of such activities. The nesting bird survey should include the entirety of the project limits and areas immediately adjacent to the limits that could potentially be affected by project-related activities such as noise, vibration, increased human activity, and dust. If any active bird nests are found within areas that could be directly or indirectly impacted by project-related activities, the qualified biologist should establish an appropriate buffer zone around each active nest. The appropriate buffer should be determined by the qualified biologist based on species, location, and the nature of the proposed activities. Project activities should be avoided within the buffer zone until each nest is deemed no longer active by a qualified biologist.

MM BIO-3 **Least Bell's Vireo Protocol Surveys.** Ground disturbance or vegetation removal activities within 500 linear feet of least Bell's vireo habitat from March 1 through July 15 are not authorized. Should minor project activities (i.e., removal of equipment) be required between March 15 to August 31, focused surveys following United States Fish and Wildlife Service (USFWS) protocol for least Bell's vireo shall be conducted. The physical extent of the survey area shall include all areas within 500 feet of project disturbance. Survey results shall be submitted in writing to the California Department of Fish and Wildlife (CDFW) for review. The Permittee shall not conduct ANY project activities within 500 linear feet of least Bell's vireo habitat from March 1 through July 15 if nesting birds are present. Nesting status will be determined by a Designated Biologist with expertise with the species in question, utilizing USFWS survey protocols and CDFW review of the nest monitoring data.

Least Bell's vireo falls under the "May Affect, but Not Likely to Adversely Affect" designation as defined in the Federal Endangered Species Act (FESA) Section 7(a)(2) due to permanent impacts to suitable southern cottonwood-willow riparian forest habitat. Therefore, a Federal consultation between the City of Orange and the USFWS is expected due to the modification of suitable habitat for least Bell's vireo, as currently planned and designed.

MM BIO-4 **Bat Construction Surveys.** A qualified bat biologist shall survey all suitable trees/vegetation within the project limits for bat roosts within 30 days prior to the start of project construction activities. If bats roosts are found within the project limits, the qualified bat biologist shall identify the bats to the species level and evaluate the roosts

and/or colony to determine its size and significance. Proposed work in areas with no suitable habitat shall not require a bat survey, as determined by the bat biologist.

MM BIO-5 **Tree Trimming and Removal.** To the greatest extent feasible, tree trimming/removal activities will be performed outside the bat maternity season (April 1–August 31) to avoid direct impacts to non-volant (flightless) young that may roost in trees or the bridge within the study area. This period also coincides with the typical bird nesting season. If trimming or removal of trees during the bat maternity season cannot be avoided, a qualified bat biologist will monitor tree trimming and removal activities.

MM BIO-6 **Night Work Lighting.** If night work (i.e., between dusk and dawn) is anticipated within 100 feet of trees where known bat roosting is confirmed, night lighting will be used only in areas of active work and will be focused on the direct area(s) of work and away from the roost entrances to the greatest extent practicable. This measure would minimize visual disturbance and allow bats to continue to utilize the remainder of the area for foraging and night roosting. If bats are showing signs of distress, as determined by the bat biologist, work activities shall be modified to prevent bats from abandoning their roost or altering their behavior.

Significance Determination: Potentially Significant Impact
Mitigation Measures: As noted in MMs BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, and BIO-6.
Significance Determination After Mitigation: Less than Significant With Mitigation Incorporated

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

In accordance with Section 1602 of the California Fish and Game Code, the California Department of Fish and Wildlife (CDFW) asserts jurisdiction over rivers, streams, and lakes, as well as any riparian vegetation associated with those features. Based on jurisdictional delineation analysis conducted for the project limits, no rivers or lakes are present within the project limits or buffer area, but two features that meet the definition of streams are present. These features consist of Santiago Creek and a tributary to Santiago Creek.

Santiago Creek is an earthen drainage located in the central portion of the project limits that perpendicularly crosses beneath Cannon Street and is tributary to the Santa Ana River. It conveys perennial flows of water from in the western direction where it flows into the Santiago Creek Recharge Basin.

A search of the CNDDB identified occurrences of ten special-status natural (i.e., plant) communities within 5 miles of the project limits:

- California Walnut Woodland;
- Riversidian Alluvial Fan Sage Scrub;
- Southern California Arroyo Chub;
- Santa Ana Sucker Stream;
- Southern Coast Live Oak Riparian Forest;
- Southern Coastal Salt Marsh;

- Southern Cottonwood Willow Riparian Forest;
- Southern Interior Cypress Forest, Southern Riparian Scrub;
- Southern Sycamore Alder Riparian Woodland; and
- Southern Willow Scrub.

Southern Cottonwood Willow Riparian Forest was the sole special-status natural community identified within the records search observed within the project limits; however, the Southern Cottonwood Willow Riparian Forest within the project limits has a high level of non-native species found throughout, and is considered disturbed. Therefore, no intact riparian or special-status species occur within the project limits. Further, no vegetation removal is planned within Santiago Creek Channel, where this special-status community is located, as part of the proposed project. Therefore, impacts to riparian or special-status natural communities would be less than significant under implementation of the proposed project. No mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The United States Army Corps of Engineers (USACE) regulates discharges of dredged or fill material into waters of the United States (WOTUS). These waters include wetland and non-wetland bodies of water that meet specific criteria.

The project limits were analyzed for the presence of wetland resources using the USFWS Wetlands Mapper. According to the BRA, Santiago Creek was found to exhibit characteristics indicative of wetlands, including hydric soils, hydrophytic vegetation, and wetland hydrology. Therefore, the wetland delineation procedures described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0)[19] and adopted by the State Water Resources Control Board (SWRCB) were implemented. Based on this methodology, it was determined that Santiago Creek consists of wetland WOTUS subject to USACE jurisdiction under Section 404 of the Clean Water Act (CWA). The unnamed tributary to Santiago Creek, mentioned in Response 4.4(b), was determined to be non-wetland waters of the United States/waters of the State and CDFW streambed.

The western portion of the project limits are within the County of Orange Central/Coastal Natural Community Conservation Plan (NCCP) Reserve System. No impacts to coastal sage scrub proposed during project activities; however, the proposed project would permanently impact 0.026 acre of disturbed southwestern cottonwood-willow riparian forest within wetland/riparian habitat within the Reserve System, which is not considered mitigated by the NCCP.

As recommended under the *Biological Resources Assessment* (April 2024) prepared for the proposed project, separate CWA Section 404 and 401 permits, and a CDFW Streambed Alteration Agreement

[19] United States Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), J.S. Wakeley, R.W. Lichvar, and C.V. Noble, eds. ERDC/EL TR 08 28. Vicksburg, MS: United States Army Engineer Research and Development Center.

are required due to these permanent impacts which would result in permanent vegetation removal and/or grubbing that would occur as a result of project implementation. Therefore, implementation of RCM BIO-1 mitigation is required which will require the development of CWA 404 and 401 permits, and a CDFW Streambed Alteration Agreement to comply with regulations set forth by the USACE. Therefore, with the implementation of Regulatory Compliance Measure (RCM) BIO-1, impacts to state or federally protected wetlands are less than significant.

RCM BIO-1 **Clean Water Act 401 and 404 Permits & CDFW Streambed Alteration Agreement.** Prior to the issuance of grading and construction permits, the City of Orange Department of Public Works shall obtain 401 and 404 permits, issued by USACE, and a CDFW Streambed Alteration Agreement due to the permanent impacts to disturbed southwestern cottonwood-willow riparian forest within wetland/riparian habitat associated with the County of Orange Central/Coastal Natural Community Conservation Plan (NCCP) Reserve System located within the project limits.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No mitigation is required, but adherence to RCM BIO-1 is required.
Significance Determination After Mitigation: Less Than Significant Impact

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Habitat linkages provide connections between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet still inadequate for others. Wildlife corridors are features that allow for the dispersal, seasonal migration, breeding, and foraging of a variety of wildlife species. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The Santiago Creek, which crosses below the project limits where Cannon Street transitions into a bridge, has the potential to support migratory fish species. However, the proposed project would not create any blockages to the flow of Santiago Creek, and therefore would not interfere with the potential migration of fish species within the waterway. As discussed in Response 4.4(a), the existing trees within the project limits may provide habitat suitable for nesting migratory birds, and approximately 33 trees would be removed as a result of the proposed project. Therefore, project implementation has the potential to impact active bird nests if tree removal occurs during the nesting season. However, the proposed project's implementation of MMs BIO-2 and BIO-3 would ensure that the proposed project would not adversely impact migratory bird species through the use of pre-construction nesting bird surveys and buffers.

The proposed project would provide improvements to the existing Cannon Street roadway and the addition of a new pedestrian bridge near the existing bridge. These improvements would generally occur within or adjacent to the existing footprint of development and would not create any new physical barriers to wildlife movement or nursing. Further, wildlife movement within the northern portion of the project limits is unlikely due to the developed nature of the surrounding residential neighborhoods.

With incorporation of MMs BIO-2 and BIO-3 as previously identified in this section, the proposed project would have less than significant impacts pertaining to the movement of native or migratory wildlife species.

Significance Determination: Potentially Significant Impact
Mitigation Measures: As noted in MMs BIO-2 and BIO-3.
Significance Determination After Mitigation: Less Than Significant Impact

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

Near the northern project limits, Cannon Street is lined with ornamental trees along both sides. As part of the proposed widening efforts, Cannon Street would be extended further to the west by approximately 9 feet. This widening would necessitate the removal of approximately 33 trees from the western edge of Cannon Street.

The Orange County Standard Plan for Parkway and Median Trees (Standard Plan) and Tree Preservation Ordinance are the primary local policies protecting biological resources, specifically trees. These are the primary measures by which impacts to existing trees that provide roosting and nesting habitat for native and migratory birds in the City of Orange are minimized.

The County's Standard Plan for Parkway and Median Trees applies to any tree planted within street right-of-way or within 6 feet of any structure within right-of-way. The Standard Plan requires that a landscape plan be prepared for each proposed improvement affecting street trees, and lists acceptable species and planting criteria to be adhered to. The proposed project would comply with all applicable policies and regulations set forth in the Standard Plan.

The City's Tree Preservation Ordinance is contained in Chapter 12.32, Tree Preservation, of the City's Municipal Code, which places restrictions on the action of tree removal and mandates that a permit must be received from the Director of Community Services prior to the removal of trees, which is incorporated into the proposed project as Regulatory Compliance Measure (RCM) BIO-2. With implementation of RCM BIO-2, as listed below, no trees would be removed from the project limits until a permit is issued, and any conditions attached to the permit would be followed.

In addition, the removal of street trees is subject to Chapter 12.28, Street Trees, of the City's Municipal Code. Specifically, Section 12.28.030 states the following:

> Every person planting or arranging for the planting of street trees shall obtain a permit required by this chapter from the Director of Public Works/City Engineer and perform the work in accordance with the specifications prepared by the Public Works Director/City Engineer;
>
> Every person removing or arranging for the removal of a street tree shall obtain a permit required by this chapter from the Director of Public Works/City Engineer and perform the work in accordance with the specifications prepared by the Public Works Director/City Engineer.

Therefore, all tree removal and planting activities proposed under the project would be subject to a permit and specifications set forth by the Director of Public Works/City Engineer, which would

minimize potential adverse effects of such activities. Compliance with the Standard Plan, Tree Protection Ordinance, and RCM BIO-2 would ensure that impacts to local biological resource protection regulations are less than significant.

Regulatory Compliance Measure:

RCM BIO-2 **Tree Removal Permit.** Prior to the issuance of grading permits, the City of Orange Public Works Department shall obtain a Tree Removal Permit, issued by the City of Orange (City) Director of Community Services, in accordance with Section 12.32 of the City's Municipal Code.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No mitigation is required, but adherence to RCM BIO-2 is required.
Significance Determination After Mitigation: Less Than Significant Impact

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

The Natural Communities Conservation Planning Act was enacted to encourage broad-based planning to provide for effective protection and conservation of the State's wildlife resources while continuing to allow appropriate development and growth.[20] Natural Community Conservation Plans (NCCPs) may be implemented that identify measures necessary to conserve and manage natural biological diversity within the planning area, while allowing compatible and appropriate economic development, growth, and other human uses. The County, in conjunction with State and federal resource agencies, local jurisdictions, utility companies, the Transportation Corridor Agencies (TCA), and major private landowners, prepared the Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) for the County of Orange Central-Coastal Subregion. The NCCP/HCP was approved, followed by execution of an Implementation Agreement, in 1996. The NCCP/HCP aims to conserve natural communities whose numbers have declined while accommodating compatible land uses.

The coastal California gnatcatcher, coastal cactus wren, and orange-throated whiptail lizard, all of which are currently on the federal list of threatened or endangered species, were designated as "target species" by the NCCP/HCP.[21]

According to the BRA, the land directly to the west of Cannon Street occurs within the NCCP Plan Boundary and is designated as part of the NCCP Reserve System, containing suitable "Target Species" habitat. However, the NCCP has mapped the portion of the project limits that is within the reserve system as an area of low habitat value/conservation value during the NCCP planning process, though specific reasons were not provided for the designation as low habitat value/conservation value. One potential reason may be that this land is highly fragmented and is adjoined by a substantial amount of

[20] California Research Bureau. 2001. Natural Community Conservation Planning (NCCP). March. Website: file:///C:/Users/OMattair/Downloads/NCCP%20The%20Origins%20of%20an%20Ambitious%20Experiment%20to%20Protect%20Ecosystems.pdf (accessed March 5, 2024).

[21] City of Orange. 2010. City of Orange General Plan Program Environmental Impact Report. March. Website: https://www.cityoforange.org/home/showpublisheddocument/240/637698173340500000 (accessed March 5, 2024).

residential development and/or has a relatively large percentage of non-native species within the existing vegetation communities.

The proposed project does not include vegetation removal activities with the potential to adversely impact coastal sage scrub or any other special-status wildlife species considered under the NCCP. Therefore, the proposed project would have less than significant impacts pertaining to conflicts with an adopted NCCP or other plans, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

4.5 CULTURAL RESOURCES

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

This section is based on the results of the Cultural Resources Record Search from the South Central Coastal Information Center (SCCIC) for the proposed Cannon Street Widening Project, dated May 18, 2023, and an archaeological field survey conducted on September 18, 2023. The record search was conducted to do the following: (1) establish the status and extent of previously recorded sites, surveys, and excavations in and adjacent to the project limits; and (2) note what site types might be expected to occur within the project limits based on the existing data from archaeological sites located within 0.25 mile of the project limits. The field survey consisted of an intensive pedestrian investigation of all areas of exposed ground surface, and was conducted in order to identify any visually apparent cultural resources within the project limits.

Impact Analysis

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

According to Figure 5.5-2, Historical Archaeological Sensitivity, in the Program Environmental Impact Report (PEIR), prepared for the City of Orange General Plan, the project limits do not include any Areas of Historical Sensitivity.[22] The Old Towne Orange District, which is located approximately 3.5 miles southwest of the project limits, is listed in the National Register of Historic Places (National Register).[23] Implementation of the proposed project would be contained within the site, and therefore, would not impact any area characterized as an historic place.

As previously stated, a record search was conducted at the SCCIC in order to determine whether any known cultural resources exist within the project limits or in close proximity to the project limits. According to the results of this records search, two historic resources have previously been identified within 0.5 mile of the project limits. The first resource is a concrete foundation, pad, and utility pole likely related to either citrus production or mining activity. This resource was determined to be ineligible for listing on the National Register or the California Register of Historical Resources

[22] City of Orange. 2010. City of Orange General Plan Program Environmental Impact Report. March. Website: https://www.cityoforange.org/home/showpublisheddocument/240/637698173340500000 (accessed February 20, 2024).

[23] City of Orange. Old Towne Orange. Website: https://www.cityoforange.org/our-city/visitor-information/old-towne-orange (accessed February 20, 2024).

(California Register) and is not listed on any historic property directories or inventories. The second resource is the Smith and Clark Brothers Ranch House and Grounds (also the Willard Smith House), which is listed on the National Register. This site is located approximately 0.3 mile west of the project limits. One prehistoric resource, an artifact scatter consisting of shell and lithic materials, was documented approximately 0.25 mile east of the project limits. Given their distances from the project limits, these historic and prehistoric resources would not be affected by the proposed project.

Archival research of the project limits indicates that the area surrounding the project limits remained undeveloped until around 1942, in which agricultural orchards began to appear on maps. These orchards continued to operate throughout the 1950s. The Cannon Street alignment first appeared in 1972 and was completed by 1980, and construction of the nearby residential neighborhoods had begun.

The project limits have been disturbed during historical period agricultural development as well as the development of the existing Cannon Street roadway. This previous development indicates that surficial deposits of the project limits will include Artificial Fill, which is unlikely to produce significant archaeological resources. Based on the previous level of disturbance of the project limits, the SCCIC search results, and observations during the pedestrian survey, no known historical resources are located within the project limits. Therefore, the proposed project would not cause a substantial adverse change in the significance of a historical resource. Impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

Orange County falls within the San Diego sub-region of the southern coast archaeological region of California.[24] Based on the SCCIC records search and Figure CR-2 of the City of Orange General Plan Cultural and Historic Preservation Element,[25] there are no known archaeological resources located within the project limits. As stated above in Response 4.5(a), several historic and prehistoric resources were identified within 0.5 mile of the project limits, but not within the actual project limits. Further, the project limits have been disturbed during historical period agricultural development as well as the development of the existing Cannon Street roadway. This previous development indicates that surficial deposits of the project limits will include Artificial Fill, which is unlikely to produce significant archaeological resources. An archaeological field survey was conducted on September 18, 2023, consisting of an intensive pedestrian investigation of all exposed ground surface areas. A majority of the project limits were developed and paved, aside from the portions of Santiago Creek next to the existing bridge overcrossing, consisting of an unpaved and paved lot. No cultural materials were observed during the survey.

[24] City of Orange. 2010. City of Orange General Plan Program Environmental Impact Report. March. Website: https://www.cityoforange.org/home/showpublisheddocument/240/637698173340500000 (accessed February 20, 2024).

[25] City of Orange. 2015. Orange General Plan Cultural Resources & Historic Preservation Element. December. Website: https://www.cityoforange.org/home/showpublisheddocument/196/637698172534300000 (accessed February 20, 2024).

Despite the lack of known archaeological resources within the project limits, the potential still exists for unknown cultural resources to be encountered during site preparation/grading activities. As previously stated, the proposed project would disturb approximately 0.62 acre of soil. Because the project limits are located in close proximity to the historic natural alignment of Santiago Creek, a freshwater source, and because the prehistoric resource recorded near the project limits indicated precontact human occupation in the region, an archaeological monitor shall be present full-time during the first 10 working days when excavation activities will extend below Artificial Fill deposits into native soil, as outlined in MM CUL-1, detailed below. To ensure that potential project impacts to unknown archaeological resources would be less than significant, cultural resources monitoring would be required, as outlined in MM CUL-1.

Mitigation Measure:

MM CUL-1 **Cultural Resources Monitoring and Accidental Discovery.** Prior to the commencement of ground-disturbing activities, and in adherence to the recommendations of the cultural resources records search results, the City of Orange Public Works Department shall retain, with approval of the City of Orange (City) Community Development Director, or designee, a qualified archaeological monitor. A monitoring plan shall be prepared by the archaeologist and implemented upon approval by the City. Prior to the commencement of ground-disturbing activities, the City of Orange Public Works Department shall also retain a Native American monitor to be approved by the City Community Development Director, or designee, after consultation with interested tribal and Native American representatives. Both monitors shall be present full-time on the project limits during the first 10 working days when excavation activities will extend below Artificial Fill deposits into native soil. If cultural materials are discovered during excavation, a qualified professional archaeologist shall assess the nature and significance of the find and determine if any additional study or treatment of the find is warranted. Additional studies could include, but would not be limited to, collection and documentation of artifacts, documentation of the cultural resources on State of California Department of Parks and Recreation Series 523 forms, or subsurface testing. If further monitoring is warranted, it shall continue until the monitoring archaeologist determines, based on field observations, that there is no likelihood of encountering intact archaeological cultural resources. If deemed appropriate by the archaeologist, subsequent monitoring may be reduced from full-time to part-time, or to spot-checking. Project personnel shall not collect or move any archaeological materials or human remains and associated materials. To the extent feasible, project activities shall avoid these deposits. Upon completion of any monitoring activities, the archaeologist shall prepare a report documenting the methods and results of monitoring activities. The final version of this report shall be submitted to the City of Orange Community Development Department, the South Central Coastal Information Center (SCCIC), and the State Historic Preservation Office, if required.

Significance Determination: Potentially Significant Impact
Mitigation Measures: As noted in MM CUL-1.
Significance Determination After Mitigation: Less than Significant With Mitigation Incorporated

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

No known human remains are present within the project limits, and there are no facts or evidence to support the idea that Native Americans or people of European descent are buried within the project limits. However, as described previously, buried and undiscovered archaeological remains, including human remains, have the potential to be present below the ground surface in portions of the project limits. Disturbing human remains could violate the State's Health and Safety Code, as well as destroy the resource. In the unlikely event that human remains are encountered during project grading, the proper authorities would be notified, and standard procedures for the respectful handling of human remains during the earthmoving activities would be adhered to. Construction contractors are required to adhere to California Code of Regulations (CCR) Section 15064.5(e), Public Resources Code (PRC) Section 5097, and Section 7050.5 of the State's Health and Safety Code. To ensure proper treatment of remains in the event of an unanticipated discovery of a burial, human bone, or suspected human bone, State law requires that all excavation or grading in the vicinity of the find halt immediately, the area of the find be protected, and the contractor immediately notify the County Coroner of the find. Compliance with these provisions, as specified in Regulatory Compliance Measure (RCM) CUL-1 below, would ensure that any potential impacts to unknown buried human remains would be less than significant by ensuring appropriate examination, treatment, and protection of human remains as required by State law.

No mitigation is required. However, RCM CUL-1 is a standard condition based on State law related to the discovery of human remains. This regulatory compliance measure is applicable to the proposed project and shall be incorporated to ensure that impacts related to unknown buried human remains are less than significant.

Regulatory Compliance Measure:

RCM CUL-1 **Human Remains.** In the event that human remains are encountered on the project limits, work within 50 feet of the discovery shall be redirected and the County of Orange (County) Coroner notified immediately consistent with the requirements of California Code of Regulations (CCR) Section 15064.5(e). State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. If the remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC), which shall determine and notify a Most Likely Descendant (MLD). With the permission of the property owner, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and non-destructive analysis of human remains and items associated with Native American burials. Consistent with CCR Section 15064.5(d), if the remains are determined to be Native American and an MLD is notified, the City shall consult with the MLD as identified by the NAHC to develop an agreement for treatment and disposition of the remains. Prior to the issuance of grading permits, the Director of the City Community Development Department, or designee, shall verify that all grading plans specify the requirements of CCR Section 15064.5(e), State Health and Safety Code Section 7050.5, and PRC Section 5097.98, as stated above.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No mitigation is required, but adherence to RCM CUL-1 is required.
Significance Determination After Mitigation: Less Than Significant Impact

4.6 ENERGY

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

Electric Power. The project limits are within the service territory of Southern California Edison (SCE), an independently owned utility. SCE provides electricity to more than 15 million people in a 50,000-square-mile area of Central, Coastal, and Southern California.[26] According to the California Energy Commission (CEC), total electricity consumption in the SCE service area in 2022 was 85,870 gigawatt-hours (GWh). Total electricity consumption in Orange County in 2022 was 20,243.7 GWh (20,243,721,856 kilowatt hours [kWh]).[27]

Natural Gas. Natural gas is provided in the City by the Southern California Gas Company (SoCalGas). SoCalGas provides natural gas services to around 21.1 million consumers across 500 communities.[28] According to the CEC, total electricity consumption in the SCE service area in 2022, the most recent year available, was 85,870 GWh. Total electricity consumption in Orange County in 2022 was 20,243.7 GWh (20,243,721,856 kWh).[29]

Gasoline. 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. According to the most recent data available, total gasoline consumption in California was 319,514 thousand barrels or 1,613.5 trillion British thermal units (BTU) in 2021.[30] Of the total gasoline consumption, 302,881 thousand barrels or 1,529.5 trillion BTU were consumed for transportation.[31] Based on fuel consumption obtained from EMFAC2021, 155.9 million gallons of diesel and 1.2 billion gallons of gasoline will be consumed from vehicle trips in Orange County in 2023.

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26 Southern California Edison (SCE). 2020. About Us. Website: https://www.sce.com/about-us/who-we-are (accessed April 10, 2024).

27 California Energy Commission (CEC). 2019. California Energy Consumption Database. Website: http://www.ecdms.energy.ca.gov/ (accessed April 10, 2024).

28 Southern California Gas (SoCalGas). n.d. Company Profile. Website: https://www.socalgas.com/about-us/company-profile (accessed March 13, 2024).

29 California Energy Commission (CEC). 2019. California Energy Consumption Database. Website: http://www.ecdms.energy.ca.gov/ (accessed March 13, 2024).

30 A British thermal unit is defined as the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

31 U.S. Energy Information Administration. 2020. California State Profile and Energy Estimates. Table F3: Motor gasoline consumption, price, and expenditure estimates, 2017. Website: eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_mg.html&sid=CA (accessed April 10, 2024).

Impact Analysis

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

The proposed project would not increase the demand for electricity and gasoline when compared to existing conditions on the project limits. The discussion and analysis provided below is based on the data included in the California Emissions Estimator Model version 2022.1 (CalEEMod) output, which is included as Appendix A to this IS/MND.

Construction-Period Energy Use. The anticipated construction schedule assumes that the proposed project would be built over approximately 8 months. Project construction activities would include grubbing and land clearing, grading and excavation, drainage, utilities, sub-grade, trenching, and paving.

Construction and demolition activities would require energy for the manufacture and transportation of construction materials, preparation of the site for grading and building activities, and development of the project limits. All or most of this energy would be derived from non-renewable resources. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities. Construction of the proposed project would not involve the consumption of natural gas because none of the construction-related equipment would be powered by natural gas.

Construction activities are not anticipated to result in an inefficient use of energy because gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the proposed project. Energy usage within the project limits during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Therefore, construction energy impacts would be less than significant, and no mitigation would be required.

Operational Energy Use. Operational energy use is typically associated with natural gas use, electricity consumption, and fuel used for vehicle trips associated with a project. As previously discussed, the proposed project consists of roadway improvements, including road widening, utility relocation, median modifications, and the construction of a new pedestrian bridge.

As discussed in Section 4.17, Transportation, upon completion of construction activities, operation of the proposed project would not adversely affect existing traffic volumes and no additional trips are anticipated due to implementation of the proposed project; as such, the proposed project is not expected to generate a substantial increase in fuel used for vehicle trips. Consequently, the project would also not result in a substantial source of energy consumption. Therefore, implementation of the proposed project would not result in additional energy consumption, and the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Impacts would be less than significant, and no mitigation measures would be necessary.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

As indicated above, energy usage within the project limits during construction would be temporary in nature. In addition, once completed, the proposed project would not result in substantially increased energy consumption beyond existing conditions. As such, the proposed project would not conflict with California's energy conservation plans as described in the CEC's 2023 Integrated Energy Policy Report.[32] As shown above, the proposed project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and would not result in any irreversible or irretrievable commitments of energy. Impacts would be less than significant, and no mitigation measures would be necessary.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

[32] California Energy Commission (CEC). 2024. *2023 Integrated Energy Policy Report*. February. Website: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report (accessed April 10, 2024).

4.7 GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☒	☐	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

This section is based on the Foundation Report prepared for the proposed project by Earth Mechanics, Inc. in January 2024, as well as the Paleontological Resources Assessment (Paleo Assessment) prepared for the proposed project by LSA Associates, Inc. in April 2024, which are provided as Appendices C and D to this IS/MND, respectively.

Impact Analysis

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or

based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

The project limits are located within Southern California, which is considered a seismically active region. According to the Paleo Assessment, the project limits are located within the Peninsular Ranges Geomorphic Province, a 900-mile-long northwest-southeast trending structural block with similarly trending faults that extends from the Transverse Ranges in the north to the tip of Baja California in the south and includes the Los Angeles Basin. According to the City of Orange General Plan Public Safety Element, there are no known active faults or Alquist-Priolo Fault Zones within the City limits.[33] Further, the Foundation Report prepared for the proposed project states that the California Geological Survey has not identified any major faults traversing the project limits, and as such, the risk of ground surface rupture within the project limits would be low.

No known clustering or alignment of earthquakes has occurred in proximity to the site. There have been fewer recorded earthquakes in the Tustin Plain-western Santa Ana Mountains region, which contains the project limits, than anywhere else in the Los Angeles Basin area. This apparent lack of earthquake activity suggests that the project limits are relatively tectonically stable and suggests that there are no unrecognized active faults at the site.

As such, surface fault rupture, during or as a consequence of seismic activity, is not anticipated to occur within the project limits. Therefore, the proposed project would not expose people or structures to substantial adverse effects involving the rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

ii. Strong seismic ground shaking?

As stated in Response 4.7(a), the project limits are not located within a designated Alquist-Priolo Earthquake Fault Zone. According to the Foundation Report, there are no active faults or Alquist-Priolo Fault Zones within the project limits. However, the project limits are located in the highly seismic region of Southern California within the influence of several fault systems.

According to the Foundation Report, the nearest major active or potentially active surface faults within the project vicinity are the Puente Hills blind thrust fault (approximately 8-10 miles south of project limits), the Whittier-Elsinore Fault (6 miles northeast of the proposed bridge structure), the Newport Inglewood Structural Zone (12.4 miles southwest of the proposed bridge structure), Yorba Linda Trend Seismicity Zone (4.3 miles northwest of the proposed bridge structure), and the El Modeno-Peralta Hills Faults. The closest of these faults to the project limits is the El Modeno Fault, which is located approximately 1,200 feet northeast of the proposed pedestrian bridge. In addition, the Peralta Hills Fault is located approximately 1 mile north of the proposed pedestrian bridge. The project limits could be subject to strong seismic ground shaking in the event of seismic activity of these nearby faults. The

[33] City of Orange. 2015. Orange General Plan Public Safety Element. Website: https://www.cityoforange.org/home/showpublisheddocument/214/637698172567530000 (accessed February 20, 2024).

degree of seismic ground shaking would depend on several factors, including the fault location, its distance from the City and project limits, and the earthquake magnitude.

The proposed project would improve an existing roadway and therefore would not introduce any new inhabitable structures that would face risks of strong seismic ground shaking. The proposed project would include the development of a new pedestrian bridge, which would be required to adhere to applicable seismic regulations set forth in the Foundation Report. Further, the proposed project would incorporate the construction considerations, seismic design recommendations, and pavement structural section design recommendations set forth in the Foundation Report to ensure that the roadway improvements are designed in a manner that would reduce structural damage in the event of strong seismic ground shaking, as described in MM GEO-1, below. With incorporation of MM GEO-1, impacts related to the risk of loss, injury, or death involving strong seismic ground shaking would be less than significant.

Mitigation Measure:

MM GEO-1 **Compliance with the Recommendations in the Foundation Report.** Prior to the issuance of demolition or grading permits, the City of Orange (City) Public Works Department shall verify that requirements and recommendations in the Foundation Report have been appropriately incorporated into the project plans. All grading operations and construction shall be conducted in conformance with all of the recommendations included in the Foundation Report, which was prepared by Earth Mechanics, Inc., titled *Foundation Report Cannon Street Widening Improvement Project Orange, California* (Foundation Report) (January 25, 2024) as well as any Final Geotechnical Reports prepared for the project. All recommendations found in the Foundation Report shall be incorporated into project design and shall include, but not be limited to:

- Seismic design recommendations
- Foundation type recommendations
- Lateral pile solutions
- Bridge abutment wall earth pressures
- Approach embankments
- Pavement structural section design
- Construction considerations

Additional site construction plans, including grading plans, shall be reviewed by the project Geotechnical Consultant prior to construction to check for conformance with all of the recommendations of the Foundation Report. Design, grading, and construction shall be performed in accordance with the requirements of the applicable seismic standards identified in the Foundation Report, as well as the recommendations of the project Geotechnical Consultant as summarized in the Foundation Report subject to review by the Public Works Department, prior to the start of grading activities.

Significance Determination: Potentially Significant Impact
Mitigation Measures: As noted in MM GEO-1.
Significance Determination After Mitigation: Less Than Significant Impact

iii. Seismic-related ground failure, including liquefaction?

Liquefaction is caused by sudden temporary increases in pore water pressure due to seismic densification or other displacement of submerged granular soils. Layers of loose sand and sandy silt may, therefore, be subject to liquefaction if these materials are or were to become submerged and are also exposed to strong seismic ground shaking. Seismic ground shaking of relatively loose granular soils that are saturated or submerged can cause the soils to liquefy and temporarily behave as a dense fluid. This loss of support can produce local ground failure such as settlement or lateral spreading that may damage overlying improvements. Liquefaction commonly occurs when three conditions are present simultaneously: (1) high groundwater; (2) relatively loose, cohesion-lacking (sandy) soil; and (3) earthquake-generated seismic waves.

Boreholes dug by Earth Mechanics, Inc. during preparation of the Foundation Report encountered groundwater at elevations approximately 16 to 25 feet below grade within the project limits. According to the Foundation Report, results of the analysis of the saturated, coarse-grained soils below the design groundwater elevation indicated that liquefaction potential does not exist within the project limits. As such, impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

iv. Landslides?

Landslides and mudslides include the movement of soils, rocks, and other man-made or natural materials downslope, which can be caused by an earthquake or heavy rainfall. Landslides are most common where slopes are steep, soils are weak, and groundwater is present. The project limits are relatively flat, with no slopes on site. According to Figure PS-1, Environmental and Natural Hazard Policy Map, of the City's General Plan Public Safety Element,[34] the project limits do not fall within an area designated as susceptible to landslide hazard areas. Additionally, the project limits are not located within a California DOC Seismic Hazards Program recognized landslide zone.[35]

The proposed project would not introduce any new topographical features or elements that would increase the risk of landslide within the project vicinity. In addition, as previously stated, the project limits are generally flat. Further, the proposed project includes improvements of an existing roadway and would not include the construction or rehabilitation of any structures for human occupancy. Therefore, the potential for the proposed project to expose people or structures to potential substantial adverse effects related to landslides would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less than Significant Impact

[34] City of Orange. 2015. Orange General Plan Public Safety Element. Website: https://www.cityoforange.org/home/showpublisheddocument/214/637698172567530000 (accessed April 11, 2024).
[35] California Department of Conservation (DOC). 2021. California Earthquake Hazards Zone Application. September. Website: https://www.conservation.ca.gov/cgs/geohazards/eq-zapp (accessed April 11, 2024).

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

The primary concern in regard to soil erosion or loss of topsoil would be during the construction phase of the proposed project. Grading and earthwork activities associated with the proposed modifications to Cannon Street could temporarily expose soils to potential short-term erosion by wind and water. However, since the project limits are relatively flat, potential soil erosion can be controlled via implementation of standard construction erosion control practices such as the use of water to prevent fugitive dust and other construction best management practices (BMPs) required pursuant to the Construction General Permit. Because the project limits surfaces would not be prone to erosion with implementation of erosion control practices, the proposed project would not result in substantial soil erosion or the loss of topsoil. Furthermore, the exposure of soils during construction would be short-term and subject to requirements established by the National Pollutant Discharge Elimination System (NPDES), which is discussed further in Section 4.10, Hydrology and Water Quality, of this IS/MND.

Upon development, the proposed project would result in a slight net increase in pervious area of approximately 0.1 acre, which could lead to a slight decrease in stormwater runoff compared to existing conditions. Further, stormwater runoff generated by the proposed project would continue to drain to existing drainage features as described in Section 4.10, Hydrology and Water Quality. The proposed project's implementation would not substantially increase the volume of runoff from the project limits because the proposed project would result in an increase in landscaped pervious surface area that would capture stormwater runoff. Incorporation of Regulatory Compliance Measures (RCM) HYD-1 through RCM HYD-5, as discussed further in Section 4.10, would minimize the volume of runoff within the project limits that could potentially contribute to erosion. Therefore, direct and indirect impacts related to erosion and loss of topsoil would be less than significant, and no mitigation would be required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No mitigation is required, but adherence to RCM HYD-1 through RCM HYD-5 is required to reduce impacts to water quality, including soil erosion and siltation.
Significance Determination After Mitigation: Less Than Significant Impact

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

As discussed in the Foundation Report, the available subsurface information indicates that the site is underlain by alluvial deposits and bedrock. The alluvial deposits generally consist of silty sand and clayey sand, while the bedrock generally consists of highly weathered palagonite tuff volcanics. As discussed in Response 4.7(a)(iv), there are no landslide zones close to or within the project limits, and the project limits are generally flat.

As discussed in Response 4.7(a)(iii), there is low potential for liquefaction within the project limits, and liquefaction is not considered a concern within the project limits. Lateral spreading involves the lateral movement of earth materials due to ground shaking. Lateral spreading is generally caused by the liquefaction of soils with gentle slopes. Because liquefaction is related to settlement and lateral spreading, the potential for either occurrence would also be considered low. Overpumping and excessive groundwater withdrawal have not occurred within the project limits, and the proposed project does not include an oil, gas, or water pump on site and none are located near the project limits; therefore, subsidence is not considered a potential constraint or a potentially significant impact of the proposed project.

However, the project would be required to implement MM GEO-1, as detailed in Response 4.7(a)(ii), which requires that the project be designed in accordance with the recommendations of the Foundation Report, which would reduce the proposed project's susceptibility to ground stability risks. With implementation of MM GEO-1, potentially significant impacts related to unstable soils or geologic units that could result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse would be reduced to a less than significant level.

Significance Determination: Potentially Significant Impact
Mitigation Measures: As noted in MM GEO-1.
Significance Determination After Mitigation: Less Than Significant Impact

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Expansive soils are characterized by their ability to undergo substantial volume changes (shrink or swell) due to variations in moisture content as a result of precipitation, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors. Expansive soils contain types of clay minerals that occupy considerably more volume when they are wet or hydrated than when they are dry or dehydrated. Volume changes associated with changes in the moisture content of near-surface expansive soils can cause uplift or heave of the ground when they become wet or, less commonly, cause settlement when they dry out.

Based on the Foundation Report prepared for the proposed project, the project limits are underlain by alluvial deposits generally consisting of silty sand and clayey sand, while the bedrock generally consists of highly weathered palagonite tuff volcanics. Therefore, the soils underlying the project limits consist of granular materials and are expected to have very low to medium expansion potential. The Foundation Report also specifies structural design measures for the roadway modifications and proposed pedestrian bridge that would reduce the proposed project's susceptibility to soil expansion risks, which the proposed project would adhere to pursuant to MM GEO-1, as detailed in Response 4.7(a)(ii). Therefore, implementation of MM GEO-1, which requires project compliance with the recommendations in the Foundation Report, would reduce the potential impacts from expansive soils to a less than significant level.

Significance Determination: Potentially Significant Impact
Mitigation Measures: As noted in MM GEO-1.
Significance Determination After Mitigation: Less Than Significant Impact

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

The project would not use septic tanks or alternative methods for disposal of wastewater into subsurface soils. The entire City is currently served by an existing sewer system; as such, there is no need for septic tanks or other alternative wastewater systems. The proposed project would connect to the existing public wastewater infrastructure. Therefore, the proposed project would not result in any impacts related to septic tanks or alternative wastewater disposal methods. No mitigation is required.

The proposed project consists of improvements to the existing roadway and does not include the construction of, or connections to, a septic or alternative wastewater disposal system. Therefore, the

proposed project would not result in impacts related to the soil's capability to adequately support the use of septic tanks or alternative wastewater disposal systems, and no mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

According to the County of Orange General Plan, the project limits are located within the Northern Santa Ana Mountains general area of paleontological sensitivity.[36]

In order to evaluate the potential presence of paleontological resources within the project limits, a Paleontological Resources Assessment was prepared for the proposed project on April 2024. To support the preparation of this assessment, geologic maps of the project limits were consulted, relevant geological and paleontological literature were reviewed to determine the geological makeup of the project limits and any known fossils in the region, and a search of the Natural History Museum of Los Angeles County (NHMLA) was conducted in order to determine the status and extent of previously recorded paleontological resources within and surrounding the project limits. In addition, a pedestrian field survey of the project limits was conducted on February 23, 2024.

Results of the literature review indicate that the proposed project limits are underlain by the following:

- Artificial Fill, which has no paleontological sensitivity;
- Young Alluvial Fan Deposits, which have low paleontological sensitivity from the surface to a depth of 10 feet and high paleontological sensitivity below that mark;
- Old Alluvial Fan Deposits, Unit 3, which have high paleontological sensitivity;
- El Modeno Volcanics, Tuff and Tuff Breccia, which are igneous rocks and therefore have no paleontological sensitivity; and
- Sespe and Vaqueros Formations, Undifferentiated, both of which have high paleontological sensitivity.

The fossil locality search through the NHMLA indicated that no fossil localities are present within the project limits.[37] However, the search noted several fossil localities near the project limits from geologic units within or similar to those found within the project limits. LACM VP 1652, located near Rio Vista Avenue south of Lincoln Avenue, yielded remains of sheep (*Ovis*) from unknown Pleistocene age sediments. LACM VP localities 6927-6930 are all located in the Peralta Hills northeast of Serrano Avenue and Cannon Street within the undifferentiated Sespe and Vaqueros Formations. Fossils found from these localities include horse relative (*Parahippus*), unidentified artiodactyl (*Artiodactyla*), pig-

[36] County of Orange. 2012. Orange County General Plan. Website: https://ocds.ocpublicworks.com/service-areas/oc-development-services/planning-development/codes-and-regulations/general-plan (accessed February 20, 2024).

[37] Biewer, Jacob. 2024. *Paleontological Analysis of the Cannon Street Widening Project, City of Orange, Orange County, California.* April 12, 2024.

like mammal (*Tayassuidae*), camel family (*Camelidae*), oreodont (*Merycoidodontidae*), weasel family (*Mustelidae*), and rabbit and hare family (*Leporidae*). A copy of the fossil locality search results letter is included in the Paleo Assessment, provided as Appendix D to this IS/MND.

Based on the findings presented in the Paleontological Resources Assessment prepared for the proposed project, the potential exists for the proposed project to impact scientifically significant paleontological resources due to the presence of soils within the project limits with high paleontological sensitivity. To ensure that potential impacts to undiscovered paleontological resources remain less than significant, preparation of a monitoring program, monitoring of construction activities, appropriate treatment of newly discovered resources, and preparation of a final monitoring report would be required, as outlined in the following MM GEO-2:

Mitigation Measures:

MM GEO-2 **Paleontological Resources Impact Mitigation Program (PRIMP).** A paleontologist who meets the qualifications established by the Society of Vertebrate Paleontology (SVP) shall be retained to develop a Paleontological Resources Impact Mitigation Program (PRIMP) for this project. The PRIMP shall be consistent with the standards of the SVP and include the methods that will be used to protect paleontological resources that may exist within the project limits, as well as procedures for monitoring, fossil preparation and identification, curation into a repository, and preparation of a report at the conclusion of grading. Paleontological monitoring and the preparation of a Report of Findings will be included as part of the PRIMP in order to monitor excavation and grading activities in deposits with high paleontological sensitivity (i.e., Old Alluvial Fan Deposits, Unit 3 and the Sespe and Vaqueros Formations, Undifferentiated) shall be monitored by a qualified paleontological monitor following a PRIMP. No monitoring is required for excavations in deposits with no or low paleontological sensitivity.

If paleontological resources are encountered during the course of ground disturbance, the paleontological monitor shall have the authority to temporarily redirect construction away from the area of the find. In the event that paleontological resources are encountered when a paleontological monitor is not present, work in the immediate area of the find shall be redirected, and the paleontologist or paleontological monitor shall be contacted to assess the find for scientific significance. If determined to be scientifically significant, the fossil shall be collected from the field.

Collected resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent collections of a museum repository. At the conclusion of the monitoring program, a Report of Findings shall be prepared to document the results of the monitoring program.

Significance Determination: Potentially Significant Impact
Mitigation Measures: As noted in MM GEO-2.
Significance Determination After Mitigation: Less Than Significant Impact

4.8 GREENHOUSE GAS EMISSIONS

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

Technical Background

The analysis presented in the following section is based upon the Air Quality and Greenhouse Gas Emissions Technical Memorandum (AQ/GHG Memo) prepared for the proposed project, which involved emissions modeling using the California Emissions Estimator Model version 2022.1 (CalEEMod) computer program. The AQ/GHG Memo is included within this IS/MND as Appendix A.

Greenhouse Gases (GHGs) are present in the atmosphere naturally, are released by natural sources, or form from secondary reactions taking place in the atmosphere. Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. Although manmade GHGs include naturally occurring GHGs such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), some gases like hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF_3), and sulfur hexafluoride (SF_6) are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e).

State CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting." Currently, there is no Statewide GHG emissions threshold that has been used to

determine the potential GHG emissions impacts of a project. Threshold methodology and thresholds are currently developed and revised by air districts in California.

GHG Thresholds for Construction and Operational Emissions

To provide guidance to local lead agencies on determining significance for GHG emissions in their California Environmental Quality Act (CEQA) documents, the South Coast Air Quality Management District (SCAQMD) convened a GHG CEQA Significance Threshold Working Group (Working Group). The Working Group has identified a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant. For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, the SCAQMD requires an assessment of GHG emissions. The SCAQMD is using a "bright-line" screening-level threshold of 3,000 metric tons (MT) of CO_2e annually for commercial land use types. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact related to GHG emissions.

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

Individual GHGs have varying global warming potentials and atmospheric lifetimes. Because it is not possible to tie specific GHG emissions to actual changes in climate, this evaluation focuses on the project's emissions of GHGs. CO_2e is a consistent methodology for comparing GHG emissions because it normalizes various GHGs to the same metric. GHG emissions are typically measured in terms of MT CO_2e. Therefore, for the purpose of this technical analysis, the concept of CO_2e is used to describe how much GCC a given type and amount of GHG may cause, using the functionally equivalent amount or concentration of CO_2 as the reference.

The City of Orange does not currently have formal GHG emissions reduction plans or recommended emissions thresholds for determining significance associated with GHG emissions from development projects. However, the City Community Development Department has provided a Guidance memorandum on how to address GHG emissions in CEQA documents for which the City is the Lead Agency. In addition, the City published guidance for GHG emissions analysis in CEQA documents.

In its Guidance for Greenhouse Gas Emissions Analysis, the City of Orange accepts the "Tier III" quantitative interim significance thresholds recommended by the SCAQMD for commercial, industrial, mixed-use, and industrial development projects as follows:

- Industrial Projects—10,000 metric tons of carbon dioxide equivalents (MT CO_2e) per year

- Commercial, Residential, and Mixed-Use Projects (including industrial parks, warehouses, etc.)—3,000 MT CO_2e per year.

Impact Analysis

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

To quantify GHG emissions, LSA utilized CalEEMod, Version 2022.1 to generate the quantitative output changes in air quality and GHG emissions based on the proposed project widening. As discussed further in Section 4.17, Transportation, upon completion of construction activities, operation of the proposed project would not result in an induced travel demand and would not lead to a substantial increase in vehicle travel. The proposed project would add an additional through lane in one direction and widen sections of the roadway, thus improving the level of service and reducing delay. These changes are not expected to generate new vehicular traffic trips.

Construction Greenhouse Gas Emissions. Construction activities associated with the proposed project would produce combustion emissions from various sources. Construction would emit GHGs through the operation of construction equipment and from worker and builder supply vendor vehicles for the duration of the approximately 250-day construction period. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, the fueling of heavy equipment emits CH_4. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As indicated above, SCAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are required to quantify and disclose GHG emissions that would occur during construction. The SCAQMD then requires the construction GHG emissions to be amortized over the life of the project (which is defined as 30 years), added to the operational emissions, and compared to the applicable interim GHG significance threshold tier. Based on CalEEMod, it is estimated that the project would generate 1,767.2 MT CO_2e during construction of the project. When amortized over the 30-year life of the project, annual emissions would be 58.9 MT CO_2e. Construction emissions are temporary and would cease to occur after the construction period; therefore, the proposed project would not result in the generation of substantial GHG emissions during construction. Therefore, construction activities would not generate a significant amount of GHG emissions. Table 4.8.A, below, further details the different pollutant emissions that are expected to be emitted within the project limits during construction. Construction impacts would be less than significant, and mitigation is not required.

Table 4.8.A: Project Construction Greenhouse Gas Emissions

Source	Pollutant Emissions (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
On-Site Emissions	87.6	95.1	6.5	3.9
Localized Significant Threshold	**183.0**	**1,253.0**	**13.0**	**7.0**
Significant?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (April 2024).
Note: Source Receptor Area 17, based on a 5.0-acre construction disturbance daily area, at a distance of 82 feet from the project boundary.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Operational Greenhouse Gas Emissions. Long-term GHG emissions are typically generated from mobile sources (e.g., cars, trucks, and buses), area sources (e.g., maintenance activities and landscaping), and indirect emissions from sources associated with energy consumption.

As described previously in Section 2.0, Project Description, the proposed project will widen the roadway to accommodate a third northbound lane on Cannon Street to improve traffic operations. Furthermore, the proposed project would improve pedestrian and bicyclist facilities by constructing a new bridge just west of the existing vehicular bridge.

As discussed in the *Proposed Improvements to Cannon Street Traffic Assessment Memorandum* (Traffic Assessment Memo)[38] prepared for the proposed project by LSA in October 2024 (included as Appendix F to this IS/MND), upon completion of construction activities, operation of the proposed project would not result in an induced travel demand and would not lead to a substantial increase in vehicle travel. The proposed project would add an additional through lane in one direction and widen sections of the roadway, thus improving the level of service and reducing delay. These changes are not expected to generate new vehicular traffic trips. Additionally, the proposed project would improve conditions for pedestrians and cyclists (widening of the west side of Cannon Street where pedestrian and bicycle facilities narrow and providing a new bridge over Santiago Creek). As such, the proposed project would not result in an increase in the generation of vehicle trips or VMT that would result in an increase GHG emissions.

Utilities, traffic signals and street lighting would be relocated outside the project limits, as necessary. Therefore, the proposed project would also not be a substantial source of energy, area waste, or water source emissions and would not generate GHG emissions that would have a significant impact on the environment. Operational impacts would be less than significant, and mitigation is not required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

The City, as a lead agency, may assess the significance of GHG emissions by determining a project's consistency with a local GHG reduction plan that qualifies under Section 15183.5 of the *State CEQA Guidelines*. The City of Orange has not adopted a GHG reduction plan. In addition, the City has not completed the GHG inventory, benchmarking, and goal-setting process required to identify a reduction target and to take advantage of the streamlining provisions contained in the CEQA Guidelines amendments adopted for Senate Bill (SB) 97. Since no other local or regional climate action plan is in place, the project is assessed for its consistency with the California Air Resources Board's (CARB) adopted Scoping Plan and the 2024 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), also known as Connect SoCal 2024. This would be achieved with an assessment of the project's compliance with the Scoping Plan and SCAG Connect SoCal 2024 measures.

[38] LSA Associates, Inc. (LSA). 2024. *Proposed Improvements to Cannon Street Traffic Vehicle Miles Traveled Memo.* October 2024.

In 2008, CARB approved a Climate Change Scoping Plan as required by AB 32. The Climate Change Scoping Plan proposed a "comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health." The 2008 Climate Change Scoping Plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms (e.g., a cap-and-trade system), and an Assembly Bill (AB) 32 implementation fee to fund the program. The 2022 Scoping Plan[39] was approved in December 2022 and assesses progress toward the statutory 2030 target while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

On April 4, 2024, SCAG adopted *Connect SoCal: 2024 Regional Transportation Plan/Sustainable Communities Strategy* (Connect SoCal 2024).[40] In general, Connect SoCal 2024 outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce VMT from automobiles and light-duty trucks and thereby reduce GHG emissions from these sources. For the SCAG region, the CARB has set GHG reduction targets at 8 percent below 2005 per-capita emissions levels by 2020 and 19 percent below 2005 per capita emissions levels by 2035. Connect SoCal 2024 lays out a strategy for the region to meet these targets. Overall, Connect SoCal 2024 is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high-quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles.[41] However, Connect SoCal 2024 does not require that local General Plans, Specific Plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

Overall, GHG emissions released during construction of the proposed project are estimated to be minimal and would not be cumulatively considerable. Once constructed, operational emissions would be similar to existing conditions. Therefore, implementation of the proposed project would not conflict with the State's GHG emissions reductions objectives embodied in the 2022 Scoping Plan and Connect SoCal 2024 and is also consistent with State-level plans. Less than significant impacts would result from the proposed project, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

39 California Air Resources Board (CARB). 2022. *2022 Scoping Plan Update*. May 10. Website: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf (accessed December 2023).

40 Southern California Association of Governments (SCAG). 2024. *Connect SoCal: Regional Transportation Plan/Sustainable Communities Strategy*. April 4. Website: https://scag.ca.gov/sites/main/files/file-attachments/23-2987-connect-socal-2024-final-complete-040424.pdf?1714175547 (accessed July 18, 2024).

41 Ibid.

4.9 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Impact Analysis

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

Hazardous materials are chemicals that could potentially cause harm during an accidental release or mishap, and are defined as being toxic, corrosive, flammable, reactive, and an irritant or strong sensitizer.[42] Hazardous substances include all chemicals regulated under the United States Department of Transportation's (USDOT) "hazardous materials" regulations and the United States Environmental Protection Agency (USEPA) "hazardous waste" regulations. Hazardous wastes require special handling and disposal because of their potential to damage public health and the environment. The probable frequency and severity of consequences from the routine transport, use, or disposal of hazardous

[42] A "sensitizer" is a chemical that can cause a substantial proportion of people or animals to develop an allergic reaction in normal tissue after repeated exposure to a chemical (United States Department of Labor 2017).

materials are affected by the type of substance, the quantity used or managed, and the nature of the activities and operations.

The proposed project is a roadway improvement project and would not involve the routine transport, use, or dispose of hazardous materials. No manufacturing, industrial, or other uses utilizing large amounts of hazardous materials would occur within the project limits. Operations of the proposed project would be limited to vehicular use of the roadway, which would involve minimal amounts of hazardous materials.

During construction of the proposed project, hazardous materials such as fuel, lubricants, paint, sealants, and adhesives would be transported and used at the project limits. The proposed project would be required to comply with federal, State, and local regulations regarding the transportation, use, and disposal of hazardous materials, including compliance with appropriate pollution prevention control practices in accordance with the current edition of the "Green Book" Standard Specifications for Public Works Construction and the provisions of Section A-8. Further, pursuant to requirements set forth in the City of Orange LIP, the proposed project would be required to implement Erosion and Sediment Control Plans (ESCPs). These requirements are specified in RCM HYD-1. Compliance with existing regulations and implementation of ESCPs during construction would ensure that potential impacts associated with hazardous material use, transport, and disposal are considered less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The potential for releasing hazardous materials into the environment would be limited to construction of the proposed project as well as vehicles on the roadway during operations. As previously stated, compliance with existing regulations and implementation of the ESCPs pursuant to RCM HYD-1 would reduce the potential for the release of hazardous materials during construction of the proposed project. Regardless, if a hazardous release were to occur, it would not be anticipated to result in a significant hazard to the public, surrounding land uses, or environment due to the small quantities of these materials associated with construction activities.

The potential associated with vehicular use of the roadway exists under current conditions and would not be substantially greater under the proposed project. Vehicles and trucks may transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources. However, transport of hazardous materials is subject to strict regulations established by local police and fire departments trained in emergency response procedures for safely responding to accidental spills of hazardous substances on public roads, which further reduces impacts. Therefore, impacts of the proposed project associated with hazards from reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be similar to existing conditions and are considered less than significant.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required

Significance Determination After Mitigation: Less Than Significant Impact

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

The proposed roadway improvements would not produce hazardous emissions or handle a significant amount of acutely hazardous materials, substances, or wastes during either construction or operations. The nearest school to the project limits is Linda Vista Elementary School, which is located approximately 0.14 mile south of the project limits at 1200 N. Cannon Street. As discussed in Response 4.9(a), the proposed project is not anticipated to release hazardous emissions or handle acutely hazardous materials, substances, or wastes in significant quantities. The amount of hazardous chemicals present during construction is limited and would be in compliance with existing government regulations.

During operation, the roadway would not require the use, storage, disposal, or transport of large volumes of hazardous materials that could cause serious environmental damage in the event of an accident. Therefore, impacts related to hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Government Code Section 65962.5, or the Cortese List Statute, states that the California Department of Toxic Substances Control (DTSC) shall compile and maintain annually a list (Cortese List) of hazardous waste facilities subject to corrective action as part of the Health and Safety Code. This list is commonly referred to as the Cortese List. Cortese List data resources include the DTSC EnviroStor database, the State Water Resources Control Board (SWRCB) GeoTracker database, and other resources identified by the California Environmental Protection Agency (CalEPA).[43]

According to the DTSC EnviroStor database, the project limits are not located on a federal Superfund site, State response site, voluntary cleanup site, evaluation site, school or military investigation site, tiered permit site, or corrective action site.[44] Further, no sites are listed on the EnviroStor database within a 1-mile radius of the project limits.

A review of the SWRCB GeoTracker database[45] indicated that no active Leaking Underground Storage Tank (LUST) cleanup sites, cleanup program sites, military cleanup sites, military privatized sites, or military Underground Storage Tank (UST) sites exist within the project limits or its vicinity. The

[43] California Environmental Protection Agency (CalEPA). 2024. Cortese List Data Resources. Website: https://calepa.ca.gov/sitecleanup/corteselist/ (accessed April 9, 2024).
[44] California Department of Toxic Substances Control (DTSC). n.d. EnviroStor Database. Website: https://www.envirostor.dtsc.ca.gov/public/ (accessed April 9, 2024).
[45] State Water Resources Control Board (SWRCB). n.d. GeoTracker Database. Website: https://geotracker.waterboards.ca.gov/ (accessed April 9, 2024).

nearest site listed on GeoTracker to the project limits is the Irvine Lake Boat and Tackle site, located approximately 0.12 mile west of the project limits at 4261 Santiago Canyon Road. This site was listed as a LUST cleanup site, but was marked as "completed – case closed" as of July 8, 1997.

The project limits are also not located on a list of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit[46] or active cease and desist orders and cleanup and abatement orders.[47] Based on the information presented above, the proposed project would not result in an impact related to a known hazardous materials site pursuant to Government Code Section 65965.5 and would not create a significant hazard to the public or the environment. No mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

e) Would the project be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The closest airports to the project limits are the John Wayne Airport and the Fullerton Municipal Airport, which are located approximately 9.6 miles southwest and 10.8 miles northwest of the project limits, respectively. As such, the project limits are not located within 2 miles of a public airport or public use airport. The project limits are located outside the Airport Environs Land Use Plan for both John Wayne Airport[48] and Fullerton Municipal Airport.[49] The proposed project is a transportation project and would not involve the introduction of new hazards or excessive noise. Therefore, the project would not expose people residing or working in the vicinity to aviation-related safety hazards or excessive noise levels, and no impact would occur. No mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

46 California Environmental Protection Agency (CalEPA). n.d.-b. Sites Identified with Waste Constituents Above Hazardous Waste Levels Outside the Waste Management Unit. Website: https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/SiteCleanup-CorteseList-CurrentList.pdf (accessed April 9, 2024).

47 California Environmental Protection Agency (CalEPA). n.d.-a. List of "Active" CDO and CAO from Water Board (accessed April 9, 2024).

48 Orange County Airport Land Use Commission (OCALUC). 2008. Airport Environs Land Use Plan for John Wayne Airport. April 17. Website: https://files.ocair.com/media/2021-02/JWA_AELUP-April-17-2008.pdf?VersionId=cB0byJjdad9OuY5im7Oaj5aWaT1FS.vD (accessed April 9, 2024).

49 Orange County Airport Land Use Commission (OCALUC). 2019. Airport Environs Land Use Plan for Fullerton Municipal Airport. February 21. Website: https://files.ocair.com/media/202102/AELUP%20for%20FMA%2005092019.pdf (accessed April 9, 2024).

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

The City's General Plan Public Safety Element[50] outlines goals and policies aimed at adequately preparing for future emergency situations, including the components of the City's Emergency Operations Plan and procedures for emergency access and evacuation. According to Figure PS-4, Generalized Evacuation Corridors, of the Public Safety Element, Cannon Street is not designated as an evacuation corridor. Cannon Street does intersect with the Chapman Avenue evacuation corridor, but this intersection falls outside of the project limits and therefore is not anticipated to be affected by the proposed project. As noted by the City's Emergency Operations Plan, evacuation routes for emergency situations are contingent upon the scale and location of the emergency, and would change depending on the direction of evacuation required by the situation.

The proposed project does not include any characteristics (e.g., permanent road closures or long-term blocking of road access) that would physically impair or otherwise conflict with an emergency response plan or emergency evacuation plan. The proposed project would not result in any substantial traffic impacts or queueing on nearby streets during short-term construction activities with utilization of lane shifts, and all construction equipment would be staged within the project limits or within nearby temporary construction easements. Long-term operations of the proposed project would result in improved movement along the Cannon Street roadway, particularly in the northbound direction, thus improving the mobility of emergency vehicles along Cannon Street when necessitated by an emergency event.

Further, the improvements and pedestrian bridge proposed under the project would be reviewed and approved by the Orange City Fire Department and the City as part of the City's Design Review process to ensure compliance with all applicable codes and ordinances for emergency vehicle access. Therefore, with Fire Department review of the project plans, the proposed project's impacts related to emergency response and evacuation plans would be less than significant, and no mitigation would be required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

Please refer to Section 4.20, Wildfire, for a detailed analysis of the proposed project's potential impacts related to wildfire. The California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas of significant fire hazards in the State through its Fire and Resources Assessment Program (FRAP). These maps place areas of California into different fire hazard severity zones (FHSZ), based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing densities, and occurrence of severe fire weather where urban conflagration could result in catastrophic losses. As part of this mapping system, CAL FIRE is responsible for wildland fire protection for land areas that are generally unincorporated and they are classified as State Responsibility Areas (SRAs). In areas where local fire protection agencies (e.g., Orange County Fire Authority [OCFA]) are responsible for wildfire protection, the lands are classified as Local Responsibility Areas (LRAs). CAL FIRE

[50] City of Orange. 2015. Orange General Plan Public Safety Element. Website: https://www. .org/home/showpublisheddocument/214/637698172567530000 (accessed February 9, 2024).

currently identifies the proposed project limits, and the City of Orange in its entirety, as a Local Responsibility Area.

According to CAL FIRE's Fire and Resource Assessment Program Fire Hazard Severity Viewer, the project limits are not located within a Very High Fire Hazard Severity Zone (VHFHSZ), or within a SRA.[51] However, the land directly to the east of the project limits is considered a VHFHSZ within an LRA. Despite this proximity to a VHFHSZ, the proposed project would utilize land shifts in order to maintain through access during short-term construction activities and therefore is not anticipated to result in any substantial traffic impacts or queueing on nearby streets during construction of the proposed project, as discussed in Section 4.17, Transportation. In addition, all construction equipment would be staged within temporary construction easements and would not interfere with movement along the Cannon Street corridor. Therefore, the proposed project would not expose any individuals or structures to risk of wildland fire throughout the construction phase.

The proposed project consists of roadway improvements and the construction of a pedestrian bridge which would not introduce any new inhabitable structures with the potential to place people at increased risk of wildfire hazards. Operations of the proposed project would consist of improved mobility conditions and would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

[51] California Department of Forestry and Fire Protection (CAL FIRE). 2022. Fire and Resource Assessment Program Fire Hazard Severity Viewer. Website: https://egis.fire.ca.gov/FHSZ/ (accessed February 6, 2024).

4.10 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i. Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. Impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Impact Analysis

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

The proposed project consists of widening an existing 0.6-mile portion of the Cannon Street roadway to accommodate a third northbound auxiliary lane, as well as the construction of a new pedestrian bridge over Santiago Creek and a traffic signal modification. As noted from this description, Santiago Creek is located within central portion of the project limits which perpendicularly crosses beneath Cannon Street and is tributary to the Santa Ana River. The Santiago Creek conveys perennial flows of water from the eastern portion of the project limits to the western portion of the project limits, where it flows into Santiago Creek Recharge Basin.

Pollutants of concern during construction include, but are not limited to: solid or liquid chemical spills; wastes from paints, stains, sealants, glues, lime, pesticides, herbicides, wood preservatives and solvents, asbestos fibers, paint flakes or stucco fragments; fuels, oils, lubricants, and hydraulic, radiator or battery fluids; concrete, detergent or floatable wastes; wastes from any engine/equipment steam cleaning or

chemical degreasing; and super-chlorinated potable water line flushing. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters (i.e., the municipal storm drain system which discharges into the Santa Ana River, and ultimately into the Pacific Ocean). Stormwater runoff is regulated by the National Pollutant Discharge Elimination System (NPDES) Program (established through the federal Clean Water Act [CWA]). The objective of the NPDES Program is to control and reduce pollutant discharges to surface water bodies. Compliance with NPDES permits is mandated by State and federal statutes and regulations. Locally, the NPDES Program is administered by the Santa Ana Regional Water Quality Control Board (RWQCB). Construction activities can be subject to the SWRCB NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, Order No. 2022-0057-DWQ, NPDES No. CAS000002 (Construction General Permit) depending on soil disturbance. Any construction activity, including grading, that would result in the disturbance of 1 acre or more would require compliance with SWRCB's Construction General Permit, which requires preparation of a Stormwater Pollution Prevention Program (SWPPP) and implementation of Construction Best Management Practices (BMPs) to address water quality concerns during construction activities. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site as well as Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters.

The proposed project's operational activities are subject to the NPDES Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds Within the Orange County Region, Order No. R8-2009-0030, NPDES No. CAS618030 as amended by Order No. R8-2010-0062 (MS4 Permit). The MS4 Permit prohibits discharges, sets limits on pollutants being discharged into receiving waters, and requires implementation of technology-based standards. The MS4 Permit requires co-permittees, including the City, to develop and implement standard design and post-development BMP guidance to guide application of Low Impact Development (LID) BMPs to the maximum extent practicable. The MS4 Permit also requires preparation of a Water Quality Management Plan (WQMP), implementation of post-construction BMPs, and hydromodification requirements for new development and significant redevelopment projects that qualify as "Priority Development" projects.

Section 7.01 of the City of Orange Municipal Code codifies requirements related to water quality and stormwater discharges, and is intended to enhance and protect water quality by prescribing requirements for all new development and significant redevelopment projects in order to reduce pollution in surface runoff. Chapter 7.01 includes, but is not limited to, general provisions, prohibited discharges, BMP requirements, and monitoring and inspection procedures. Section 7.01.050 of the City's Municipal Code requires that new development projects and significant redevelopment projects adhere to the City's Local Implementation Plan (LIP) prepared as part of a compliance program to satisfy the requirement of the area-wide Drainage Area Management Plan (DAMP) and the Santa Ana RWQCB municipal storm water permit issued to the City. The LIP outlines protocols for citywide projects to implement in order to contribute to regional stormwater pollution control efforts and adhere to the requirements of applicable NPDES permits described above. In addition, all projects requiring discretionary and some requiring ministerial City approval are required to prepare a WQMP in

accordance with the Orange County DAMP and City of Orange LIP.[52] Therefore, all development projects, regardless of priority status, would be required to implement these features where applicable and feasible.

Construction. The proposed project would include a variety of roadway improvements along an 0.6-mile segment of the Cannon Street roadway including curb realignment, lane restriping, median modification, tree and streetlight relocation, and construction of the new pedestrian bridge over Santiago Creek. Pollutants of concern during construction include, but are not limited to: solid or liquid chemical spills; wastes from paints, stains, sealants, glues, lime, pesticides, herbicides, wood preservatives and solvents, asbestos fibers, paint flakes or stucco fragments; fuels, oils, lubricants, and hydraulic, radiator or battery fluids; concrete, detergent or floatable wastes; wastes from any engine/equipment steam cleaning or chemical degreasing; and super-chlorinated potable water line flushing. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste have the potential to be transported via stormwater runoff into receiving waters if spilled or leaked during construction activities.

Because construction of the proposed project is expected to disturb 0.62 acre of soil, the project is not subject to the requirements of the Construction General Permit, as described earlier. As such, the preparation of a SWPPP is not required for the proposed project. However, the City's LIP sets forth requirements for public works construction projects not subject to the Construction General Permit. According to the LIP, the proposed project shall comply with appropriate pollution prevention control practices in accordance with the current edition of the "Green Book" Standard Specifications for Public Works Construction and the provisions of Section A-8, and shall develop and implement ESCPs. The proposed project's adherence to these requirements is specified in Regulatory Compliance Measure (RCM) HYD-1. Further, in the event that circumstances change and construction of the proposed project disturbs greater than 1 acre of soil, the requirements of the Construction General Permit, including preparation of a SWPPP and implementation of construction BMPs during construction activities, would be required pursuant to NPDES guidelines.

The proposed project would also be required to comply with the City of Orange's Local Implementation Plan (LIP),[53] which was adopted by the City in July 2003 as part of a compliance program to satisfy the requirement of the area-wide DAMP. The LIP outlines protocols for citywide projects to implement in order to contribute to regional stormwater pollution control efforts and adhere to the requirements of applicable NPDES permits required for the project. In addition, all projects requiring discretionary and some requiring ministerial City approval are required to prepare a WQMP in accordance with the Orange County DAMP and City of Orange LIP. These City requirements are classified as RCM HYD-1, which is intended to enhance and protect water quality by prescribing requirements for all new development and redevelopment projects designed to reduce pollution in surface runoff. This will require the inclusion of project features such as: general provisions, prohibited discharges, BMPs, monitoring and inspection procedures, including implementation of construction BMPs to manage the

[52] City of Orange. Storm Water Program – Water Quality Management Plans. Website: https://www.cityoforange.org/our-city/departments/public-works/engineering-division/storm-water (accessed April 19, 2024).

[53] City of Orange. 2011. Storm Water Local Implementation Plan (LIP). July. Website: https://www.cityoforange.org/home/showpublisheddocument/500/637702460732200000 (accessed April 25, 2024).

surface runoff from the construction site. As specified in RCM HYD-1, the Construction Contractor would be required to implement ESCPs.

According to the *Cannon Street Widening Improvement Project Foundation Report* prepared by Earth Mechanics, Inc. (January 2024), groundwater was encountered in all borings at depths ranging from 16 to 25 feet below ground surface (bgs) during a field investigation. The maximum depth of excavation to construct project features is anticipated to reach approximately up to 40-ft bgs for cast-in-drilled hole (CIDH) piles associated with the new Santiago Creek Bridge Foundation. As such, groundwater dewatering may be required during construction of the proposed project. Groundwater dewatering activities could affect surface water quality through the discharge of polluted groundwater to surface water bodies. As specified in RCM HYD-2, groundwater dewatering activities would comply with the Waste Discharge Requirements (WDR) Permit for Discharges to Surface Waters That Pose an Insignificant (*De Minimis*) Threat to Water Quality (Groundwater Discharge Permit) (Order No. R8-2020-0006, NPDES No. CAG998001). In compliance with the requirements of the Groundwater Discharge Permit, groundwater would be tested and treated (if necessary) prior to discharge to surface waters. With adherence to RCM HYD-2, groundwater dewatering, if necessary during construction activities, would not introduce pollutants to receiving waters at levels that would violate water quality standards or water discharge requirements, degrade water quality, or alter the quality of the receiving water.

As discussed in RCM HYD-2, dewatered groundwater would be subject to water sampling, analysis, and treatment (if required) prior to discharge in order to minimize any potential to introduce pollutants to groundwater. Infiltration of stormwater has the potential to affect groundwater quality in areas of shallow groundwater. As discussed above, groundwater could occur at depths from 16 to 25 feet bgs. Pollutants in stormwater are generally removed by soil through absorption as water infiltrates. In areas of deep groundwater, there is more absorption potential and, as a result, less potential for pollutants to reach groundwater. Due to the potential to impede on groundwater quality for the construction of the Santiago Creek bridge foundation, it is imperative to adhere to the regulations outlined in the NPDES Groundwater Discharge Permit in order to not affect any potential direct path for pollutants to reach groundwater. With the implementation of RCM HYD-2, project construction activities would not substantially degrade groundwater quality.

With implementation of RCM HYD-1 and RCM HYD-2, which require adherence to the City's Local Implementation Plan, and Groundwater Discharge Permit, construction impacts related to surface water quality standards, waste discharge requirements, and surface water quality would be less than significant, and no mitigation is required.

Operation. The proposed project consists of widening an existing 0.6-mile portion of the Cannon Street roadway to accommodate a third northbound auxiliary lane, as well as a new pedestrian bridge over Santiago Creek and a traffic signal modification. As noted from this description, the pedestrian bridge over Santiago Creek is located within central portion of the project limits which perpendicularly crosses beneath Cannon Street and is tributary to the Santa Ana River. Pollutants of concern from long-term operations of the proposed project include suspended solids/sediment, nutrients, oil and grease, metals, and trash and debris.

As previously stated, operational activities are subject to the NPDES MS4 Permit. The MS4 Permit prohibits discharges, sets limits on pollutants being discharged into receiving waters, and requires implementation of technology-based standards. The MS4 Permit requires co-permittees, including the City, to develop and implement standard design and post-development BMP guidance to guide

application of LID BMPs to the maximum extent practicable. The MS4 Permit also requires preparation of a WQMP, implementation of post-construction BMPs, and hydromodification requirements for new development and significant redevelopment projects that qualify as "Priority Development" projects. Therefore, as specified in RCM HYD-3, the proposed project would adhere to prepare a WQMP pursuant to the guidance provided in the City's Non-Priority Projects WQMP Preparation Guidance Manual (Non-Priority Manual).[54] As stated in the Non-Priority Manual, the WQMP must incorporate structural and non-structural Source Control BMPs as well as Site Design BMPs. Source Control BMPs are preventative measures that are implemented to prevent the introduction of pollutants into stormwater, while Site Design BMPs are stormwater management strategies that emphasize conservation and use of existing site features to reduce the amount of runoff and pollutant loading generated from a site. The requirement to prepare a WQMP in conformance with the DAMP and LIP is also reiterated in Section 7.01 of the City's Municipal Code. As specified in RCM HYD-4, the proposed project shall adhere to applicable provisions of Section 7.01 of the City's Municipal Code, including WQMP and BMP requirements.

In addition, the City's LIP requires development projects to comply with all applicable BMPs set forth in the area-wide DAMP. The DAMP is the principal guidance and compliance document for the county-wide implementation of the Stormwater Program. It is the foundation for each Orange County Stormwater Permittee to implement programs designed to prevent pollutants from entering receiving waters to the maximum extent practicable. The City's LIP provides the description and details of the City's water quality program implementation activities and provides examples of Source Control and LID BMP requirements for development projects, such as storm drain signage, street construction to minimum widths necessary, landscaping with native or drought tolerant species, and landscaped areas designed to infiltrate and/or treat runoff.[55] As detailed in RCM HYD-1, the proposed project would be required to implement these features during project operations where applicable and feasible.

As mentioned previously, the *Cannon Street Widening Improvement Project Foundation Report* prepared by Earth Mechanics, Inc. (January 2024), groundwater was encountered in all borings at depths ranging from 16 to 25 feet below the proposed bridge grading during a field investigation. The maximum depth of excavation to construct project features is anticipated to reach approximately up to 40-ft bgs for cast-in-drilled hole (CIDH) piles associated with the new Santiago Creek Bridge and groundwater dewatering is not anticipated during project excavation and construction activities. Further, construction impacts related to depletion of groundwater supplies or interference with groundwater recharge would be less than significant. No mitigation would be required. However, in the event that groundwater or perched groundwater is encountered during project construction, it would be necessary to obtain coverage under the Santa Ana RWQCB's NPDES General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (*De Minimis*) Threat to Water Quality (Groundwater Discharge Permit), Order No. R8-2020-0006, NPDES No. CAG998001, as specified in RCM HYD-2. With adherence to RCM HYD-2, groundwater dewatering as a result of operational activities, would not introduce pollutants to receiving waters at levels that would violate water quality standards or water discharge requirements, degrade water quality, or alter the quality of the receiving water.

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54 City of Orange. 2005. Non-Priority Projects WQMP Preparation Guidance Manual. December. Website: https://www.cityoforange.org/home/showpublisheddocument/182/637698164909270000 (accessed April 25, 2024).

55 City of Orange. 2011. Storm Water Local Implementation Plan (LIP). July. Website: https://www.cityoforange.org/home/showpublisheddocument/500/637702460732200000 (accessed April 25, 2024).

With implementation of RCM HYD-1 and RCM HYD-3, which requires adherence to City's Local Implemental Plan and the MS4 Permit including implementing site design and source control LID BMPs where applicable to address pollutants of concern in stormwater runoff, impacts associated with the violation of water quality standards or waste discharge requirements, or degradation of surface water or groundwater quality, during project operation would be less than significant, and no mitigation is required.

Regulatory Compliance Measures

RCM HYD-1 **City of Orange Local Implementation Plan.** During and post-construction, the Construction Contractor shall comply with the City of Orange's (City) Local Implementation Plan (LIP) prepared as part of a compliance program to satisfy the requirement of the area-wide Drainage Area Management Plan (DAMP) and the Santa Ana Regional Water Quality Control Board (RWQCB) municipal storm water permit issued to the City. The LIP outlines protocols for citywide projects to implement in order to contribute to regional stormwater pollution control efforts and adhere to the requirements of applicable National Pollutant Discharge Elimination System (NPDES) permits described above.

During construction, the Construction Contractor shall comply with appropriate pollution prevention control practices in accordance with the current edition of the "Green Book" Standard Specifications for Public Works Construction. The proposed project shall also implement Erosion and Sediment Control Plans (ESCPs) and Best Management Practices (BMPs) to manage the surface runoff from the construction site and prevent or reduce the discharge of pollutants directly or indirectly into surface waters consistent with the requirements of City's LIP.

Post construction, the City shall ensure that all applicable BMPs set forth in the Orange County DAMP and the City's LIP are being properly implemented, such as storm drain signage, landscaping with native or drought tolerant species, and landscaped areas designed to infiltrate and/or treat runoff.

RCM HYD-2 **Groundwater Discharge Permit.** If groundwater dewatering is required during construction of the proposed project, the City of Orange Public Works Department shall submit a Notice of Intent (NOI) for coverage under the permit to the Santa Ana RWQCB at least 60 days prior to the start of excavation activities and anticipated discharge of dewatered groundwater to surface waters in order to obtain coverage under the General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (*De Minimis*) Threat to Water Quality (Groundwater Discharge Permit), Order No. R8-2020-0006, NPDES No. CAG998001. The construction contractor shall comply with the requirements of Order No. R8-2020-0006, NPDES No. CAG998001. Groundwater dewatering activities shall comply with all applicable provisions in the Groundwater Discharge Permit, including water sampling, analysis, treatment (if required), and reporting of dewatering-related discharges. Upon completion of groundwater dewatering activities, a Notice of Termination shall be submitted to the Santa Ana RWQCB.

RCM HYD-3 **MS4 Permit.** Prior to construction, the Construction Contractor shall prepare a Water Quality Management Plan (WQMP) using the City's Non-Priority Projects WQMP

Preparation Guidance Manual (Non-Priority Manual), detailing the range of BMPs to be implemented as part of project operations, in accordance with the NPDES Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds Within the Orange County Region, Order No. R8-2009-0030, NPDES No. CAS618030 as amended by Order No. R8-2010-0062 (MS4 Permit). The City shall ensure the implementation of all applicable Source Control and Site Design BMPs included in the Non-Priority Manual. The City shall implement, maintain and operate all such BMPs in a timely and reasonably diligent manner.

RCM HYD-4 **City of Orange Municipal Code Chapter 7.01.** During and post-construction, the Construction Contractor shall comply with Section 7.01, Water Quality and Stormwater Discharge, of the City of Orange Municipal Code.

Prior to the issuance by the City of a grading permit, the Public Works Director shall review the project plans and impose terms, conditions and requirements as deemed necessary, which the proposed project shall comply with.

During construction, the Construction Contractor shall implement BMPs set forth in the WQMP, the Orange County DAMP, and the City's Water Quality LIP in order to manage the surface runoff from the construction site and prevent or reduce the discharge of pollutants directly or indirectly into surface waters.

Post-construction, the City shall ensure that all applicable BMPs as identified under the WQMP are being properly implemented, such as storm drain signage, landscaping with native or drought tolerant species, and landscaped areas designed to infiltrate and/or treat runoff.

Overall, because the proposed project would be required to comply with existing regulations including the LIP, the DAMP, the Groundwater Discharge Permit, the MS4 Permit, and the City of Orange Municipal Code, as specified in RCM HYD-1 through RCM HYD-4, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No mitigation is required, but adherence to RCM HYD-1 through RCM HYD-4 is required.
Significance Determination After Mitigation: Less Than Significant Impact

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

As mentioned previously, the *Cannon Street Widening Improvement Project Foundation Report* prepared by Earth Mechanics, Inc. (January 2024), groundwater was encountered in all borings at depths ranging from 16 to 25 feet below the proposed bridge grading during a field investigation. The maximum depth of excavation to construct project features is anticipated to reach approximately up to 40-ft bgs for cast-in-drilled hole (CIDH) piles associated with the new Santiago Creek Bridge and groundwater dewatering is not anticipated during project excavation and construction activities. In the

event that groundwater or perched groundwater is encountered during project construction, it would be necessary to obtain coverage under the Santa Ana RWQCB's NPDES General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (*De Minimis*) Threat to Water Quality (Groundwater Discharge Permit), Order No. R8-2020-0006, NPDES No. CAG998001, as specified in RCM HYD-2. Adherence to RCM HYD-2, groundwater dewatering as a result of construction and operational project activities would be required in order to avoid introducing pollutants to receiving waters at levels that would violate water quality standards or water discharge requirements, degrade water quality, or alter the quality of the receiving water.

Construction. Overall, construction of the proposed project would not generate a substantial demand for groundwater. As discussed in Response 4.10(a) above, the *Cannon Street Widening Improvement Project Foundation Report* prepared by Earth Mechanics, Inc. (January 2024) reported that groundwater was encountered in all borings at depths ranging from 16 to 25 feet below the proposed bridge grading during a field investigation. The maximum depth of excavation to construct project features is anticipated to reach approximately up to 40-ft bgs for cast-in-drilled hole (CIDH) piles associated with the new Santiago Creek Bridge. In the event that groundwater or perched groundwater is encountered during project construction, it would be necessary to obtain coverage under the Santa Ana RWQCB's NPDES General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant *(De Minimis)* Threat to Water Quality (Groundwater Discharge Permit), Order No. R8-2020-0006, NPDES No. CAG998001, as specified in RCM HYD-2, which sets forth procedures to follow that would reduce potential impacts related to groundwater dewatering to a less than significant level. In addition, if groundwater dewatering is required during construction of the proposed project, dewatering activities would be temporary, and the volume of groundwater removed would not be substantial. Please refer to Section 4.19, Utilities and Service Systems, for a detailed discussion of groundwater supply and demand. Therefore, construction of the proposed project would not substantially decrease groundwater supplies such that the project may impede sustainable groundwater management or recharge of the basin. Construction impacts associated with substantial decrease in groundwater supplies or interference with groundwater recharge would be less than significant, and no mitigation is required.

Operation. The proposed project would improve an existing roadway and would require minimal water service associated with irrigation of landscaped areas. As detailed in RCM HYD-1, the proposed project would be required to comply with all applicable BMPs set forth in the City's LIP, which would require the use of native or drought tolerant species for landscaping within the median and curb areas, thus reducing the amount of water needed for irrigation. Under existing conditions, the project limits consist of a paved road and is predominantly comprised of impervious pavement. Therefore, the project limits are not considered a significant source of groundwater recharge. The addition of landscaped areas under the proposed project is expected to result in a net increase of pervious surface area of 0.1 acre. Therefore, operation of the proposed project would not interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

For the reasons listed above, and with implementation of RCM HYD-2 if construction dewatering is required and RCM HYD-1 requiring BMPs such as the use of native or drought tolerant species in landscaped areas, impacts related to the decrease of groundwater supplies or interference with groundwater recharge would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required, but adherence to RCM HYD-1 and RCM HYD-2 is required.

Significance Determination After Mitigation: Less Than Significant Impact

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site?

Construction. Under existing conditions, storm water from the project limits drains to various drainage features along each side of Cannon Street. Along the western edge of Cannon Street, stormwater from the project limits drains to one curb inlet south of Santiago Creek or three curb inlets north of Santiago Creek. Along the eastern edge of Cannon Street, storm water from the project limits drains to a V-ditch concrete channel south of Santiago Creek and one curb inlet north of Santiago Creek. This stormwater eventually discharges to the Santa Ana River and ultimately into the Pacific Ocean.

Construction activities associated with the proposed project would result in the total disturbance of 0.62 acre of soil. During grading and other construction activities, soil would be exposed and drainage patterns temporarily altered, and there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate.

In compliance with RCM HYD-1, the proposed project would be subject to the construction-level requirements for public works construction projects not subject to the Construction General Permit set forth in the City's LIP. According to the LIP, the proposed project shall comply with appropriate pollution prevention control practices in accordance with the current edition of the "Green Book" Standard Specifications for Public Works Construction and the provisions of Section A-8, and shall develop and implement ESCPs. The proposed project's adherence to these requirements is specified in RCM HYD-1. Compliance with RCM HYD-1, which requires compliance with the LIP and implementation of construction BMPs and ESCPs, would ensure temporary impacts related to on- or off-site erosion or siltation would be less than significant.

Operation. After the completion of project construction, the proposed project would not significantly alter the existing drainage pattern of the site. Operation of the proposed project would provide safety and other travel improvements to existing roadway uses along Cannon Street or at Santiago Creek which would involve reconfigurations of existing pervious (i.e., landscaped areas) and impervious surfaces (i.e., roadway and median). As part of the proposed improvements, the general roadway alignment would remain the same, though widening and median/curb modifications would occur. These modifications would not significantly alter the existing drainage pattern of the project limits as existing drainage features would be realigned with the proposed As previously stated, implementation of the proposed project would result in a net increase of 0.1 acre of pervious surface area. This change would be expected to result in a potential net decrease in stormwater runoff. Further, compliance with the City's LIP and MS4 Permit, as specified to RCM HYD-1 and RCM HYD-3, would require the proposed project to incorporate applicable BMPs pertaining to stormwater control and treatment to reduce the potential for erosion or siltation on- or off-site during operation of the proposed project. BMPs identified in the City's LIP that are relevant to the proposed project include but are not limited to disconnection of impervious surfaces through distributed pervious areas, street trees, and efficient irrigation systems and landscape design. Through compliance with applicable regulations and incorporation of BMPs as required by RCM HYD-1 and RCM HYD-3, operational impacts related to on- or off-site erosion or siltation would be less than significant, and no mitigation is required.

Significance Determination: Less than Significant Impact
Mitigation Measures: No mitigation is required, but adherence to RCM HYD-1 and RCM-HYD-3 is required.
Significance Determination After Mitigation: Less than Significant Impact

ii. Increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

Construction. The proposed project would comply with appropriate pollution prevention control practices in accordance with the current edition of the "Green Book" Standard Specifications for Public Works Construction and the provisions of Section A-8, and shall develop and implement ESCPs. The proposed project's adherence to these requirements is specified in RCM HYD-1. The LIP also requires compliance with all applicable construction BMPs set forth in the Orange County DAMP and the City's LIP. Under these requirements, fill slopes at the construction site perimeter must drain away from the top of the slope that the conclusion of each working day, which would reduce the volume of surface runoff beyond the project limits. With adherence to RCM HYD-1, construction impacts related to a substantial increase in the rate or amount of surface runoff that would result in on- or off-site flooding would be less than significant, and no mitigation is required.

Operation. Operation of the proposed project is expected to result in a slight increase in the pervious surface area within the project limits which could have the potential to slightly decrease the volume and rate of stormwater runoff discharged from the project limits. In the post-project condition, stormwater would continue to be directed to curb inlets along both outermost curbs of Cannon Street Drive and eventually discharge to the Pacific Ocean, similar to existing conditions. As specified in RCM HYD-3, the proposed project would be required to adhere to the City's Non-Priority Manual, which provides guidance on feasible BMP requirements for developers of Non-Priority Development projects consistent with the MS4 Permit. In addition, as specified in RCM HYD-1, the proposed project would also be required to comply with all applicable BMPs set forth in the Orange County DAMP and the City's LIP. As such, applicable BMPs would be appropriately incorporated and sized to accommodate the rate and amount of stormwater runoff in the post-project condition to prevent on- or off-site flooding. With implementation of BMPs in compliance with the MS4 Permit as required by RCM HYD-1 and RCM HYD-3, operation of the proposed project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off site. Impacts would be less than significant, and no mitigation is required

Significance Determination: Less Than Significant Impact
Mitigation Measures: No mitigation is required, but adherence to RCM HYD-1 and RCM HYD-3 is required.
Significance Determination After Mitigation: Less Than Significant Impact

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

Stormwater Drainage System Capacity. As previously stated, under existing conditions, stormwater from the project limits drains to various drainage features along each side of Cannon Street. Along the western edge of Cannon Street, stormwater from the project limits drains to one curb inlet south of Santiago Creek or three curb inlets north of Santiago Creek. Along the eastern edge of Cannon Street, storm water from the project limits drains to a V-ditch concrete channel south of Santiago Creek and

one curb inlet north of Santiago Creek. This stormwater eventually discharges to the Santa Ana River and ultimately into the Pacific Ocean.

As a co-permittee of the Santa Ana RWQCB, the City of Orange is responsible for ensuring that existing infrastructure is capable of supporting new development within the City. With implementation of the proposed project, any curb inlets affected by the proposed curb shift or road widening would be replaced along the new alignment to ensure that drainage properties within the project limits is not adversely affected. Therefore, the proposed project would not decrease the capacity of the existing stormwater drainage system through the permanent removal of any drainage facilities. As such, both outermost curbs of Cannon Street would continue to accommodate runoff water originating from the project limits. As previously discussed, the project limits currently consist of a roadway developed with predominantly impervious surface area and the proposed project would slightly increase the pervious surface area within the project limits in comparison to existing conditions. Therefore, the proposed project would not create additional runoff in excess of the City's existing stormwater drainage system.

Polluted Runoff. As discussed in Response 4.10(a), pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals, and each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. Drainage patterns would be temporarily altered during grading and other construction activities, and construction-related pollutants could be spilled, leaked, or transported via storm runoff into adjacent drainages and downstream receiving waters. The proposed project would be required to contain runoff from construction equipment and vehicle washing within the project limits unless treated to remove sediment and other pollutants. As previously discussed, the proposed project must comply with City's LIP, as specified in RCM HYD-1, which requires the adoption of all feasible and applicable ESCPs and BMPs presented in the Orange County DAMP and City's LIP, and would ensure the proposed project would not discharge substantial sources of polluted runoff from the project limits during construction activities.

Expected pollutants of concern from long-term project operations include suspended solids/sediment, nutrients, oil and grease, metals, and trash and debris. As previously discussed, the proposed project's compliance with City's LIP and the MS4 Permit, as specified in RCM HYD-1, RCM HYD-3, and RCM HYD-4, which require the implementation of applicable BMPs to target pollutants of concern during operations of the proposed project, would ensure that the proposed project would not discharge substantial sources of polluted runoff from the project limits during project operations.

With compliance with applicable regulations, including the City's LIP, MS4 Permit, and Municipal Code Section 7.01, as specified in RCM HYD-1, RCM HYD-3, and RCM HYD-4, impacts associated with creating or contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No mitigation is required, but adherence to RCM HYD-1, RCM HYD-3, and RCM HYD-4 is required.
Significance Determination After Mitigation: Less Than Significant Impact

iv. Impede or redirect flood flows?

The project limits are not located within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain. According to the FEMA Flood Insurance Rate Map (FIRM) No. 06059C0161J (Updated December 2021), the project limits are located within Zone X, Area of Minimal Flood Hazard. Because the project would not place improvements or structures directly within a 100-year floodplain, the project would not impede or redirect flood flows. Therefore, no impact would occur related to impeding or redirecting of flood flows, and no mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

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

As discussed in Response 4.10(c)(iv), the project is not located within a 100-year flood hazard area and would therefore not risk release of pollutants during flooding as a result of a storm event. However, according to the Safety Element of the County of Orange General Plan (2010), the project limits are located within both the Santiago Reservoir Inundation Area and the Prado Dam Inundation Area. Therefore, the potential for inundation of the project limits in the unlikely event of failure or Prado Dam or Santiago Dam cannot be ruled out. As stated in Section 4.9, Hazards and Hazardous Materials, potentially hazardous substances such as chemical agents, solvents, and paints would be used during construction. Potentially hazardous materials from routine project maintenance may also be used during operation of the proposed project. However, the amount of these chemicals present during project construction and operation is limited and would be in compliance with existing government regulations. Therefore, in the unlikely event of inundation from Santiago Reservoir or Prado Dam, the proposed project would not increase the risk of release of pollutants, and a less than significant impact would occur. No mitigation is required.

Tsunamis are ocean waves generated by tectonic displacement of the seafloor associated with shallow earthquakes, seafloor landslides, rock falls, and exploding volcanic islands. Tsunamis can have wave lengths of up to 120 miles and travel as fast as 500 miles per hour (mph) across hundreds of miles of deep ocean. Upon reaching shallow coastal waters, the waves can reach up to 50 ft in height, causing great devastation to near-shore structures. The project limits are located approximately 11.5 miles from the Pacific Ocean shoreline and is not in a tsunami inundation area.[56] Therefore, the project limits are not subject to inundation from tsunamis, and there is no risk of release of pollutants due to inundation from tsunami. No mitigation is required.

Seiching occurs when seismic ground shaking induces standing waves (seiches) inside water retention facilities (e.g., reservoirs and lakes). Such waves can cause retention structures to fail and flood downstream properties. Because there are no large lakes, reservoirs, or other water retention facilities in the vicinity of the project limits, the project limits are not subject to inundation from seiche waves, and there is no risk of release of pollutants due to inundation from seiche. No mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required

[56] California Department of Conservation (DOC). 2019. Orange County Tsunami Inundation Maps. Website: https://www.conservation.ca.gov/cgs/tsunami/maps/orange (accessed April 19, 2024).

Significance Determination After Mitigation: Less Than Significant Impact

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

The project is within the jurisdiction of the Santa Ana RWQCB. The Santa Ana RWQCB adopted a Water Quality Control Plan (i.e., Basin Plan) that designates beneficial uses for all surface and groundwater within their jurisdiction and establishes the water quality objectives and standards necessary to protect those beneficial uses. As summarized below, the project would comply with the applicable NPDES permits and would implement construction and operational BMPs to reduce pollutants of concern in stormwater runoff.

As discussed in Response 4.10(a), during construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater runoff into receiving waters. As specified in RCM HYD-1, the proposed project would be required to comply with appropriate pollution prevention control practices in accordance with the current edition of the "Green Book" Standard Specifications for Public Works Construction and the provisions of Section A-8, and shall develop and implement ESCPs.

As discussed in Response 4.10(a), the primary pollutants of concern during project operations are suspended solids/sediments, nutrients, heavy metals, pathogens (bacteria/virus), pesticides, oil and grease, and trash and debris. As discussed in RCM HYD-2 and RCM HYD-4, a final WQMP would be prepared as part of the City's LIP for the project and in compliance with the North Orange County MS4 Permit as discussed in RCM-3. The final WQMP will detail the Site Design, the LID, and the Source Control and/or Treatment Control BMPs that would be implemented to treat stormwater runoff and reduce impacts to water quality during operation. The proposed biotreatment BMPs (stormwater planter boxes and trash filter) would treat stormwater runoff.

The proposed project would comply with applicable NPDES provisions, including preparation of a final WQMP, and includes implementation of construction and operational BMPs to reduce pollutants of concern in stormwater runoff. As such, the project would not result in water quality impacts that would conflict with Santa Ana RWQCB's Basin Plan.

As discussed in Response 4.10(a), due to the depth to groundwater and the presence of a hard clay layer at a depth of 16 to 25 feet below proposed bridge grade, it is not expected that any stormwater that may infiltrate during construction would affect groundwater quality because there is not a direct path for pollutants to reach the groundwater table. In addition, the project would be required to implement operational BMPs to treat stormwater before it could reach groundwater. Lastly, it is unlikely that stormwater infiltration currently occurs within the project limits. However, any potential decrease in infiltration would be minimal in comparison to the size of the Coastal Plain of Orange County Groundwater Basin. Additionally, groundwater extraction would not occur during operation. Therefore, the proposed project does not have the potential to impact groundwater quality, interfere with groundwater recharge, or decrease groundwater supplies. For the reasons outlined above and with implementation of RCM HYD-1 through RCM HYD-4, a less than significant impact would occur related to conflict with or obstruction implementation of water quality control plans or sustainable groundwater management plans, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No mitigation is required, but adherence to RCM HYD-1 through RCM HYD-4 is required.
Significance Determination After Mitigation: Less Than Significant Impact

4.11 LAND USE AND PLANNING

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

Impact Analysis

a) Would the project physically divide an established community?

The physical division of an established community typically refers to the construction of a feature or removal of a means of access that would impair mobility within an existing community, or between a community and outlying areas.

In its existing condition, the project segment consists of approximately 0.6-mile of Cannon Street, classified as a Major Arterial Roadway by the City of Orange General Plan Circulation and Mobility Element.[57] This roadway segment generally runs in the north-south orientation and eventually crosses into the City of Anaheim, thereby connecting the two cities. The proposed improvements to Cannon Street would improve roadway operations, thus contributing to the improvement of mobility between the two communities.

The project segment is located within a mostly developed portion of the City of Orange consisting of residential and recreational uses. Single-family residential neighborhoods border Cannon Street on both sides north of Santiago Creek. The residential neighborhood west of Cannon Street, north of Taft Avenue, is located in the City of Villa Park, while the remainder of adjacent residential uses are located within the City of Orange. South of Santiago Creek, undeveloped parcels owned by the County of Orange border the roadway. The proposed improvements to Cannon Street would not introduce a new physical barrier that would divide an existing community because the project limits already consist of Cannon Street, and proposed changes would be limited to improvements serving the existing roadway use. Further, the proposed project would occur within existing right-of-way of the City of Orange and the City of Villa Park and would not result in any changes to the existing configuration of adjacent parcels. Therefore, the proposed project would have less than significant impacts associated with access and mobility within the existing community and between the community and outlying areas, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

[57] City of Orange. 2015. Orange General Plan Circulation and Mobility Element. Website: https://www.cityoforange.org/home/showpublisheddocument/192/637698172525970000 (accessed April 10, 2024).

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The Southern California Association of Governments (SCAG), the regional planning agency for the six-county Southern California region that includes Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial Counties, is responsible for preparing a regional growth forecast in conjunction with its efforts to prepare a Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for its regional planning area. In April 2024, SCAG adopted an updated RTP/SCS (Connect SoCal 2024), which integrates regional transportation and land use considerations. Connect SoCal 2024 includes visions, policies, and performance measures that align with SCAG's vision for future growth within the Southern California region. As shown in Table 4.11.A, the proposed project would be consistent with applicable policies set forth by SCAG in Connect SoCal 2024.

Table 4.11.A: 2024 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Policy Consistency Analysis

Regional Planning Policy	Consistency Analysis
Mobility Policy 01: Prioritize repair, maintenance and preservation of the SCAG region's existing transportation assets, following a "Fix-It-First" principle	**Consistent.** The proposed project would consist of modifications and improvements to an existing roadway in order to improve traffic operations rather than the development of a new roadway. Therefore, the proposed project is consistent with SCAG's "Fix-It-First" principle, and would be consistent with Mobility Policy 01 of Connect SoCal 2024.
Complete Streets 03: Pursue the development of Complete Streets that comprise a safe, multimodal network with flexible use of public rights-of-way for people of all ages and abilities using a variety of modes (e.g., people walking, biking, rolling, driving, taking transit)	**Consistent.** The proposed project consists of roadway enhancements that would improve traffic conditions for vehicular travel, as well as provide new right-of-way for pedestrian use. Under existing conditions, the bicycle lanes on southbound Cannon Street within the project limits are directly adjacent to vehicular travel lanes, which could present a potential safety hazard. The proposed project would introduce a degree of separation between vehicular traffic and bicyclists with the development of a new bridge serving southbound bicycle traffic, as well as both directions of pedestrian traffic. With this proposed separate bridge, the proposed project would promote a safer and more flexible multimodal network. As such, the proposed project would be consistent with Complete Streets Policy 03 of Connect SoCal 2024.
Complete Streets 04: Ensure the implementation of Complete Streets that are sensitive to urban, suburban or rural contexts and improve transportation safety for all, but especially for vulnerable road users (e.g., people, especially older adults and children, walking and biking)	**Consistent.** As previously stated, the proposed project would introduce a degree of separation between vehicular traffic and pedestrians/bicyclists with the development of a new bridge serving southbound bicycle traffic and both directions of pedestrian traffic, which would improve transportation safety for every mode of travel. As such, the proposed project would be consistent with Complete Streets Policy 04 of Connect SoCal 2024.

Source: Southern California Association of Governments (SCAG). 2024. Connect SoCal: Regional Transportation Plan/Sustainable Communities Strategy. April 4. Website: https://scag.ca.gov/sites/main/files/file-attachments/23-2987-connect-socal-2024-final-complete-040424.pdf?1714175547 (accessed July 18, 2024).

General Plan. The City of Orange General Plan is the City's most fundamental planning document. The General Plan establishes a vision for the City's future growth and change, and contains goals and policies designed to provide decision-makers with a solid basis for decisions related to land use and development. It provides a blueprint for development throughout the community and is the vehicle

through which community values are balanced. The City's General Plan is a key tool for influencing the quality of life in the community.

The proposed project also would be required to comply with the City's General Plan goals and policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. While these are mostly contained within the Circulation and Mobility Element, several other elements contain applicable goals and policies. Table 4.11.B provides a consistency analysis of the proposed project with the applicable goals and policies of the City's General Plan. As indicated in Table 4.11.B, the proposed project is consistent with the applicable General Plan goals and policies. Impacts related to conflicts with a land use plan are less than significant, and no mitigation is required.

Table 4.11.B: General Plan Consistency Analysis

Goal	Consistency Analysis
Land Use Element	
Policy 6.6: Enhance the walkability of both new and current development.	**Consistent.** The proposed project would include the development of a new bridge structure just west of the existing vehicular bridge, which would carry two-way traffic for pedestrians and southbound traffic for bicyclists. By dedicating this new route exclusively to pedestrians and bicyclists, the proposed project would enhance the walkability of Cannon Street within the project limits. As such, the proposed project would be consistent with Policy 6.6 of the City's General Plan Land Use Element.
Policy 7.3: Coordinate planning efforts with adjacent cities, special purpose agencies, utilities, and community service providers.	**Consistent.** As discussed in Section 2.0, Project Description, a portion of the proposed widening efforts would occur within the City of Villa Park's jurisdiction. As such, the City of Orange has been coordinating with the City of Villa Park and will continue coordination efforts. Additionally, because the proposed project could potentially result in traffic signal and street lighting conflicts, the City of Orange will also coordinate with the appropriate utility providers. As such, the proposed project would be consistent with Policy 7.3 of the City's General Plan Land Use Element.
Urban Design Element	
Policy 1.1: Enhance the streetscape along the City's major commercial corridors and other major streets through coordinated public and private improvements to convey a positive image of the district, contribute to its economic vitality and perception of the City, and improve visual and physical transitions into adjacent neighborhoods. Streetscape designs should include wide sidewalks to accommodate unified landscaping, trees, lighting, paving, street furniture, and other public improvements appropriate to the scale of the streets.	**Consistent.** As stated in Section 2.0, Project Description, the project limits are designated as a Major Arterial roadway in the City's Circulation and Mobility Element. The proposed project would enhance the Cannon Street streetscape within the project limits by introducing new landscaped median and curb areas containing visually appealing trees, shrubs, boulders, and other design elements. In addition, the proposed project would include a pedestrian bridge fitted with architecturally advanced prefabricated steel truss accents, which would enhance the visual appeal of the proposed bridge. As such, the proposed project would be consistent with Policy 1.1 of the City's General Plan Urban Design Element.
Policy 1.3: Ensure that streetscape improvements provide for an environment that offers a pleasant experience for motorists, pedestrians, and transit riders.	**Consistent.** As previously stated, the proposed project would enhance the Cannon Street streetscape within the project limits by introducing new landscaped median and curb areas containing visually appealing trees, shrubs, boulders, and other design elements. These improvements would be experienced by all users of the roadway including vehicles, pedestrians, and bicyclists. Further, the proposed pedestrian bridge would enhance the pedestrian and vehicular experience through its visually appealing architectural design. As such, the proposed project would be consistent with Policy 1.3 of the City's General Plan Urban Design Element.

Table 4.11.B: General Plan Consistency Analysis

Goal	Consistency Analysis
Policy 4.3: Create an attractive, walkable pedestrian environment within and between commercial districts and neighborhoods through careful site planning, architectural design, and provision of pedestrian amenities such as sidewalks, benches, plaza areas, information kiosks, and other street furniture.	**Consistent.** The project limits are located adjacent to several single-family residential neighborhoods. As previously stated, the proposed project would improve the walkability of the project limits with the development of a new bridge structure over Santiago Creek specifically dedicated to pedestrians and bicyclists. Further, the architectural design of the proposed pedestrian bridge would include visually appealing prefabricated steel truss accents. As such, the proposed project would be consistent with Policy 4.3 of the City's General Plan Urban Design Element.
Infrastructure Element	
Policy 3.3: Continue to design, install, and maintain signals, signage, street lights, and traffic control devices within rights-of-way.	**Consistent.** As discussed in Section 2.0, Project Description, the improvements proposed under the project would necessitate a traffic signal modification at Taft Avenue, which would be included under the proposed project. In addition, the proposed project may result in traffic signals and street lighting relocations, the replacements of which would be strategically located within the project limits. As such, the proposed project would be consistent with Policy 3.3 of the City's General Plan Infrastructure Element.
Policy 3.5: Preserve and improve existing on-street bike paths within rights-of-way.	**Consistent.** As previously stated, the proposed project would include the development of a new bridge structure across Santiago Creek just west of the existing vehicular bridge, which would carry two-way traffic for pedestrians and southbound traffic for bicyclists. As such, the proposed project would introduce a physical barrier between bicyclist traffic and vehicular traffic, which would improve bicyclist safety. Therefore, the proposed project would mark an improvement of existing bike paths within the project limits, and would be consistent with Policy 3.5 of the City's General Plan Infrastructure Element.
Noise Element	
Policy 2.3: Encourage the use of alternative transportation modes such as walking, bicycling, mass transit, and alternative fuel vehicles to minimize traffic noise.	**Consistent.** As discussed throughout this IS/MND, one of the improvements under the proposed project would be a new bridge structure crossing over Santiago Creek, just west of the existing vehicular bridge. The proposed bridge would be specifically dedicated to southbound bicyclist traffic and both directions of pedestrian traffic. These improved bicyclist and pedestrian conditions would encourage more users of the roadway to opt for these alternative modes of transportation. As such, the proposed project would be consistent with Policy 2.3 of the City's General Plan Noise Element.
Policy 7.1: Schedule City maintenance and construction projects so that they generate noise during less sensitive hours.	**Consistent.** Please refer to Section 4.13, Noise, for a detailed analysis of the proposed project's potential impacts as they pertain to noise. As stated in Section 4.13, the proposed project's compliance with Regulatory Compliance Measure (RCM) NOI-1 would ensure that construction noise is limited to between the hours of 7:00 a.m. and 8:00 p.m. Monday through Friday and between the hours of 8:00 a.m. and 8:00 p.m. on Saturday. Construction is prohibited outside these hours and on Sundays and federal holidays. As such, construction of the proposed project would not generate substantial noise during sensitive hours. As such, the proposed project would be consistent with Policy 7.1 of the City's General Plan Noise Element.

Table 4.11.B: General Plan Consistency Analysis

Goal	Consistency Analysis
Public Safety Element	
Policy 9.1: Enhance and maintain safe pedestrian and bicycle movement through the integration of traffic control devices, crosswalks, and pedestrian-oriented lighting, into the design of streets, sidewalks, trails, and school routes throughout Orange.	**Consistent.** As previously stated, the proposed project would introduce a new pedestrian and bicyclist-oriented bridge structure adjacent to the existing vehicular bridge, which would physically separate these alternative modes of transportation from vehicular traffic and thus improve safety. In addition, the proposed bridge structure would include adequate lighting features to ensure safe passage during nighttime hours. As such, the proposed project would be consistent with Policy 9.1 of the City's General Plan Public Safety Element.
Policy 9.2: Support creation of safe routes that encourage children to walk or bike to schools and recreational facilities.	**Consistent.** As previously stated, the proposed project is located adjacent to single-family residential neighborhoods. Linda Vista Elementary School is located approximately 0.14 mile south of the project limits at 1200 N. Cannon Street. Therefore, it is reasonable to assume that school-age children residing within the surrounding neighborhoods may utilize the pedestrian and bicyclist facilities within the project limits to reach Linda Vista Elementary School, other schools, or recreational facilities because the proposed project would enhance the safety of pedestrians and bicyclists within the project limits by physically separating them from vehicular traffic and routing them on the proposed separate bridge crossing over Santiago Creek. As such, the proposed project would be consistent with Policy 9.2 of the City's General Plan Public Safety Element.
Policy 9.3: Identify and attempt to remove impediments to pedestrian and bicycle access including those associated with rail, street, freeway, and waterway crossings and poorly marked or maintained pathways and sidewalks.	**Consistent.** As previously stated, pedestrians and bicyclists utilizing Cannon Street under existing conditions share the existing bridge overcrossing with vehicular traffic. The proposed project would provide a separate bridge exclusively for bicycle and pedestrian use, which would improve mobility for these forms of transportation across the Santiago Creek waterway. As such, the proposed project would be consistent with Policy 9.3 of the City's General Plan Public Safety Element.
Growth Management Element	
Policy 1.7: Promote the expansion and development of alternative methods of transportation.	**Consistent.** The separate pedestrian and bicyclist bridge adjacent to the existing vehicular bridge would represent an expansion of pedestrian and bicyclist facilities within the project limits as they currently utilize the same bridge as vehicular traffic. This expansion would encourage increased alternative transportation (i.e., bicycle use and walking) along the project limits. As such, the proposed project would be consistent with Policy 1.7 of the City's General Plan Growth Management Element.
Circulation Element	
Policy 1.1: Plan, build, and maintain an integrated, hierarchical, and multi-modal system of roadways, pedestrian walkways, and bicycle paths throughout the City.	**Consistent.** The proposed project represents the maintenance and improvement of an existing roadway, Cannon Street, within the City's circulation network. Through the proposed pedestrian/bicyclist bridge development, the proposed project would also integrate an improved pedestrian walkway and bicycle path within the project limits. As such, the proposed project would be consistent with Policy 1.1 of the City's General Plan Circulation Element.
Policy 1.2: Identify key intersections and streets with historical or projected traffic congestion problems and apply creative traffic management measures to improve overall circulation.	**Consistent.** Please refer to Section 4.17, Transportation, for a detailed description of existing circulation conditions within the project limits. According to Section 4.17, there are several identified traffic congestion problems within the project limits, including an insufficient LOS (LOS E) operation of the Cannon Street/Taft Avenue intersection in the p.m. peak hour and turning lane queue spillover along northbound Cannon Street as it intersects with Serrano Avenue. As stated in Section 2.0, Project Description, the proposed project would function as an auxiliary lane to improve traffic conditions within the roadway, which could include the two congestion problems identified previously. As such, the proposed project would be consistent with Policy 1.2 of the City's General Plan Circulation Element.

Table 4.11.B: General Plan Consistency Analysis

Goal	Consistency Analysis
Policy 4.4: Encourage use of the bikeway system by providing adequate signage, trail markings, and other amenities.	**Consistent.** The proposed pedestrian bridge would maintain connectivity between Cannon Street and the Santiago Creek Trail and the staging area and provide a separate facility for bicyclists and pedestrians over Santiago Creek.
Policy 4.5: Ensure that pedestrian sidewalks, trails, and bikeways are safe environments through the use of crime prevention-oriented trail design features, lighting where appropriate, pedestrian and bicycle safety improvements at at-grade rail crossings, access for emergency vehicles, and links to the roadway signal system.	**Consistent.** The new pedestrian and bicyclist bridge proposed under the project would improve safety for those opting for these modes of transportation by physically separating them from vehicular traffic. Further, the proposed bridge structure would contain adequate guardrails and lighting fixtures to ensure the safety of those utilizing the bridge. As such, the proposed project would be consistent with Policy 4.5 of the City's General Plan Circulation Element.

Source: Orange General Plan (City of Orange 2010).

Zoning Ordinance. Title 17 (Zoning Ordinance) of the City's Municipal Code is the primary implementation tool for the General Plan Land Use Element and the goals and policies contained therein. For this reason, the Zoning Map must be consistent with the General Plan Land Use Map. The Land Use Policy Map indicates the general location and extent of future land use in the City. The Zoning Ordinance, which includes the Zoning Map, contains more detailed information about permitted land uses, building intensities, and required development standards.

Since the project limits consist of a roadway, the proposed project does not belong to a zone established by the City. As discussed in Section 2.0, Project Description, the zoning of parcels directly adjacent to the project limits includes Sand and Gravel Extraction District and Single Family Residential: 8,000 square feet (R-1-8).[58] The proposed project would involve the continuation and improvement of an existing roadway land use and does not propose any new land uses that would conflict with the zoning of adjacent parcels. Therefore, the proposed project would be consistent with the City's Zoning Code, and no mitigation is required.

Summary. The proposed project is consistent with the City's General Plan and all other applicable land use documents pertaining to circulation systems. Because part of the project limits border the City of Villa Park, the City of Orange will engage in coordination efforts to ensure that the proposed project is consistent with all applicable land use documents set forth by the City of Villa Park. Therefore, the proposed project would result in less than significant impacts related to conflicts with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No mitigation would be required.

[58] City of Orange. 2020. Zoning Map. September. Website: https://www.cityoforange.org/home/showpublisheddocument/40/637707607413300000 (accessed April 10, 2024).

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

4.12 MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

Impact Analysis

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

In 1975, the California Legislature enacted the Surface Mining and Reclamation Act (SMARA), which, among other things, provided guidelines for the classification and designation of mineral lands. Areas are classified on the basis of geologic factors without regard to existing land use and land ownership. The areas are categorized into four Mineral Resource Zones (MRZs):

- **MRZ-1**: An area where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2**: An area where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- **MRZ-3**: An area containing mineral deposits, the significance of which cannot be evaluated.
- **MRZ-4**: An area where available information is inadequate for assignment to any other MRZ zone.

Of the four categories, lands classified as MRZ-2 are of the greatest importance. Such areas are underlain by demonstrated mineral resources or are located where geologic data indicate that significant measured or indicated resources are present. MRZ-2 areas are designated by the State of California Mining and Geology Board as being "regionally significant." Such designations require that a Lead Agency's land use decisions involving designated areas are to be made in accordance with its mineral resource management policies and that it considers the importance of the mineral resource to the region or the State as a whole, not just to the Lead Agency's jurisdiction.

According to a map of aggregate mineral resources published by the California Department of Conservation, Division of Mines and Geology, now known as the California Geological Survey (CGS),[59] the project limits exist within Plate 4 of the Orange County-Temescal Valley Production/ Consumption Region, which is classified as 'Designated Areas Urbanized'. This map shows the project

[59] Miller, R.V. 1995. Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California, Part III - Orange County.

limits as being located within an MRZ-2 zone, or a zone where adequate information indicates the presence of significant mineral deposits. This classification is consistent with the City's General Plan Natural Resources Element, which states that mineral resources within the City are primarily limited to the sand and gravel resources contained near the Santa Ana River and Santiago Creek.[60] Cannon Street provides an above-grade crossing over Santiago Creek within the project limits, which would explain the potential presence of aforementioned sand and gravel resources.

As previously stated, the proposed project consists of the addition of a third northbound lane and new pedestrian bridge to the existing Cannon Street roadway, which would involve widening and repavement efforts. The project proposes to improve traffic operations of an existing roadway and does not propose any new land uses that would result in the extraction or loss of mineral resources. Further, these improvements would occur above-grade from Santiago Creek, and do not propose to encroach upon the waterway or its potential mineral deposits.

Under the proposed project, the Santiago Creek riverbed would not experience the loss of availability of any known mineral resource that is valuable to the region or the State residents. Therefore, impacts related to mineral resources would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

b) Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

While the California Department of Conservation Division of Mine Reclamation Mines Online (MOL) interactive map[61] does not show any mines within the City of Orange, the United States Geological Survey (USGS) online Mineral Resources Data System (MRDS) map[62] shows two D-level records of past mines located within an 0.5-mile radius of the project limits. MRDS records are classified from A to E based on completeness and consistency, indicating that D-level records are poor in both aspects. Regardless, these records show that two former mines existed within the project limits' proximity:

- **Gravel Pit:** 600 feet west of the project limits; formerly providing sand and gravel for construction uses.

- **R.C. 1 Orange Plant:** 0.44 mile east of the project limits; providing sand and gravel for construction uses.

[60] City of Orange. 2015. Orange General Plan Natural Resources Element. Website: https://www.cityoforange.org/home/showpublisheddocument/210/637698172559270000 (accessed February 5, 2024).
[61] California Department of Conservation Division of Mine Reclamation. 2016. Mines Online. Website: https://maps.conservation.ca.gov/mol/index.html (accessed February 6, 2024).
[62] United States Geological Survey (USGS). 2011. Mineral Resources Data System (MRDS). Website: https://mrdata.usgs.gov/mrds/ (accessed February 6, 2024).

While the Gravel Pit is categorized as a "Past Producer" and is therefore no longer operational, the R.C. 1 Orange Plant is considered a current producer of aggregate materials for construction-related uses. However, due to its distance from the project limits, this mine would not be affected by the proposed project. Therefore, the proposed project is not located within the immediate vicinity of a locally important mineral resource recovery site, and would not result in the loss of availability of any such sites. Therefore, impacts related to locally important mineral resource recovery sites would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

4.13 NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

The following section is based on information presented in the Noise and Vibration Impact Analysis Memorandum (Noise Memo) prepared for the proposed project in April 2024, which is included as Appendix E to this IS/MND.

Technical Background

The following provides an overview of the characteristics of sound and the regulatory framework that applies to noise within the vicinity of the project limits.

Characteristics of Sound

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dB represents a tenfold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness; similarly, each 10 dB decrease in sound level is perceived as half as loud. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements, which better represent how humans are more sensitive to sound at night. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations), the sound decreases 3 dB for each doubling of

distance in a hard site environment; however, line source noise in a relatively flat environment with absorptive vegetation decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on A-weighted decibels. CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours), and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City of Orange uses the CNEL noise scale for long-term noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum instantaneous noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}, which reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Noise impacts can be described in three categories. The first category includes audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 dB and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category includes changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels (3 dB or greater) are considered potentially significant.

Characteristics of Vibration

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors where the motion may be discernible. However, without the effects associated with the shaking of a building, there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as motion of building surfaces, the rattling of items on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Building damage is not a factor for normal operation and construction activities with the occasional exception of blasting and pile driving during construction.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Impacts with ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet of the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 feet (Federal Transit Administration

[FTA] *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual).[63] When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. For most projects, it is assumed that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, construction activities have the potential to result in ground-borne vibration that could be perceptible and annoying. Ground-borne noise is not likely to be a problem because noise arriving via the normal airborne path usually will be greater than ground-borne noise.

Ground-borne vibration has the potential to disturb people as well as damage buildings. Although it is very rare for ground-borne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile driving to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 2018). Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). RMS is best for characterizing human response to building vibration, and PPV is used to characterize the potential for damage. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as:

$$L_V = 20 \log_{10} [V/V_{ref}]$$

where L_V is the velocity in decibels (VdB), "V" is the RMS velocity amplitude, and "V_{ref}" is the reference velocity amplitude, or 1 x 10-6 inches per second (in/sec) used in the United States.

Applicable Noise Standards

The applicable noise standards governing the project limits include the criteria in the City of Orange General Plan Noise Element and Section 8.24 of the City of Orange Municipal Code.

City of Orange

General Plan Noise Element. The City of Orange General Plan Noise Element[64] has established noise standards for various land uses and has goals and policies to meet the City's noise-related goals. The City's exterior noise standard for residential uses is 65 dBA CNEL. Applicable goals and policies for the project are listed below:

- **Goal 7.0:** Minimize construction, maintenance vehicle, and nuisance noise in residential areas and near noise-sensitive land uses.
    - **Policy 7.1:** Schedule City maintenance and construction projects so that they generate noise during less sensitive hours.
    - **Policy 7.2:** Require developers and contractors to employ noise minimizing techniques during construction and maintenance operations.

[63] Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual.* FTA Report No. 0123. September. Website: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed March 2024).

[64] City of Orange. 2015. Orange General Plan Noise Element. December. Website: https://www.cityof orange.org/home/showpublisheddocument/212/637698172563500000 (accessed April 8, 2024).

- **Policy 7.3:** Limit the hours of construction and maintenance operations located adjacent to noise-sensitive land uses.

- **Policy 7.4:** Encourage limitations on the hours of operations and deliveries for commercial, mixed-use, and industrial uses abutting residential zones.

City of Orange Municipal Code. The City addresses noise in Chapter 8.24, Noise Control, of the Municipal Code. Section 8.24.050(E) of the City's Municipal Code exempts construction, repair, remodeling, or grading of any real property between the hours of 7:00 a.m. and 8:00 p.m., Monday through Saturday, or between the hours of 9:00 a.m. to 8:00 p.m. on Sundays and federal holidays. In addition, Section 8.24.050(K) of the Municipal Code exempts any maintenance or construction activity undertaken by a public agency or utility within street right-of-way.

City of Villa Park

Because the residential neighborhood west of Cannon Street, north of Taft Avenue, is located in the City of Villa Park, its noise standards would also be relevant to the proposed project.

General Plan Noise Element. The City of Villa Park General Plan Noise Element[65] has established the acceptable noise levels for noise-sensitive land uses and has goals and policies to meet the City's noise-related goals. Noise-sensitive land uses include residences, rest homes, hospitals, places of worship, and schools. The City's acceptable noise level for noise-sensitive land uses is 60 dBA CNEL. Applicable goals and policies for the project are listed below:

- **Noise Goal #1:** Continue to provide acceptable noise environments for residential land use.

  - **Policy N #1:** Continue to apply noise considerations into the community planning process to prevent noise/land use conflicts.

  - **Policy N #2:** Minimize through traffic in residential areas by promoting peripheral routing.

  - **Policy N #3:** Promote, where appropriate, sound attenuation measures. These may include the use of berms and wall barriers, the placement of buildings away from the noise source, or a combination of sound attenuation measures.

City of Villa Park Municipal Code. Section 6-6.7(e) of the City of Villa Park Municipal Code exempts construction, repair, remodeling, or grading of any real property between the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday or between the hours of 8:00 a.m. to 8:00 p.m. on Saturday. Construction is prohibited on Sunday or on a federal holiday.

Existing Noise Environment

The primary existing noise sources in the project area are transportation facilities. Traffic on Cannon Street, Serrano Avenue, Taft Avenue, and Santiago Canyon Road is a steady source of ambient noise

[65] City of Villa Park. 2010. Villa Park General Plan Noise Element. Website: http://villapark.org/Portals/0/Documents/Departments/Planning/General%20Plan/Noise%20Element/VII.%20Noise.pdf?ver=SeS8ZAYPuu6mBDm4nrU4Vw%3d%3d&timestamp=1712616513224 (accessed April 8, 2024).

in the project vicinity. Uses located adjacent to the project include residential uses, a parking lot for the Santiago Creek Trail and Bike Path, a pump station site, and a former landfill (vacant land).

Existing Noise Level Measurements

Two long-term (24-hour) noise level measurements were conducted within the limits of the project limits using Larson Davis Spark 706RC dosimeters to document the existing noise environment. The long-term noise level measurements at LT-1 were conducted from Thursday, February 22, to Friday, February 23, 2024, and at LT-2 were conducted from Tuesday, March 19, to Wednesday, March 20, 2024. Please refer to **Figure 4.13-1, Noise Monitoring Locations,** for the locations of LT-1 and LT-2 within the project limits. Table 4.13.A summarizes the results of the long-term noise level measurements along with a description of the measurement locations and noise sources that occurred during the measurements.

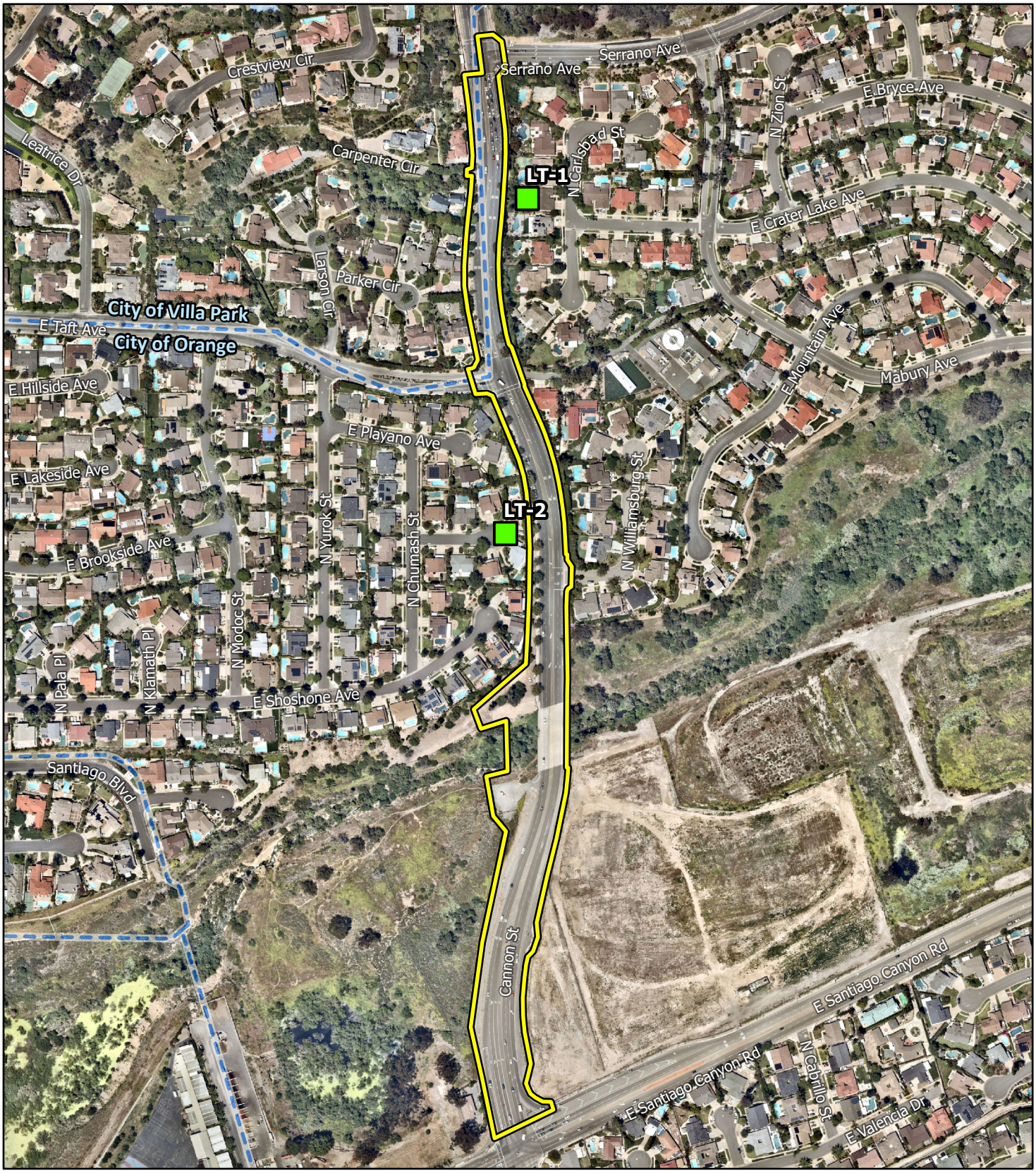
Table 4.13.A: Long-Term Ambient Noise Level Measurements

Monitoring No.	Location Description	Noise Levels (dBA)							Noise Sources
		Daytime1		Evening2		Nighttime3		CNEL	
		L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}		
LT-1	1854 N Carlsbad Street, Orange, CA. Near the center of a backyard on a tree.	55.6-60.1	69.2-80.5	54.7-55.7	68.4-70.5	43.5-55.4	59.5-69.0	59.2	Traffic on Cannon Street.
LT-2	1732 N Williamsburg Street, Orange, CA. In the backyard.	55.3-58.1	67.3-79.6	52.5-55.6	69.5-76.0	42.3-57.6	57.8-77.5	58.8	Traffic on Cannon Street.

Source: Compiled by LSA (2024).
[1] Daytime = Hours between 7:00 a.m. and 7:00 p.m.
[2] Evening = Hours between 7:00 p.m. and 10:00 p.m.
[3] Nighttime = Hours between 10:00 p.m. and 7:00 a.m.
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibel(s)
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level

Existing Traffic Noise Contours

The Federal Highway Administration (FHWA) *Highway Traffic Noise Prediction Model* (FHWA RD-77-108) was used to evaluate existing traffic-related noise conditions in the vicinity of the project limits. This model requires various parameters (including traffic volumes, vehicle mix, vehicle speed, and roadway geometry) to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. The existing average daily traffic (ADT) volumes were obtained from the Traffic Assessment Memo, included as Appendix F to this IS/MND. The standard vehicle mix for Southern California roadways was used for traffic on these roadway segments. Table 4.13.B provides the existing traffic noise levels adjacent to roadway segments in the project vicinity. These noise levels represent worst-case scenarios, which assume that no shielding is provided between the traffic and the locations where the noise contours are drawn.



LSA

Project Location

City Boundaries

Long-Term Noise Monitoring Locations

FIGURE 4.13-1

N

0 200 400

FEET

SOURCE: Nearmap (5/2023)

J:\20230893\GIS\Pro\Cannon Street Widening Project.aprx (4/25/2024)

Cannon Street Widening Project

Noise Monitoring Locations

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Table 4.13.B: Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Roadway Centerline
Cannon Street between Serrano Avenue and Taft Avenue	33,096	81	167	356	72.8
Cannon Street between Taft Avenue and Santiago Canyon Road	30,297	76	157	335	72.5

Source: Compiled by LSA (2024).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet

Impact Analysis

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Short-Term Construction Noise Impacts. Two types of short-term noise impacts would occur during construction of the proposed project. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project limits and would incrementally raise noise levels on roadways leading to the site. The pieces of construction equipment for construction activities would move on site, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the project vicinity. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance (passing trucks at 50 feet would generate up to a maximum of 84 dBA), the effect on longer-term ambient noise levels would be small because the daily construction-related vehicle trips are small when compared to the existing daily traffic volume on Cannon Street. The grubbing and land clearing phase would generate the most trips out of all of the construction phases, at 777 trips per day based on the California Emissions Estimator Model (CalEEMod, Version 2022.1) output detailed in the AQ/GHG Memo included as Appendix A to this IS/MND. According to the Traffic Assessment Memo (Appendix F to this IS/MND), Cannon Street has an existing ADT volume of 33,096 ADT between Serrano Avenue and Taft Avenue and 30,297 ADT between Taft Avenue and Santiago Canyon Road Based on the information above, construction-related traffic would increase noise by up to 0.2 dBA. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, no short-term construction-related impacts associated with worker commutes and transport of construction equipment and material to the project limits would occur, and no noise reduction measures would be required.

The second type of short-term noise impact is related to noise generated from construction activities. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. The proposed project anticipates site preparation, grading, building construction, paving, and architectural coating phases of construction. These various sequential phases change the character of the noise generated on a project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 4.13.C lists the L_{max} recommended for

Table 4.13.C: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor[1] (%)	Maximum Noise Level (L_{max}) at 50 ft[2]
Backhoe	40	80
Compactor (ground)	20	80
Compressor	40	80
Crane	16	85
Dozer	40	85
Dump Truck	40	84
Excavator	40	85
Flatbed Truck	40	84
Man Lift (Forklift)	20	85
Front-End Loader	40	80
Generator	50	82
Generator (<25KVA, VMS signs)	50	70
Grader	40	85
Jackhammer	20	85
Pavement Scarifier	20	85
Paver	50	85
Pickup Truck	40	55
Pneumatic Tools	50	85
Pump	50	77
Rock Drill	20	85
Roller	20	85
Scraper	40	85
Tractor	40	84
Welder/Torch	40	73

Source: *FHWA Highway Construction Noise Handbook*, Table 9.1 (FHWA 2006).
Note: The noise levels reported in this table are rounded to the nearest whole number.
[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] Maximum noise levels were developed based on Specification 721.560 from the CA/T program to be consistent with the City of Boston, Massachusetts, Noise Code for the "Big Dig" project.
CA/T = Central Artery/Tunnel
FHWA = Federal Highway Administration
ft = foot/feet
L_{max} = maximum instantaneous noise level

noise impact assessments for typical construction equipment included in the FHWA *Highway Construction Noise Handbook* (2006), based on a distance of 50 feet between the equipment and a noise receptor.

The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery, such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation, followed by 3 or 4 minutes at lower power settings.

Construction of the proposed project is expected to require on-site use of bulldozers, front-end loaders, and water/pickup trucks. Noise associated with the use of construction equipment is estimated to be between 55 and 85 dBA L_{max} at a distance of 50 feet from the active construction area during

grading/excavation. As shown in Table 4.13.C, the maximum noise level generated by each bulldozer is assumed to be approximately 85 dBA L_{max} at 50 feet from the bulldozer. Each front-end loader would generate approximately 80 dBA L_{max} at 50 feet. The maximum noise level generated by water trucks/pickup trucks is approximately 55 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound source with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level during this phase of construction would be 86 dBA L_{max} at a distance of 50 feet from the active construction area. Based on a usage factor of 40 percent, the worst-case combined noise level during this phase of construction would be 82 dBA L_{eq} at a distance of 50 feet from the active construction area.

The closest residence is located within 50 feet of the project construction area. Therefore, receptor locations analyzed in the Noise Memo may be subject to short-term noise reaching 86 dBA L_{max} (82 dBA L_{eq}) or higher generated by construction activities in the project limits. Although the noise generated by project construction activities would be higher than the ambient noise levels and would result in a temporary increase in the ambient noise levels, construction noise would stop once project construction is completed. Construction activities shall be limited to between the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday, and between the hours of 8:00 a.m. and 8:00 p.m. on Saturday pursuant to Section 6-6.7(e) of the City of Villa Park Municipal Code because construction activities during these hours are exempt by the City of Villa Park, and the City of Orange exempts construction activities undertaken by a public agency within street right-of-way pursuant to Section 8.24.050(K) of the City of Orange Municipal Code. The implementation of construction hour limits, as summarized in Regulatory Compliance Measure (RCM) NOI-1, would minimize disturbance to nearby residential land uses. Therefore, noise generated from project construction activities would be less than significant. No mitigation measures are required.

Long-Term Operational Impacts. The FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77 108)[66] was used to evaluate traffic-related noise conditions along the roadway segments of Cannon Street. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. The existing ADT volumes were obtained from the Traffic Assessment Memo, included as Appendix F to this IS/MND. The standard vehicle mix for Southern California roadways was used for traffic on these roadway segments. Table 4.13.D provides the traffic noise levels for the existing (2023) with and without project scenario. These noise levels represent worst-case scenarios, which assume that no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and the model printouts are provided as Attachment D to the Noise Memo.

As shown in Table 4.13.D, project-related traffic noise would increase by up to 0.1 dBA. Noise level increases below 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, no traffic noise impacts from project-related traffic on off-site sensitive receptors would occur. No mitigation measures are required.

[66] Federal Highway Administration (FHWA). Highway Traffic Noise Prediction Model (FHWA-RD-77 108).

Table 4.13.D: Existing (2023) Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Roadway Centerline	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Roadway Centerline	Increase from Baseline Conditions
Cannon Street between Serrano Avenue and Taft Avenue	33,096	81	167	356	72.8	33,096	82	167	356	72.9	0.1
Cannon Street between Taft Avenue and Santiago Canyon Road	30,297	76	157	335	72.5	30,297	78	158	336	72.5	0.0

Source: Compiled by LSA (2024).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet

Regulatory Compliance Noise Reduction Measures. The proposed project's adherence to the following regulatory compliance measure would reduce construction noise to the extent feasible and reasonable:

RCM NOI-1 **Construction Noise and Vibration.** The construction contractor shall limit construction activities to between the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday, and between the hours of 8:00 a.m. and 8:00 p.m. on Saturday. Construction is prohibited outside these hours and on Sundays and federal holidays.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is required, but adherence to RCM NOI-1 is required.
Significance Determination After Mitigation: Less Than Significant Impact

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

Short-Term Construction Impacts. Vibration generated by construction equipment can result in varying degrees of ground vibration, depending on the equipment. The operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings on soil near an active construction area respond to these vibrations, which range from imperceptible to low rumbling sounds with perceptible vibrations and slight damage at the highest vibration levels. Typically, construction-related vibration does not reach vibration levels that would result in damage to nearby structures.

The Caltrans' *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020) shows that the vibration damage threshold for continuous/frequent intermittent sources is 0.25 PPV (in/sec) for historic and old buildings. The manual shows the vibration annoyance potential criteria to be barely perceptible at 0.01 PPV (in/sec), distinctly perceptible at 0.04 PPV (in/sec), and strongly perceptible at 0.10 PPV (in/sec) for continuous/frequent intermittent sources. These thresholds were used to evaluate the potential for short-term construction-related ground-borne vibration during construction of the proposed project.

Table 4.13.E shows the reference vibration levels at a distance of 25 feet for each type of standard construction equipment from the *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020). Project construction is expected to require the use of large bulldozers and loaded trucks, which would generate ground-borne vibration levels of up to 0.089 PPV (in/sec) and 0.076 PPV (in/sec), respectively, when measured at 25 feet.

The formula for vibration transmission is provided below:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

Bulldozers and trucks used for construction of the proposed project would generate the highest ground-borne vibration levels. Based on the *Caltrans Transportation and Construction Vibration Guidance Manual*, a large bulldozer and loaded trucks would generate vibration levels of 0.089 PPV (in/sec) and 0.076 PPV (in/sec), respectively, when measured at 25 ft. The closest building structure is a residential building (19231 Parker Circle, Villa Park, California), approximately 20 feet from the project construction boundary, and this structure would experience vibration levels of up to

Table 4.13.E: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV (in/sec) at 25 ft
Vibratory roller	0.210
Large bulldozer[1]	**0.089**
Caisson drilling	0.089
Loaded trucks[1]	**0.076**
Jackhammer	0.035
Small bulldozer	0.003

Source: *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020).
[1] The equipment shown in **bold** is expected to be used on site.
ft = foot/feet PPV = peak particle velocity
in/sec = inches per second

0.124 PPV (in/sec). Although this vibration level would be strongly perceptible, vibration levels would not exceed the damage threshold of 0.3 PPV (in/sec) because the condition of the residential building would be equivalent to or better than older residential structures. Other building structures adjacent to the project would experience lower vibration levels because they are farther away and would be constructed equivalent to or better than older residential structures. Therefore, short-term construction impacts related to ground-borne vibration or ground-borne noise would be less than significant. No mitigation measures are required.

Long-Term Operational Impacts. Roads with smooth surfaces are not typically major sources of ground-borne noise or vibration. Ground-borne vibration is mostly associated with passenger vehicles and trucks traveling on roads with poor conditions, such as potholes, bumps, expansion joints, or other discontinuities in the road surface. Passenger vehicles and trucks would cause effects such as rattling of windows, and the sources are almost always airborne noise. The proposed project would include new asphalt pavement with proper maintenance. As a result, there would be no potholes, bumps, or other discontinuities in the road surface that would generate ground-borne vibration or noise impacts from vehicular traffic traveling on Cannon Street within the project limits. Therefore, ground-borne vibration impacts generated by vehicles traveling on Cannon Street within the project limits would be less than significant. No mitigation measures are required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Airport-related noise levels are primarily associated with aircraft engine noise made while aircraft are taking off, landing, or running their engines while still on the ground. The closest airports to the project area are the John Wayne Airport and the Fullerton Municipal Airport, which are located approximately 9.6 miles southwest and 10.8 miles northwest of the project limits, respectively. The project limits are outside the 60 dBA CNEL noise contour of John Wayne Airport and Fullerton Municipal Airport based

on the Airport Environs Land Use Plan for John Wayne Airport[67] and Fullerton Municipal Airport,[68] respectively. In addition, the proposed project is not located in the vicinity of a private airstrip. The proposed project is a transportation project and would not involve the introduction of residential or employment uses in the project area. Therefore, the project would not expose people residing or working in the vicinity to aviation-related excessive noise levels, and no impact would occur.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

67 Orange County Airport Land Use Commission (OCALUC). 2008. Airport Environs Land Use Plan for John Wayne Airport. April 17. Website: https://files.ocair.com/media/2021-02/JWA_AELUP-April-17-2008.pdf?VersionId=cB0byJjdad9OuY5im7Oaj5aWaT1FS.vD (accessed March 2024).

68 Orange County Airport Land Use Commission (OCALUC). 2019. Airport Environs Land Use Plan for Fullerton Municipal Airport. February 21. Website: https://files.ocair.com/media/202102/AELUP%20for%20FMA%2005092019.pdf (accessed March 2024).

4.14 POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Impact Analysis

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The proposed project includes the addition of a third northbound lane to a segment of the existing Cannon Street roadway, as well as the construction of a new pedestrian bridge west of the existing vehicular bridge where Cannon Street crosses Santiago Creek. In order to accommodate these improvements, the proposed project would involve the construction of additional pavement, widening of the roadway, addition of a raised landscaped median, and a traffic signal modification at Taft Avenue.

Implementation of the proposed project would improve existing roadway uses and would not introduce any new structures for residential use, employment, or permanent occupancy to the project limits, though it would provide temporary employment throughout the duration of project construction. Additionally, though the project would include infrastructure improvements (such as a new pedestrian bridge), the project does not propose to expand surrounding utility infrastructure in the project limits vicinity, nor does the project include roadway expansions or improvements that would indirectly induce population growth.

For the reasons stated above, the proposed project would not result in substantial unplanned population growth, nor would the project indirectly induce population growth through utility or circulation improvements. Therefore, no impacts would occur related to the inducement of unplanned population growth, either directly or indirectly. No mitigation is required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

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

As previously stated, the project proposes an additional lane and pedestrian bridge, as well as related improvements, along Cannon Street within the project limits. A majority of the proposed improvements

are expected to take place within existing City right-of-way with the exception of the new pedestrian and bike bridge/trail, which would require temporary construction easements from the County of Orange to construct the new pedestrian bridge, which would occur outside of City right-of-way. Temporary construction easements would also be needed from the County of Orange to construct the pedestrian bridge, but would cease upon completion of construction. Neither the permanent nor temporary easements would result in the acquisition of any residential properties.

There are no existing housing units or people currently living on the project limits, and the proposed project would not result in the demolition or repurposing of any existing structures. Therefore, the proposed project would not displace housing or persons, nor require or necessitate the development of replacement housing elsewhere. No impacts would occur, and no mitigation would be required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

4.15 PUBLIC SERVICES

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

Impact Analysis

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

***i. Fire protection*?**

The Orange City Fire Department (OCFD) provides fire protection, emergency medical, urban search and rescue, water rescue, and hazardous materials response services in the City. The Fire Department operates eight stations located within the City.[69] In the year 2023, the OCFD responded to 17,927 calls for service. The number of incidents within the City's jurisdiction decreased by 0.82 percent since 2022, but the number of incidents outside of the City's jurisdiction increased by 11.44 percent since 2022.[70] The closest fire station to the project limits is Station No. 8, located at 5725 Carver Lane, approximately 0.53 mile north of the northernmost project limits. Station No. 8 would likely be the first to respond to a call for service in the project limits and would, therefore, be designated the "first-in" station.

69 Orange City Fire Department (OCFD). 2023. 2023 Orange City Fire Annual Report. December. Website: https://static1.squarespace.com/static/62c47583a67bd82b35d529e7/t/6657e4b428576c38703866f6/1717036216155/2023+Orange+City+Fire+Annual+Report+-+%28Website%29.pdf (accessed July 31, 2024).

70 Ibid.

The Fire Department is staffed by 115 sworn personnel and 25 non-sworn personnel.[71] Given the City's estimated population of 139,063 as of January 1, 2023,[72] the Fire Department provides approximately 0.8 fire personnel per 1,000 residents.[73]

Because the project limits consist of a segment of the Cannon Street Roadway, the project limits would provide emergency access. As discussed in Section 4.17, Transportation, the proposed project would not result in a substantial increase in traffic congestion or significant impacts to the local circulation system that would delay emergency response vehicles. Therefore, the proposed project would not impair emergency response vehicles or increase response times.

The proposed project consists of roadway improvements and the construction of a pedestrian bridge which would not introduce any new inhabitable structures to the project limits. Therefore, the proposed project would not introduce any new permanent residents or employees to the project limits or the City. As such, the project is not anticipated to result in a significant increase in the demand for fire protection services nor would the project affect emergency response times in the long run. Construction and operation of the proposed project would not trigger the need for new or altered fire facilities. Consequently, the OCFD would be able to maintain current levels of service provided to the project limits following project implementation. Impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

ii. Police protection?

The City of Orange Police Department (Police Department) would provide police protection services to the project limits. The Police Department contains the Supportive Services Division, Investigative Services Division, Field Services Division, Bike Team, Canine Unit, Homeless Engagement Assistance and Resource Team, SWAT Team, and Traffic Bureau.

The Police Department is staffed by 170 sworn full time personnel and 78 non-sworn personnel.[74] Given the City's estimated population of 139,063 as of January 1, 2023,[75] the Police Department provides approximately 1 officer per 1,000 residents.[76] As stated above in Response 4.15(a)(i), the proposed project consists of roadway improvements and the construction of a pedestrian bridge which would not introduce any new inhabitable structures to the project limits capable of increasing the

71 City of Orange. 2023. Fiscal Year 2023-24 Budget. June 27. Website: https://www.cityoforange.org/home/showpublisheddocument/4662/638302921366700000 (accessed February 19, 2024).
72 State of California Department of Finance. 2023. Population and Housing Estimates for Cities, Counties, and the State - January 1, 2022, and 2023. May. Website: https://dof.ca.gov/forecasting/demographics/estimates-e1/ (accessed February 19, 2024).
73 139,063 / 1,000 = 139.06. 115/139.06 = 0.827 or 0.8.
74 City of Orange. 2023. Fiscal Year 2023-24 Budget. June 27. Website: https://www.cityoforange.org/home/showpublisheddocument/4662/638302921366700000 (accessed February 19, 2024).
75 State of California Department of Finance. 2023. Population and Housing Estimates for Cities, Counties, and the State - January 1, 2022, and 2023. May. Website: https://dof.ca.gov/forecasting/demographics/estimates-e1/ (accessed February 19, 2024).
76 139,063 / 1,000 = 139.06. 170 / 139.06 = 1.222 or approximately 1 officer.

number of employees or permanent residents within the City. Therefore, the project is not anticipated to result in a significant increase in the demand for police services nor would the project affect emergency response times. As such, construction and operation of the proposed project would not trigger the need for new or altered police facilities. Consequently, the Police Department would be able to maintain current levels of service provided to the project limits following project implementation. Impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

iii. Schools?

The Orange Unified School District (OUSD) provides school services to the City of Orange. Cannon Street serves as the school boundary between several elementary, middle, and high schools in the OUSD. The residential neighborhoods in the immediate project limits vicinity are served by Linda Vista Elementary School, Villa Park Elementary School, or Serrano Elementary School. The OUSD middle schools serving these neighborhoods are Cerro Villa Middle School and Santiago Middle School. The OUSD high schools serving these neighborhoods are Villa Park High School and El Modena High School.[77]

As previously stated, the proposed project consists of roadway improvements and the construction of a pedestrian bridge would not result in an increase in employees or permanent residents within the project limits or the City because no new inhabitable structures are proposed as part of the project. Therefore, the proposed project would not result in an increase in the student population at the schools serving the project limits or surrounding neighborhoods. The proposed project is not anticipated to result in a significant increase in the demand for schools, nor would the project affect performance objectives for local schools. As such, construction and operation of the proposed project would not trigger the need for new or altered school facilities. Impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

iv. Parks?

According to the Orange General Plan Natural Resources Element, the City contains approximately 256 acres of parks, City open space areas, and joint-use recreation facilities that can be used for recreational purposes.[78] In addition to parks, the City also contains equestrian and multi-purpose trails providing recreational opportunities to residents and guests.

The nearest recreational facility to the project limits is the Santiago Creek Trail and Bike Path, a paved trail spanning 6 miles from Hart Park to Cannon Street, with one branch continuing north from Walnut Avenue to Collins Avenue and connecting to the adjacent City of Villa Park. The Santiago Creek Bike

[77] Orange Unified School District (OUSD). n.d. School Locator. Website: https://portal.schoolsitelocator.com/apps/ssl/?districtcode=57964# (accessed February 19, 2024).

[78] City of Orange. 2015. Orange General Plan Natural Resources Element. Website: https://www.cityoforange.org/home/showpublisheddocument/210/637698172559270000 (accessed February 19, 2024).

Trail provides connections to three of the City's parks: Grijalva Park, Yorba Park, and Hart Park. A parking lot for the Santiago Creek Trail and Bike Path is located along the western edge of Cannon Street, just before it crosses over Santiago Creek. As stated above, Cannon Street serves as one endpoint of the Santiago Creek Trail and Bike Path.

Given the City's estimated population of 139,063 as of January 1, 2023,[79] the City currently provides 1.8 acres of parkland per 1,000 residents.[80] This represents a shortfall from the City's minimum level of 3 acres per 1,000 persons and goal of 5 acres per 1,000 persons, as set forth in Policy 5.6 of the Natural Resources Element. However, the City also contains approximately 1,187 acres of County regional parks. When considering the regional park space available to City residents, the ratio improves to approximately 10.3 acres per 1,000 persons,[81] which achieves applicable goals and policies.

The proposed project includes the addition of a third northbound lane to a segment of the existing Cannon Street roadway, as well as the construction of a new pedestrian bridge west of the existing vehicular bridge where Cannon Street crosses over Santiago Creek. In order to accommodate these improvements, the proposed project would involve the construction of additional pavement, widening of the roadway, addition of a raised landscaped median, and a traffic signal modification at Taft Avenue. The proposed project would not include any new structures that could accommodate permanent residents and would therefore not result in a direct population increase. Construction workers would be temporarily present within the project limits throughout the duration of the proposed project's construction, but these workers are likely to have their recreation needs met in their current area of residence.

The construction of the new pedestrian bridge adjacent to the existing Santiago Canyon would re-route existing bike and pedestrian traffic that currently utilizes the existing bridge overcrossing, and would not result in increased usage of existing recreational facilities. During construction of the proposed project, Cannon Street would remain open to traffic, and access to the Santiago Creek Trail and Bike Path is anticipated to remain open throughout the approximate 8-month construction period. Access to the Santiago Creek Trail and Bike Path parking lot may be temporarily affected, but ample street parking would be available within adjacent residential neighborhoods. Any delays to through pedestrian and bicycle traffic would be temporary in nature and would resolve upon completion of the proposed project's construction.

Implementation of the proposed project would not contribute to substantial physical deterioration of existing parks or recreational facilities or cause deterioration to accelerate, thereby generating a need for additional neighborhood and regional parks or recreational facilities. Impacts to parks and other recreational facilities would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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79 State of California Department of Finance. 2023. Population and Housing Estimates for Cities, Counties, and the State - January 1, 2022, and 2023. May. Website: https://dof.ca.gov/forecasting/demographics/estimates-e1/ (accessed February 19, 2024).

80 139,063 / 1,000 = 139.06. 256 / 139.06 = 1.841 or approximately 1.8 acres.

81 1,187 + 256 = 1,443. 1,443/139.06 = 10.377 or approximately 10.3 acres.

v. Other public facilities?

The City of Orange Public Library system provides library services within the City, and is comprised of one main library and three branch libraries. The El Modena Branch Library is the closest library to the project limits, located approximately 1.97 mile southwest at 380 S. Hewes Street. This branch features a community room, study rooms and a homework center, reading room, WiFi, and public-use computers.[82]

As previously discussed, the proposed project would not introduce any new permanent employees or residents to the project limits or the City and therefore would not result in a population increase. As such, the proposed project would not cause a significant increase in demand for library facilities, and impacts to library facilities would be less than significant. No mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

[82] City of Orange. n.d. Facility Directory Table List. Website: https://www.cityoforange.org/Home/Components/FacilityDirectory/FacilityDirectory/24/32?npage=2&sortn=FCName&sortd=desc (accessed February 19, 2024).

4.16 RECREATION

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

Impact Analysis

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

and

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

According to the Orange General Plan Natural Resources Element, the City contains approximately 256 acres of parks, City open space areas, and joint-use recreation facilities.[83] In addition to parks, the City also contains equestrian and multi-purpose trails providing recreational opportunities to residents and guests.

The nearest recreational facility to the project limits is the Santiago Creek Trail and Bike Path, a paved trail spanning 6 miles from Hart Park to Cannon Street, with one branch continuing north from Walnut Avenue to Collins Avenue and connecting to the adjacent City of Villa Park. The Santiago Creek Bike Trail provides connections to three of the City's parks: Grijalva Park, Yorba Park, and Hart Park.

A parking lot for the Santiago Creek Trail and Bike Path is located along the western edge of Cannon Street, just before it crosses over Santiago Creek. As stated above, Cannon Street serves as one endpoint of the Santiago Creek Trail and Bike Path.

The proposed project includes the addition of a third northbound lane to a segment of the existing Cannon Street roadway, as well as the construction of a new pedestrian bridge west of the existing vehicular bridge where Cannon Street crosses over Santiago Creek. In order to accommodate these improvements, the proposed project would involve the construction of additional pavement, widening of the roadway, addition of a raised landscaped median, and a traffic signal modification at Taft Avenue. The proposed project would not include any new structures that could accommodate permanent

[83] City of Orange. 2015. Orange General Plan Natural Resources Element. Website: https://www.cityoforange.org/home/showpublisheddocument/210/637698172559270000 (accessed February 19, 2024).

residents and would therefore not result in a direct population increase. The construction of the new pedestrian bridge adjacent to the existing Santiago Canyon would re-route existing bike and pedestrian traffic that currently utilizes the existing bridge overcrossing, and would not result in increased usage of existing recreational facilities. During construction of the proposed project, Cannon Street would remain open to traffic, and access to the Santiago Creek Trail and Bike Path is anticipated to remain open throughout the approximate 8-month construction period. Access to the Santiago Creek Trail and Bike Path parking lot may be temporarily affected, but ample street parking would be available within adjacent residential neighborhoods. Any delays to through pedestrian and bicycle traffic would be temporary in nature and would resolve upon completion of the proposed project's construction.

Implementation of the proposed project would not contribute to substantial physical deterioration of existing parks or recreational facilities or cause deterioration to accelerate, thereby generating a need for additional neighborhood and regional parks or recreational facilities. Impacts to parks and other recreational facilities would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

4.17 TRANSPORTATION

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

The following section is based in part on the *Proposed Improvements to Cannon Street Traffic Assessment Memorandum* (Traffic Assessment Memo) prepared for the proposed project by LSA in October 2024, which is provided as Appendix F to this IS/MND.

Impact Analysis

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

Construction of the proposed project would be required to comply with the California Department of Transportation (Caltrans) Standard Specifications (2023), the City of Orange Standard Plans and Specifications (2016), and the Standard Specifications for Public Works Construction (Greenbook 2021), and would therefore be consistent with these regulations.

As stated in Section 2.0, Project Description, the City's General Plan Circulation and Mobility Element[84] classifies Cannon Street as a Major Arterial roadway, which can accommodate up to 50,700 vehicles on an average weekday at level of service (LOS) D conditions. At the local level, the General Plan Circulation and Mobility Element establishes LOS D as the lowest acceptable level of service for both roadway segments and peak-hour signalized intersection movements. At the regional level, Orange County's Congestion Management Plan (CMP) specifies LOS E as the operating standard for roadways and intersections on the CMP highway system. However, the project limits are not included in the Orange County CMP.

Project-related transportation and access impacts were analyzed in the Traffic Assessment Memo. As part of the preparation of the Traffic Assessment Memo, an independent data collection company was contracted to survey daily traffic volumes within the project limits on April 4, 2023. Table 4.17.A below summarizes the daily traffic volumes within the project limits, while Table 4.17.B summarizes the traffic volumes during peak hours.

[84] City of Orange. 2015. Orange General Plan Circulation and Mobility Element. Website: https://www.cityoforange.org/home/showpublisheddocument/192/637698172525970000 (accessed April 10, 2024).

Table 4.17.A: Cannon Street Daily Traffic Volume

	LOS E Capacity	Existing Volume	Volume to Capacity	LOS
Between Serrano Avenue and Taft Avenue	37,500	33,096	0.88	D
Between Taft Avenue and Santiago Canyon Road	37,500	30,297	0.81	D

Sources: Orange General Plan Circulation and Mobility Element; Counts Unlimited (2023).
LOS = level of service

Table 4.17.B: Cannon Street Peak-Hour Traffic Volume

	Northbound	Southbound	Total
Between Serrano Avenue and Taft Avenue			
A.M. Peak Hour (7:30-8:30 a.m.)	796	2,325	3,121
P.M. Peak Hour (5:00-6:00 p.m.)	2,511	1,019	3,530
Between Taft Avenue and Santiago Canyon Road			
A.M. Peak Hour (7:30-8:30 a.m.)	748	2,269	3,017
P.M. Peak Hour (5:00-6:00 p.m.)	2,265	937	3,202

Source: Counts Unlimited (2023).

Intersection operating conditions within the project limits were evaluated using the intersection capacity utilization (ICU) methodology and the Highway Capacity Manual (HCM) methodology. The ICU methodology compares the volume-to-capacity (v/c) ratios of conflicting turn movements at an intersection, sums these critical conflicting v/c ratios for each intersection approach, and determines the overall ICU. The resulting ICU, or delay, is expressed in terms of LOS, where LOS A represents free-flow activity and LOS F represents overcapacity operation. As previously stated, the City has established LOS D as the lowest acceptable level of service for both roadway segments and peak-hour signalized intersection movements.

The HCM methodology calculates the delay experienced by vehicles passing through the intersection. For two-way stop controlled intersections, this analysis reports the delay for the most delayed approach. The relationship between LOS and delay for signalized and unsignalized intersections is summarized in Table 4.17.C, below.

Table 4.17.C: Intersection LOS Criteria

LOS	Signalized ICU (v/c ratio)	Unsignalized Intersection Delay (seconds)
A	0.00–0.60	≤10.0
B	0.61–0.70	>10.0 and ≤15.0
C	0.71–0.80	>15.0 and ≤25.0
D	0.81–0.90	>25.0 and ≤35.0
E	0.91–1.00	>35.0 and ≤50.0
F	> 1.00	>50.0

ICU = intersection capacity utilization
LOS = level of service
v/c = volume-to-capacity

According to the City's Traffic Impact Analysis Guidelines, a project traffic impact occurs when it creates a deficiency to an unsignalized intersection where the LOS deteriorates from an acceptable LOS to and unacceptable LOS, or if the effect of the development traffic is greater than or equal to 10 percent of the existing delay at an already unacceptable LOS and the intersection meets a signal warrant.

Peak-hour intersection turn volumes were collected at three intersections within the project limits: Cannon Street/Serrano Avenue, Cannon Street/Taft Avenue, and Cannon Street/Santiago Canyon Road. According to the Traffic Assessment Memo, the intersection of Cannon Street/Serrano Avenue has a high volume of northbound right turns during the p.m. peak hour (1,448 vehicles). The existing LOS of each intersection is summarized below in Table 4.17.D.

Table 4.17.D: Existing Level of Service Summary

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
Cannon St/Serrano Ave	0.734	C	0.548	A
Cannon St/Taft Ave	0.877	D	0.943	E
Cannon St/Santiago Cyn Rd	0.729	C	0.746	C

Source: Compiled by LSA (2023).
ICU = Intersection Capacity Utilization
LOS = level of service

As shown in Table 4.17.D, all three intersections within the project limits operate at satisfactory LOS under existing conditions, with the exception of the Cannon Street/Taft Avenue intersection, which operates at LOS E in the p.m. peak hour. A turning lane queueing analysis of each intersection was also conducted, as shown in Table 4.17.E, below.

Table 4.17.E: Existing Peak Hour Turning Lane Queues

Intersection	Storage Length (ft)	Queue Length (ft)	
		AM Peak Hour	PM Peak Hour
Cannon Street/Serrano Avenue			
Northbound Right	185	5	125
Southbound Left	213	45	109
Westbound Left	325	286	151
Cannon Street/Taft Avenue			
Northbound Left	170	135	69
Southbound Left	75	0	0
Cannon Street/Santiago Canyon Road			
Northbound Left	80	145	82
Southbound Left	383	460	176
Southbound Right	263	584	116
Eastbound Left	316	129	451
Westbound Left	140	36	68

Source: Compiled by LSA (2023).
ft = foot/feet

As shown in Table 4.17.E, existing traffic volume results in several queues exceeding the storage length of turn pockets. At the intersection of Cannon Street/Santiago Canyon Road, the northbound left-turn pocket is exceeded by two vehicles in the a.m. peak hour, the southbound left-turn pocket is exceeded by three vehicles in the a.m. peak hour, and the eastbound left-turn pocket is exceeded by six vehicles in the p.m. peak hour. At each of these locations, stacking likely extends into the painted median with little impact to the through traffic lanes. At the intersection of Cannon Street/Santiago Canyon Road, the southbound right-turn lane queue generated by 743 vehicles in the a.m. peak hour is more than double the storage length provided in the a.m. peak hour, according to the HCM calculations, which accounts for the overlap signal phase for this movement. This a.m. peak hour queue likely blocks the exclusive southbound through lane.

A second northbound right-turn lane was recently added to the intersection of Cannon Street/Serrano Avenue to accommodate existing demand. While the intersection of Cannon Street/Serrano Avenue currently has dual northbound right-turn lanes, the existing turn pocket is 185 feet, providing queueing space for 7 or 8 vehicles. A queue exceeding 7 or 8 vehicles would first begin to obstruct the northbound bicycle lane, then the second northbound through lane. At the intersection of Cannon Street/Serrano Avenue the HCM calculations predict that a 125-foot queue would form in the p.m. peak hour even with dual northbound right-turn lanes if both lanes are evenly utilized. Prior to installation of the second northbound right-turn lane, the 1,448 vehicles in the p.m. peak hour would form a queue 1,272 feet in length, the queue extending south of the Cannon Street/Taft Avenue intersection. Installation of the second northbound right-turn lane reduced queueing at the intersection, but the high volume of vehicles making this movement still use much of the northbound through capacity along the Cannon Street corridor.

The proposed project would extend the existing northbound right-turn lanes at Cannon Street/Serrano Avenue (as an auxiliary lane) approximately 2,500 feet until 500 feet north of the intersection of Cannon Street/Santiago Canyon Road. This would result in one continuous lane from the westbound free-right turn at Cannon Street/Santiago Canyon Road to the northbound right-turn lanes at Cannon Street/ Serrano Avenue. As a result of the proposed project, the high volume of vehicles traveling from westbound Santiago Canyon Road, through northbound Cannon Street, to eastbound Serrano Avenue would not be required to make any lane changes.

As such, the proposed project is not anticipated to lead to a substantial or measurable increase in vehicle travel that could create a deficiency to an unsignalized intersection where the LOS deteriorates from an acceptable LOS to an unacceptable LOS, or contribute traffic greater than or equal to 10 percent of the existing delay at an already unacceptable LOS. As such, the proposed project's traffic impacts would be less than significant based on the City's General Plan Circulation and Mobility Element criteria.

Alternative Transportation Facilities

Bicycle paths and sidewalks exist to various degrees throughout the project limits. A 10-foot-wide Class I off-street bicycle path (part of the Santiago Creek Trail and Bikepath) is provided on the west side of Cannon Street between Santiago Canyon Road and the Santiago Creek Trail and Bikepath bicycle parking area (approximately 1,200 feet south of Taft Avenue). Class II on-street bicycle lanes of approximately 4–6 feet in width are provided on both sides of Cannon Street in this area as well. The bicycle lanes continue north to Serrano Avenue. For a portion of that distance, the bicycle lane on the west side of Cannon Street is limited to 4 feet, including the gutter, which could potentially discourage users.

A sidewalk is provided along the east side of Cannon Street between Serrano Avenue and Santiago Creek. On the west side of Cannon Street, however, a portion of sidewalk is missing between Serrano Avenue and Taft Avenue. In addition, pedestrians must share the Santiago Creek Trail and Bikepath along the western edge of Cannon Street south of the Santiago Creek Trail and Bikepath bicycle parking area.

The proposed project would include a new bicyclist and pedestrian bridge spanning Santiago Creek just west of the existing vehicular bridge. The new bridge would clear span the creek and is expected to consist of a prefabricated steel truss, approximately 170 feet long and 12 feet wide. The new bridge would carry two-way traffic for pedestrians and southbound traffic for bicyclists and would increase safety by creating a physical separation between vehicular traffic and pedestrians or bicyclists. This would represent an improvement from existing conditions pertaining to pedestrian and bicycle facilities. Therefore, the proposed project would not conflict with adopted plans, programs, ordinances, or policies regarding public transit, bicycle, or pedestrian facilities.

As established in Response 4.11(a), in Section 4.11, Land Use and Planning, the proposed project would be consistent with applicable General Plan Circulation and Mobility Element policies. Therefore, the proposed project would result in a less than significant impact related to conflicts with an applicable plan, program, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. No mitigation would be required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law, which directed the Governor's Office of Planning and Research (OPR) to establish new CEQA guidance for jurisdictions that removes the LOS method, which focuses on automobile vehicle delay and other similar measures of vehicular capacity or traffic congestion, from CEQA transportation analysis. Rather, VMT, or other measures that promote "the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses," are now used as the basis for determining significant transportation impacts in the State.

As part of a January 2019 update to the *State CEQA Guidelines*, Section 15064.3 codifies that project-related transportation impacts are typically best measured by evaluating the project's VMT. Specifically, subdivision (b) focuses on specific criteria related to transportation analysis. Subdivision (b)(2) addresses VMT associated with transportation projects and states that projects that reduce VMT, such as pedestrian, bicycle, and transit projects, should be presumed to have a less than significant impact. Subdivision (b)(4) stipulates that Lead Agencies have the discretion to formulate a methodology that would appropriately analyze a project's VMT. The July 2020 *City of Orange Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment* (July 2020) establishes thresholds for land development projects, but does not establish thresholds for transportation projects. However, the State provides sufficient guidance to evaluate transportation project impacts related to VMT.

The *Technical Advisory on Evaluating Transportation Impacts in CEQA*[85] published by the Governor's OPR states that:

> Projects that would not likely lead to a substantial or measurable increase in vehicle travel, and therefore generally should not require an induced travel analysis, include [27 examples of which are]:
>
> - Addition of an auxiliary lane of less than one mile in length designed to improve roadway safety.
>
> - Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, two-way left turn lanes, or emergency breakdown lanes that are not utilized as through lanes.
>
> - Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit.

The proposed project would extend the existing northbound right-turn lanes at Cannon Street/Serrano Avenue (as an auxiliary lane) approximately 2,500 feet until 500 feet north of the intersection of Cannon Street/Santiago Canyon Road. This would result in one continuous lane from the westbound free-right turn at Cannon Street/Santiago Canyon Road to the northbound right-turn lanes at Cannon Street/Serrano Avenue. The continuous lane will operate as the northbound right-turn lane at Cannon Street/Serrano Avenue as over 85 percent of the capacity of this lane use turns right at Serrano Avenue. In addition to the extension of this turn lane, the project would add a new, 12-foot-wide bridge over Santiago Creek to accommodate two-way traffic for pedestrians and southbound bicyclists. North of Santiago Creek, the roadway would be widened by approximately 9 feet to improve pedestrian and bicycle facilities where the existing bicycle lane narrows to 4 feet (including the gutter). The project completes bicycle and pedestrian facilities where a gap currently exists south of Santiago Creek.

Therefore, the proposed project can be classified as an auxiliary lane less than 1 mile in length (2,500 feet) and installation of a traffic lane that is not for through traffic (extending the Cannon Street/ Serrano Avenue northbound right-turn lane). It should also be noted that the proposed project improves conditions for pedestrians and cyclists (new pedestrian bridge, widening of the west side of Cannon Street utilized by pedestrians and bicyclists, and facility gap closure). As such, the proposed project would not be anticipated to lead to a substantial increase in vehicle travel, and therefore can be presumed to have less than significant transportation impacts related to VMT under the revised *State CEQA Guidelines* and the *Technical Advisory on Evaluating Transportation Impacts in CEQA.* Therefore, the proposed project would not be inconsistent with *State CEQA Guidelines* Section 15064.3, subdivision (b), and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

[85] Governor's Office of Planning and Research (OPR). 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. April. Website: https://opr.ca.gov/docs/20180416-743_Technical_ Advisory_4.16.18.pdf (accessed April 10, 2024).

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

As previously stated, the proposed project involves the widening of Cannon Street by approximately 9 feet in order to accommodate a third northbound lane from approximately 500 feet north of Santiago Canyon Road to Serrano Avenue. South of Santiago Creek, additional pavement would be constructed to the east to widen the roadway and provide pedestrian and bicycle facilities absent in the existing condition. Removing bicycles and pedestrians from vehicle travel lanes and the roadway shoulder removes this potential hazard.

Aside from the improvements discussed above, the proposed project would continue existing uses and would not substantially alter the configuration of Cannon Street from its existing condition. No new hazardous geometric design features or incompatible land uses would be included as part of the proposed project. The proposed project would introduce one continuous lane within the project limits that would transition to the northbound right-turn lanes at Cannon Street/Serrano Avenue, which would eliminate the need for the high volume of vehicles traveling through northbound Cannon Street to eastbound Serrano Avenue to make any lane changes, thus potentially improving safety conditions within the project limits. Additionally, the design of the proposed project would be subject to review by the Orange Fire Department in coordination with the City of Orange Department of Public Works. As such, impacts related to increased hazards due to a geometric design feature or incompatible uses would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

d) Would the project result in inadequate emergency access?

According to Figure PS-4, Generalized Evacuation Corridors, of the City's General Plan Public Safety Element,[86] Cannon Street is not designated as an evacuation corridor. Cannon Street does intersect with the Chapman Avenue evacuation corridor, but this intersection falls outside of the project limits and therefore is not anticipated to be affected by the proposed project. As noted by the City's Emergency Operations Plan, evacuation routes for emergency situations are contingent upon the scale and location of the emergency, and would change depending on the direction of evacuation required by the situation.

The proposed project would not result in any substantial traffic impacts or queueing on nearby streets during short-term construction activities with utilization of lane shifts, and all construction equipment would be staged within the project limits or within nearby temporary construction easements. Long-term operations of the proposed project would result in improved movement along the Cannon Street roadway, particularly in the northbound direction, thus improving the mobility of emergency vehicles along Cannon Street when necessitated by an emergency event. As such, emergency access would not be impaired by the proposed project.

Further, the improvements and pedestrian bridge proposed under the project would be reviewed and approved by the Orange City Fire Department and the City as part of the City's Design Review process to ensure compliance with all applicable codes and ordinances for emergency vehicle access. Therefore,

[86] City of Orange. 2015. Orange General Plan Public Safety Element. Website: https://www.cityoforange.org/home/showpublisheddocument/214/637698172567530000 (accessed February 9, 2024).

with Fire Department review of the project plans, the proposed project's impacts related to emergency access would be less than significant, and no mitigation would be required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

4.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	☐	☐	☒	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? 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 Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Effective July 1, 2015, Assembly Bill (AB) 52 requires meaningful consultation with California Native American Tribes on potential impacts to Tribal Cultural Resources, as defined in Public Resources Code (PRC) Section 21074 as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are eligible for inclusion in the California

Register of Historical Resources or included in a local register of historical resource. Per PRC Section 21080.3.1, a tribe must submit a written request to the relevant lead agency if it wishes to be notified of proposed projects in its traditionally and culturally affiliated area. The lead agency must provide written formal notification to the tribes that have requested it within 14 days of determining that a project application is complete or of deciding to undertake a project. The tribe must respond to the lead agency within 30 days of receipt of the notification if it wishes to engage in consultation on the project, and the lead agency must begin the consultation process within 30 days of receiving the request for consultation. Consultation concludes when either (1) the parties agree to mitigation measures to avoid a significant effect, if one exists, on a tribal cultural resource, or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. AB 52 also addresses confidentiality during tribal consultation per PRC Section 21082.3(c).

The Native American Heritage Commission (NAHC) is a State agency that maintains the Sacred Lands File (SLF), an official list of sites that are of cultural and religious importance to California Native American tribes. The NAHC was contacted on March 3, 2023, in order to request a SLF search for the project limits, as well as a list of potential Native American contacts for consultation. The NAHC responded on March 10, 2023, that the SLF search was negative for the project limits. The NAHC also provided a list of suggested Native American contacts for consultation outreach efforts.

In compliance with AB 52, letters have been distributed to local Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project and have previously requested to be notified of future projects proposed by the City. The letters, which were sent on July 18, 2023, via certified mail, provided each tribe with an opportunity to request consultation with the City regarding the proposed project. The purpose of this effort was to provide Native American tribes with the opportunity for meaningful participation and to identify known tribal cultural resources on or near the project limits. The record of tribal consultation efforts is included as Appendix G to this IS/MND. The following tribes received letters pursuant to AB 52:

- San Gabriel Band of Mission Indians, Anthony Morales, Chief
- Gabrieleño Band of Mission Indians – Kizh Nation, Andrew Salas, Chairperson
- Torres Martinez Desert Cahuilla Indians, Michael Mirelez, Cultural Coordinator
- Gabrielino/Tongva Nation, Sandonne Goad, Chairperson

In compliance with AB 52, tribes had 30 days from the date of receipt of notification to request consultation on the proposed project. Information provided through the AB 52 tribal consultation process typically informs the assessment as to whether tribal cultural resources are present within the project limits and the significance of any potential impacts to such resources.

The only response received during the open tribal consultation period was from a representative of the Gabrieleño Band of Mission Indians – Kizh Nation. The Kizh Tribe engaged in the formal consultation process with the City, during which they determined that utilization of standard mitigation measures was acceptable to address the Tribe's concerns regarding the proposed project. As such, Mitigation Measures (MMs) TCR-1 through TCR-3 are applicable to the proposed project, as discussed below. With this agreement, the consultation was closed on September 15, 2023.

Because no other tribes contacted on July 18, 2023, indicated the presence of tribal cultural resources within the project limits, no tribal cultural resources are known to exist within the project limits. Further, as discussed previously in Section 4.5, Cultural Resources, of this IS/MND, no known cultural resources have been documented within the project limits or in the direct vicinity of the project limits

based on archival research and field surveys. In addition, low potential exists for the proposed project to impact tribal cultural resources due to significant prior disturbance from past grading and development activities on the project limits and in the surrounding area. Regulatory Compliance Measure (RCM) CUL-1, identified in Section 4.5, sets forth procedures for handling inadvertent discoveries of human remains, including those determined to be Native American. Based on the lack of known tribal cultural resources within the project limits and with the incorporation of RCM CUL-1 and MMs TCR-1 through TCR-3, impacts to tribal cultural resources would be less than significant.

Mitigation Measures:

MM TCR-1 Retain a Native American Monitor Prior to Commencement of Ground Disturbing Activities.

A. The project lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching.

B. A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity.

C. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the types of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered TCRs, including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs will be provided to the lead agency upon written request to the Tribe.

D. On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh from a designated point of contact for the lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project limits or in connection with the project are complete; or (2) a determination and written notification by the Kizh to the lead agency that no future, planned construction activity and/or development/construction phase at the project limits possesses the potential to impact Kizh TCRs.

E. Upon discovery of any TCRs, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Kizh monitor

and/or Kizh archaeologist. The Kizh will recover and retain all discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural, and/or historic purposes.

MM TCR-2 Unanticipated Discovery of Human Remains and Associated Funerary Objects.

A. Native American human remains are defined in Public Resources Code (PRC) 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC Section 5097.98, are also to be treated according to this statute.

B. If Native American human remains and/or grave goods are discovered or recognized in the project limits, then all construction activities shall immediately cease. California Health and Safety Code Section 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and all ground-disturbing activities shall immediately halt and shall remain halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe they are Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC), and PRC Section 5097.98 shall be followed.

C. Human remains and grave/burial goods shall be treated alike per California PRC Section 5097.98(d)(1) and (2).

D. Construction activities may resume in other parts of the project limits at a minimum of 200 feet away from discovered human remains and/or burial goods, if the Kizh determines in its sole discretion that resuming construction activities at that distance is acceptable and provides the project manager express consent of that determination (along with any other mitigation measures the Kizh monitor and/or archaeologist deems necessary). (CEQA Guidelines Section 15064.5(f).)

E. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods. Any historic archaeological material that is not Native American in origin (non-TCR) shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.

F. Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.

MM TCR-3 Procedures for Burials and Funerary Remains.

A. As the Most Likely Descendant ("MLD"), the Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains.

B. If the discovery of human remains includes four or more burials, the discovery location shall be treated as a cemetery and a separate treatment plan shall be created.

C. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects. Cremations will either be removed in bulk or by means as necessary to ensure complete recovery of all sacred materials.

D. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed.

E. In the event preservation in place is not possible despite good faith efforts by the City of Orange Public Works Department, before ground-disturbing activities may resume in the project limits, the landowner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects.

F. Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be in the project limits but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.

G. The Tribe will work closely with the project's qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be prepared and shall include (at a minimum) detailed descriptive notes and sketches. All data recovery data recovery-related forms of documentation shall be approved in advance by the

Tribe. If any data recovery is performed, once complete, a final report shall be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.

Significance Determination: Potentially Significant Impact
Mitigation Measures: As noted in RCM CUL-1 and MMs TCR-1, TCR-2, and TCR-3.
Significance Determination After Mitigation: Less than Significant Impact

4.19 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Impact Analysis

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

Water. The Water Division of the City of Orange Public Works Department provides domestic water service to the City of Orange, including the project limits.[87] According to the City's 2020 Urban Water Management Plan (UWMP),[88] approximately 77 percent of the City's water supply is sourced from groundwater supplies from the Orange County Groundwater Basin via 12 active wells. The rest of the supply consists of 18 percent imported water and 5 percent surface water. The City imports water from the Metropolitan Water District of Southern California, sourced from the Colorado River via the Colorado River Aqueduct (CRA) and the Lake Oroville watershed in Northern California via the State Water Project. The water obtained from these sources is treated at the Robert B. Diemer Filtration Plant

87 City of Orange. n.d.-b. Water Division. Website: https://www.cityoforange.org/residents/water-division (accessed February 8, 2024).

88 City of Orange. 2021. 2020 Urban Water Management Plan Final. November. Website: https://www.cityoforange.org/home/showpublisheddocument/1540/637873464981170000 (accessed February 8, 2024).

located in Yorba Linda prior to distribution to the City through the Municipal Water District of Orange County.

The Orange County Groundwater Basin (OC Basin) covers an area approximately 350 square miles underlying the northerly half of Orange County. The OC Basin is managed by the Orange County Water District (OCWD), which monitors groundwater levels by regulating the annual amount of allowable pumping. The OC Basin's primary source of recharge is flow from the Santa Ana River, which is diverted into recharge basins and its main Orange County tributary, Santiago Creek. Other sources of recharge water include natural infiltration, recycled water, and imported water. The City's source of surface water is local water from the Irvine Lake, which is purchased from the Serrano Water District.

The 2020 UWMP projects that by the year 2045, the City's water supply will consist of 85 percent groundwater, 11 percent imported water, and 4 percent surface water. According to the 2020 UWMP, the City's projected water supply is able to meet projected water demand in 2025, 2030, 2035, 2040, and 2045. Therefore, the City's existing water supplies are projected to meet full service demands through the year 2045.

The proposed project consists of widening an existing roadway, the construction of a new pedestrian bridge over Santiago Creek, and traffic signal modification. The proposed project would therefore not result in any new land uses that would increase water consumption beyond existing conditions. Water would be used during construction to reduce fugitive dust in compliance with South Coast Air Quality Management District (SCAQMD) Rules 402 and 403 and during operation of the irrigation of landscaped areas, including the proposed landscaped median. The amount of water used during construction and operation would be minimal, and water use for construction would cease when construction is completed.

Landscaping for the project limits, which would include native trees and shrubs, would not represent a substantial increase in water used for irrigation in comparison to existing conditions within the project limits. The proposed project would be required to comply with the principles of the State Model Water Efficient Landscape Ordinance (adopted City Resolution No. 10413) that requires improvements in the efficiency of water use in existing and new urban irrigated landscapes in California. The proposed project is subject to this ordinance and will be required to implement water-efficient landscaping design (i.e., drought-tolerant landscaping) within the project limits. Refer to Regulatory Compliance Measure (RCM) UTL-1, below. RCM UTL-1 is a standard condition based on local and State regulations or laws that serve to reduce impacts related to water usage. Adherence to RCM UTL-1 would further ensure that project-related water demand would not cause the City's Water Division's supply to be exceeded during operations of the proposed project.

Because the proposed project would not increase water demand beyond existing conditions and with adherence to RCM UTL-1, the proposed project would not require or result in the construction of new water facilities or the expansion of existing facilities, and no impact to existing water facilities would occur as a result of the proposed project.

Regulatory Compliance Measure:

RCM UTL-1 **Water Efficient Landscape Ordinance**. Prior to the issuance of a grading permit, the City of Orange Director of Community Development, or designee, shall confirm that the Final Landscaping Plan for the proposed project is consistent with all applicable provisions outlined in the City's Landscape Water Efficiency Ordinance, as codified in City Resolution No. 10413.

Wastewater. The City's Public Works Department operates and maintains local wastewater collection facilities, which convey wastewater to the Orange County Sanitation District's (OCSD) sewer system. The City's sewer system includes 312 miles of sewer and two small sewage lift stations. Wastewater in the City is conveyed to and treated at OCSD's Reclamation Plant No. 1 in Fountain Valley or at Treatment Plant No. 2 in Huntington Beach. Reclamation Plant No. 1 has a design capacity of 108 millions of gallons per day (mgd) with average daily flow of 92 mgd. Treatment Plant No. 2 has an average daily flow of 129 mgd with a design capacity of 168 mgd.[89]

As stated previously, the proposed project includes improvements to an existing roadway in addition to a new pedestrian bridge. None of the components of the proposed project would introduce wastewater-generating uses to the project limits. As such, development of the proposed project would not contribute to the wastewater received by either OCSD treatment plant. The proposed project therefore would not require, nor would it result in, the construction or relocation of new or expanded wastewater treatment or collection facilities. Project impacts related to the construction of wastewater treatment or collection facilities would be less than significant, and no mitigation would be required.

Stormwater Drainage Facilities. Implementation of the proposed project would increase the pervious surface area within the project limits by approximately 0.1 acre**,** which could result in a slight decrease in stormwater runoff from the project limits. With implementation of the proposed project, any curb inlets affected by the proposed curb shift or road widening would be replaced along the new alignment to ensure that drainage properties within the project limits is not adversely affected. Therefore, the proposed project would not decrease the capacity of the existing stormwater drainage system through the permanent removal of any drainage facilities. As such, both outermost curbs of Cannon Street would continue to accommodate runoff water originating from the project limits. As previously discussed, the project limits currently consist of a roadway already developed with predominantly impervious surface area and the proposed project would result in a potential decrease of surface runoff in comparison to existing conditions. Therefore, the proposed project would not necessitate the expansion of existing facilities beyond the improvements included as part of the proposed project. Therefore, impacts to stormwater drainage facilities would be less than significant. No mitigation is required.

Electric Power. The City of Orange receives its electrical power from Southern California Edison (SCE), an independently owned utility.[90] Refer to Section 4.6, Energy, for a detailed discussion of the proposed project's impacts with respect to existing and projected supplies of electricity. As discussed further in Section 4.6, the proposed project would not introduce substantial new electricity demand to

[89] City of Orange. 2010. City of Orange General Plan Program Environmental Impact Report. March. Website: https://www.cityoforange.org/home/showpublisheddocument/240/637698173340500000 (accessed February 19, 2024).

[90] Southern California Edison (SCE) About Us. Website: https://www.sce.com/about-us/who-we-are#:~:text=As%20one%20of%20the%20nation%27s,represented%20across%20our%20service%20territory%20. (accessed April 23, 2024).

the project limits beyond existing conditions and therefore would not require or result in the relocation or construction of new or expanded electric power facilities, the construction of which could cause significant environmental effects. Impacts would be less than significant, and no mitigation would be required.

Natural Gas. Natural gas is provided in the City by the Southern California Gas Company (SoCal Gas). Refer to Section 4.6, for a detailed discussion related to the proposed project's impacts with respect to existing and projected supplies of natural gas. As discussed further in Section 4.6, the proposed project would not involve the use of natural gas and therefore would not require or result in the relocation or construction of new or expanded gas facilities, the construction of which could cause significant environmental effects. No impacts would occur, and no mitigation would be required.

Telecommunications. Cable, internet, and telephone services are provided to the City's residents by major third-party purveyors. Cellular services provided by all major cellular networks are available in the City. Construction activities associated with the proposed project would not increase the demand for telecommunications facilities. In addition, the proposed project would not involve the construction or relocation of new or expanded telecommunications facilities. Further, the proposed roadway improvements would not introduce any new residents to the telecommunications service area. Therefore, implementation of the proposed project would not result in impacts related to the construction or relocation of existing telecommunications facilities, and no mitigation would be required.

Summary. As the proposed project would improve existing uses on site, the supply and distribution network of utilities and service systems would generally remain unchanged. The water, wastewater, stormwater drainage, natural gas, electricity, and telecommunications needs generated by the proposed project would not exceed the existing supply and distribution network, or the available service capacities of the respective service providers. Levels of service to off-site users would not be adversely affected. Project impacts related to the relocation or construction of utilities would be less than significant with compliance with regulatory compliance measures as noted. No mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No mitigation is required, but adherence to RCM UTL-1 is required.
Significance Determination After Mitigation: Less Than Significant Impact

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

As previously stated in Response 4.19(a), above, the project would have sufficient water supplies available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years through 2045. As such, operation of the proposed project would not cause the City's Water Division's available supply to be exceeded in the single dry year or multiple dry year scenarios. Therefore, the proposed project would operate within the Water Division's current and projected water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Impacts related to water supplies would be less than significant and no mitigation is required.

Significance Determination: Less Than Significant
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant

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

Refer to Response 4.19(a). As the proposed project is limited to roadway improvements, no wastewater would be generated during construction or operation of the proposed project. As such, the proposed project would not result in any of the wastewater treatment plants discussed above exceeding wastewater treatment requirements. Development of the proposed project would not require, nor would it result in, the construction or relocation of new or expanded wastewater treatment or collection facilities. Therefore, no impacts related to wastewater generation would occur, and no mitigation would be required.

Significance Determination: No Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: No Impact

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

The proposed project would consist of roadway improvements and would generate minimal waste throughout operations. However, the proposed project would generate construction waste that would require processing in local recycling facilities and disposal in local landfills.

The City has an exclusive solid waste franchise agreement with CR&R, Inc., which provides solid trash, recyclables, and organics collection services to the City.[91] Additionally, the project limits are located within the Orange County Waste and Recycling (OCWR) service area. OCWR owns and operates three landfills in Orange County that accept municipal solid waste. These include the Frank R. Bowerman Landfill in the City of Irvine, which accepts commercial waste only; the Olinda Alpha Landfill in the City of Brea, which accepts both public and commercial waste; and the Prima Deshecha Landfill in the City of San Juan Capistrano, which also accepts both public and commercial waste. All three landfills are Class III and only accept non-hazardous municipal solid waste.

The Frank R. Bowerman Landfill at 11002 Bee Canyon Access Road in the City of Irvine is the closest OCWR landfill to the project limits, located approximately 8 miles southeast of Cannon Street. The Frank R. Bowerman Landfill spans 725 acres of land and has a projected capacity to serve Orange County until approximately 2053. Its maximum permitted solid waste intake is 11,500 tons per day (TPD) and, on average, processes 8,500 TPD.[92]

[91] City of Orange. n.d.-a. Trash, Recycling, and Organics. Website: https://www.cityoforange.org/residents/trash-recycling-and-organics (accessed February 9, 2024).

[92] Orange County Waste and Recycling. n.d.-a. Frank R. Bowerman Landfill. Website: https://oclandfills.com/landfills/frank-r-bowerman-landfill (accessed February 9, 2024).

The Olinda Alpha Landfill is located just over 8 miles northwest of the project limits at 1942 Valencia Ave in Brea. The Olinda Alpha Landfill spans 565 acres and has a projected capacity to serve Orange County until approximately 2030. Its maximum permitted solid waste intake is 8,000 TPD and its average rate is 7,000 TPD.[93]

The Prima Deshecha Landfill is located approximately 24 miles southeast of the project limits at 32250 Avenida La Pata in San Juan Capistrano. The Prime Deshecha Landfill spans 1,530 acres and has a projected capacity to serve Orange County until approximately 2102. Its maximum permitted solid waste intake is 4,000 TPD.[94]

Pursuant to various State legislation and the California Green Building Code, 65 percent of all materials generated from construction projects within the City must be diverted from landfills. To meet reporting obligations, the City of Orange requires individuals pulling permits with construction and demolition debris to provide information on where the materials will be taken and the percentage of materials diverted from the landfill, which would apply to the proposed project. Therefore, 65 percent of the construction waste generated by the proposed project would be diverted from the OCWR landfills, and the remaining waste would represent a minimal contribution to the landfills' daily capacity. Therefore, the landfills would provide adequate waste disposal capacity to accept the construction waste and minimal operations waste generated by the proposed project, and project impacts to local solid waste standards and infrastructure would be less than significant.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

The California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) requires each jurisdiction in California to divert at least 50 percent of its waste stream away from landfills either through waste reduction, recycling, or other means. According to the Orange General Plan Infrastructure Element,[95] City efforts to increase waste diversion include maximizing recycling and source reduction to ensure continued compliance with State regulations. The City plans to eliminate landfill waste by improving waste collection services, operating a curbside recycling program, and increasing community knowledge of available waste diversion practices. These efforts will collectively improve the City's total waste diversion rate.

As discussed in Response 4.19(d), waste generated during construction of the proposed project would be limited to construction debris and would not generate an excessive amount of solid waste that would exceed the capacity of the OCWR landfills. Construction waste would be disposed of in accordance with federal, State, and local regulations including AB 939 as discussed above. CR&R hauls construction waste produced within the City to a Materials Recycling Facility where the recyclable

93 Orange County Waste and Recycling (OCWR). n.d.-b. Olinda Alpha Landfill. Website: https://oclandfills.com/landfills/olinda-landfill (accessed February 9, 2024).

94 Orange County Waste and Recycling (OCWR). n.d.-c. Prima Deshecha Landfill. Website: https://oclandfills.com/landfills/prima-deshecha-landfill (accessed February 9, 2024).

95 City of Orange. 2015. Orange General Plan Infrastructure Element. Website: https://www.cityoforange.org/home/showpublisheddocument/204/637698172548000000 (accessed February 9, 2024).

items are removed for processing. Operation of the completed project would generate very limited waste material. Specifically, waste collected during maintenance of the roadway would be collected and disposed of consistent with City policies. Therefore, the proposed project would comply with all federal, State, and local statutes and regulations related to solid waste, and impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

4.20 WILDFIRE

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

Impact Analysis

a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

As previously discussed in Section 4.9, the California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas of significant fire hazards in the State through its Fire and Resources Assessment Program (FRAP). These maps place areas of California into different fire hazard severity zones (FHSZ), based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing densities, and occurrence of severe fire weather where urban conflagration could result in catastrophic losses. CAL FIRE currently identifies the proposed project limits, and the City of Orange in its entirety, as a Local Responsibility Area (LRA), in which local fire protection agencies are responsible for wildfires that occur within the area.

According to the CAL FIRE Fire and Resource Assessment Program Fire Hazard Severity Viewer, the project limits are not located within a very high fire hazard severity zone (VHFHSZ), or within a State Responsibility Area (SRA).[96] However, the land directly to the east of the project limits is considered a VHFHSZ. Despite this proximity to a VHFHSZ, the proposed project would utilize land shifts in order to maintain through access during short-term construction activities and therefore is not anticipated to result in any substantial traffic impacts or queueing on nearby streets during construction of the proposed project, as discussed in Section 4.17, Transportation. In addition, all construction

[96] California Department of Forestry and Fire Protection (CAL FIRE). 2022. Fire and Resource Assessment Program Fire Hazard Severity Viewer. Website: https://egis.fire.ca.gov/FHSZ/ (accessed February 6, 2024).

equipment would be staged within temporary construction easements and would not interfere with movement along the Cannon Street corridor.

The City has developed an Emergency Operations Plan, which sets forth emergency preparedness and response procedures, in accordance with State Office of Emergency Services guidelines. According to Figure PS-4, Generalized Evacuation Corridors, of the City's General Plan Public Safety Element,[97] Cannon Street is not designated as an evacuation corridor. The proposed project would improve mobility for northbound traffic along Cannon Street once operational, thus facilitating the movement of emergency vehicles in the event they utilize the Cannon Street roadway.

The proposed project would be required to comply with all applicable codes and ordinances for emergency vehicle access, which would ensure adequate access to, from, and on site for emergency vehicles. Adherence to these codes and ordinances would ensure that construction and operation of the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. In the long run, the proposed project would improve traffic operations along Cannon Street within the project limits, thus improving emergency response times along this corridor. As such, the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan in the event of wildfire, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

As discussed in Response 4.20(a), although the project limits are not located within a VHFHSZ, it is located directly adjacent to a VHFHSZ along the eastern boundary of Cannon Street. However, the project limits are relatively flat, and a majority of surrounding area consists of fully developed neighborhoods. Based on the surrounding scale of development, a majority of the project limits lack the combustible materials and vegetation necessary for the uncontrolled spread of a wildfire.

As previously stated, the proposed project includes various roadway improvements to Cannon Street including lane addition, widening, traffic signal modification, and a new pedestrian bridge crossing Santiago Creek. As such, the project itself would not exacerbate wildfire risks as compared to existing conditions because it would improve and continue an existing roadway use in the area and does not propose any inhabitable structures that would expose occupants to wildfire risks. Further, the project limits are not located in or near an SRA or lands classified as VHFHSZ. Therefore, due to the lack of slopes and other risk factors within the project limits, the proposed project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be less than significant, and no mitigation is required.

[97] City of Orange. 2015. Orange General Plan Public Safety Element. Website: https://www.cityoforange. org/home/showpublisheddocument/214/637698172567530000 (accessed February 9, 2024).

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

The proposed project generally involves improvements to existing infrastructure rather than the installation of new infrastructure. The only new development proposed under the project would be the new pedestrian bridge crossing Santiago Creek, which would clear span the creek and is expected to consist of a prefabricated steel truss, approximately 170 feet long and 12 feet wide. The installation of this bridge would thereby involve the use of nonflammable materials and would not exacerbate fire risk or result in impacts to the environment.

Development located within or adjacent to the identified wildland fire area, as shown in Figure PS-1, Environmental and Natural Hazard Policy Map, of the City's General Plan Public Safety Element, must prepare and implement a comprehensive fuel modification program in accordance with City regulations.

Furthermore, the project limits are not located in or near an SRA or lands classified as VHFHSZ. Design and implementation of the proposed roadway improvements would be reviewed and approved by the City's Public Works Department and the Orange City Fire Department as part of the project approval process to ensure the proposed project is compliant with all applicable design standards and regulations. Therefore, impacts related to exacerbated fire risk associated with infrastructure development would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

d) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The project limits are located in a relatively flat area and lack sloped areas capable of exposing people or structures to risks associated with landslides and other forms of slope instability. Please refer to Section 4.7, Geology and Soils, of this IS/MND, for more details regarding the topography of the project limits.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 06059C0158J (effective 12/3/2009), most of the project limits are located within Zone X, which is identified as an area of minimal flood hazard, with 0.2 percent annual chance of flood hazard. However, the portion of the project limits that crosses the San Juan Creek is located within Zone AE, which is identified as an area subject to inundation by the 1 percent annual chance flood event (100-year flood event). However, it should be noted that the portion of the project limits identified as within Zone AE

is located on the Cannon Street bridge that crosses over Santiago Creek, and is therefore elevated above the existing ground surface where the flood hazard exists. Therefore, the project limits are elevated from the risk of downstream flooding.

As described in Section 4.10, Hydrology and Water Quality, during construction activities, soil would be exposed and disturbed, drainage patterns would be temporarily altered, and there would be an increased potential for flooding compared to existing conditions. As specified in Regulatory Compliance Measure (RCM) HYD-1 would ensure that construction Best Management Practices (BMPs), such as Erosion Control and Sediment Control BMPs, would target and reduce pollutants of concern in stormwater runoff during construction, and on-site storm drain facilities would be adequately sized to accommodate stormwater runoff from the project limits so that on-site flooding would not occur. With incorporation of RCM HYD-1, the proposed project would not exposure people or structures to significant risks, such as flooding, as a result of runoff, post-fire slope instability, or drainage changes during construction. Further, the project limits are not located in or near an SRA or lands classified as VHFHSZ. Design and implementation of the proposed roadway improvements would be reviewed and approved by the City's Public Works Department and the Orange City Fire Department as part of the project approval process to ensure the proposed project is compliant with all applicable design standards and regulations.

Further, as previously stated, the proposed project proposes roadway improvements to serve drivers and pedestrians who already utilize Cannon Street and does not include any habitable structures that would increase human presence within the project limits. Therefore, the proposed project does not expose people or structures to significant risks, such as landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be less than significant, and no mitigation is required.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Impact Analysis

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Based on the discussion in Section 4.4, Biological Resources, the proposed project is anticipated to result in less than significant impacts related to habitat, wildlife species, and/or plant and animal communities with incorporation of Mitigation Measures (MMs) BIO-1 through BIO-6. After mitigation, the proposed project would not threaten or eliminate a plant or animal community nor would it substantially reduce the number or restrict the range of a rare or endangered plant or animal.

As discussed in Section 4.5, Cultural Resources, Response 4.5(a), the project limits do not contain any buildings or structures that meet any of the California Register of Historical Resources (California Register) criteria or qualify as "historical resources" as defined by CEQA. Further, the project limits are not designated as a historical/archaeological landmark by the City of Orange or the County of Orange. Therefore, the proposed project would not cause a substantial adverse change in the significance of a historical resource.

As discussed in Section 4.18, Tribal Cultural Resources, the City requested a search of the Sacred Lands File by the Native American Heritage Commission (NAHC) for the project limits. According to NAHC correspondence, no resources were noted in the database. The City did not receive any communication from the three of the four tribes that requested notification regarding the proposed

project, pursuant to Assembly Bill (AB) 52. One tribe, the Gabrieleño Band of Mission Indians – Kizh Nation, responded with a request to initiate the formal consultation process with the City, during which it was determined that utilization of standard mitigation measures was acceptable to address the Tribe's concerns regarding the proposed project. As such, Mitigation Measures (MMs) TCR-1 through TCR-3 are applicable to the proposed project, and would reduce potential impacts to tribal cultural resources to a less than significant level.

MM CUL-1 requires cultural resources monitoring during excavation activities and establishes procedures in the event of the discovery of an unknown cultural resource. With implementation of MM CUL-1, impacts to cultural resources would be less than significant. In addition, MM GEO-2 has been incorporated to address the discovery of paleontological resources should they be unearthed during construction. With the application of MM GEO-2 potential impacts to previously undiscovered paleontological resources would be less than significant.

For the reasons stated above, the proposed project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. Impacts would be less than significant with implementation of the mitigation measures identified above.

Mitigation Measures: Refer to MMs BIO-1 through BIO-6 (in Section 4.4, Biological Resources), MM CUL-1 (in Section 4.5, Cultural Resources), and MM GEO-2 (in Section 4.7, Geology and Soils).

Significance Determination: Potentially Significant Impact
Mitigation Measures: Refer to MMs BIO-1 through BIO-6, MM CUL-1, MM GEO-2, and MM TCR-1 through TCR-3.
Significance Determination After Mitigation: Less Than Significant Impact

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

The proposed project involves improvements to an existing roadway and would not introduce any new land uses to the project limits. The proposed project would rely on and can be accommodated by the existing infrastructure, public services, and utilities. Based on Section 2.0, Project Description, and the preceding responses, impacts related to the proposed project are less than significant or can be reduced to less than significant levels with the incorporation of mitigation measures. Because all potentially significant impacts can be mitigated to a less than significant level, such impacts would not be cumulatively significant. The proposed project's contribution to any significant cumulative impacts would therefore be less than cumulatively considerable.

Significance Determination: Less Than Significant Impact
Mitigation Measures: No Mitigation is Required
Significance Determination After Mitigation: Less Than Significant Impact

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

Previous sections of this IS/MND reviewed the proposed project's potential impacts, and standard conditions and mitigation measures related to Biological Resources (MMs BIO-1 through BIO-6 and RCM BIO-1 and RCM BIO-2), Cultural Resources (MM CUL-1 and RCM CUL-1), Geology and Soils (MMs GEO-1 through GEO-4), Hydrology and Water Quality (RCM HYD-1 through RCM HYD-4), Noise (RCM NOI-1), Tribal Cultural Resources (MMs TCR-1 through TCR-3), and Utilities and Service Systems (RCM UTL-1). As concluded in these previous discussions, the proposed project would result in less than significant environmental impacts with adherence to the Regulatory Compliance Measures and implementation of the recommended Mitigation Measures. Therefore, the proposed project would not result in environmental impacts that would cause substantial adverse effects on human beings.

Mitigation Measures: Refer to MMs BIO-1 through BIO-6 (in Section 4.4, Biological Resources), MM CUL-1 (in Section 4.5, Cultural Resources), MMs GEO-1 through GEO-4 (in Section 4.7, Geology and Soils), and MMs TCR-1 through TCR-3 (in Section 4.18, Tribal Cultural Resources).

SECTION 5.0 MITIGATION MONITORING AND REPORTING PROGRAM

5.1 MITIGATION MONITORING REQUIREMENTS

Public Resources Code (PRC) Section 21081.6 (enacted by the passage of Assembly Bill [AB] 3180) mandates that the following requirements shall apply to all reporting or mitigation monitoring programs:

The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of a Responsible Agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the Lead Agency or a Responsible Agency, prepare and submit a proposed reporting or monitoring program.

The Lead Agency shall specify the location and custodian of the documents or other material which constitute the record of proceedings upon which its decision is based. A public agency shall provide the measures to mitigate or avoid significant effects on the environment that are fully enforceable through permit conditions, agreements, or other measures. Conditions of project approval may be set forth in referenced documents which address required mitigation measures or in the case of the adoption of a plan, policy, regulation, or other project, by incorporating the mitigation measures into the plan, policy, regulation, or project design.

Prior to the close of the public review period for a draft Environmental Impact Report (EIR) or Mitigated Negative Declaration (MND), a Responsible Agency, or a public agency having jurisdiction over natural resources affected by the project, shall either submit to the Lead Agency complete and detailed performance objectives for mitigation measures which would address the significant effects on the environment identified by the Responsible Agency or agency having jurisdiction over natural resources affected by the project, or refer the Lead Agency to appropriate, readily available guidelines or reference documents. Any mitigation measures submitted to a Lead Agency by a Responsible Agency or an agency having jurisdiction over natural resources affected by the project shall be limited to measures that mitigate impacts to resources which are subject to the statutory authority of, and definitions applicable to, that agency. Compliance or non-compliance by a Responsible Agency or agency having jurisdiction over natural resources affected by a project with that requirement shall not limit that authority of the Responsible Agency or agency having jurisdiction over natural resources affected by a project, or the authority of the Lead Agency, to approve, condition, or deny projects as provided by this division or any other provision of law.

5.2 MITIGATION MONITORING PROCEDURES

The mitigation monitoring and reporting program has been prepared in compliance with PRC Section 21081.6. The program describes the requirements and procedures to be followed by the City of Orange to ensure that all mitigation measures adopted as part of the proposed project would be carried out as described in this IS/MND. Table 5.A lists each of the mitigation measures and regulatory compliance measures specified in this IS/MND and identifies the party or parties responsible for implementation and monitoring of each measure.

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures		Responsible Party	Timing for RCM or Mitigation Measure
4.1: Aesthetics			
The proposed project would not result in significant adverse impacts related to aesthetics. No mitigation is required.			
4.2: Agriculture and Forest Resources			
The proposed project would not result in significant adverse impacts related to agriculture and forest resources. No mitigation is required.			
4.3: Air Quality			
The proposed project would not result in significant adverse impacts related to air quality. No mitigation is required.			
4.4: Biological Resources			
MM BIO-1	**Pre-Construction California Legless Lizard Surveys.** If construction activities take place from September through November, a qualified biologist will conduct pre-construction surveys for California legless lizards no more than 48 hours before initial grading and/or ground-disturbing activities in or near areas of sandy, friable soil. This survey will include systematic subsurface searching, as legless lizards are fossorial (burrowing), and staking and fencing the limits of the survey areas with small-mesh construction fencing buried to a minimum depth of 6 to 10 inches below grade would reduce the likelihood of lizards reentering the construction zone. Potential direct and/or indirect impacts (e.g., noise during construction) could potentially disrupt or otherwise adversely affect bird nesting activities in and/or adjacent to the project impact area. However, implementation of the recommended avoidance measure identified below would reduce potential impacts to nesting birds to less than significant levels. Other avoidance and minimization measures identified below would address potential construction-related impacts to nesting birds.	A qualified biologist	Prior to the commencement of construction activities, if taking place from September through November
MM BIO-2	**Pre-Construction Nesting Bird Surveys and Active Nest Avoidance Buffers.** If vegetation removal, construction, or grading activities are planned to take place within the active nesting bird season (February 15 through August 31), a qualified biologist should conduct a pre-construction nesting bird survey no more than 3 days prior to the start of such activities. The nesting bird survey should include the entirety of the project limits and areas immediately adjacent to the limits that could potentially be affected by project-related activities such as noise, vibration, increased human activity, and dust. If any active bird nests are found within areas that could be directly or indirectly impacted by project-related activities, the qualified biologist should establish an appropriate buffer zone around each active nest. The appropriate buffer should be determined by the qualified biologist based on species, location, and the nature of the proposed activities. Project activities should be avoided within the buffer zone until each nest is deemed no longer active by a qualified biologist.	A qualified biologist	Prior to the commencement of construction activities, if taking place within the active nesting bird season (February 15 through August 31)

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures		Responsible Party	Timing for RCM or Mitigation Measure
MM BIO-3	**Least Bell's Vireo Protocol Surveys.** Ground disturbance or vegetation removal activities within 500 linear feet of least Bell's vireo habitat from March 1 through July 15 are not authorized. Should minor project activities (i.e., removal of equipment) be required between March 15 to August 31, focused surveys following United States Fish and Wildlife Service (USFWS) protocol for least Bell's vireo shall be conducted. The physical extent of the survey area shall include all areas within 500 feet of project disturbance. Survey results shall be submitted in writing to the California Department of Fish and Wildlife (CDFW) for review. The Permittee shall not conduct ANY project activities within 500 linear feet of least Bell's vireo habitat from March 1 through July 15 if nesting birds are present. Nesting status will be determined by a Designated Biologist with expertise with the species in question, utilizing USFWS survey protocols and CDFW review of the nest monitoring data. Least Bell's vireo falls under the "May Affect, but Not Likely to Adversely Affect" designation as defined in the Federal Endangered Species Act (FESA) Section 7(a)(2) due to permanent impacts to suitable southern cottonwood-willow riparian forest habitat. Therefore, a Federal consultation between the City of Orange and the USFWS is expected due to the modification of suitable habitat for least Bell's vireo, as currently planned and designed.	City of Orange Public Works Department	Prior to the commencement of minor project activities (i.e., removal of equipment) between March 15 to August 31
MM BIO-4	**Bat Construction Surveys.** A qualified bat biologist shall survey all suitable trees/vegetation within the project limits for bat roosts within 30 days prior to the start of project construction activities. If bats roosts are found within the project limits, the qualified bat biologist shall identify the bats to the species level and evaluate the roosts and/or colony to determine its size and significance. Proposed work in areas with no suitable habitat shall not require a bat survey, as determined by the bat biologist.	A qualified bat biologist	Within 30 days prior to the start of project construction activities.
MM BIO-5	**Tree Trimming and Removal.** To the greatest extent feasible, tree trimming/removal activities will be performed outside the bat maternity season (April 1–August 31) to avoid direct impacts to non-volant (flightless) young that may roost in trees or the bridge within the study area. This period also coincides with the typical bird nesting season. If trimming or removal of trees during the bat maternity season cannot be avoided, a qualified bat biologist will monitor tree trimming and removal activities.	City of Orange Public Works Department	Throughout the duration of the proposed project's construction
MM BIO-6	**Night Work Lighting.** If night work (i.e., between dusk and dawn) is anticipated within 100 feet of trees where known bat roosting is confirmed, night lighting will be used only in areas of active work and will be focused on the direct area(s) of work and away from the roost entrances to the greatest extent practicable. This measure would minimize visual disturbance and allow bats to continue to utilize the remainder of the area for foraging and night roosting. If bats are showing signs of distress, as determined by the	City of Orange Public Works Department, a qualified bat biologist	Throughout the duration of the proposed project's construction

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures		Responsible Party	Timing for RCM or Mitigation Measure
	bat biologist, work activities shall be modified to prevent bats from abandoning their roost or altering their behavior.		
RCM BIO-1	**Clean Water Act 401 and 404 Permits & CDFW Streambed Alteration Agreement.** Prior to the issuance of grading and construction permits, the City of Orange Public Works Department shall obtain 401 and 404 permits, issued by USACE, and a CDFW Streambed Alteration Agreement due to the permanent impacts to disturbed southwestern cottonwood-willow riparian forest within wetland/riparian habitat associated with the County of Orange Central/Coastal Natural Community Conservation Plan (NCCP) Reserve System located within the project limits.	City of Orange Public Works Department	Prior to the issuance of grading and construction permits
RCM BIO-2	**Tree Removal Permit.** Prior to the issuance of grading permits, the City of Orange Public Works Department shall obtain a Tree Removal Permit, issued by the City of Orange (City) Director of Community Services, in accordance with Section 12.32 of the City's Municipal Code.	City of Orange Director of Community Services, or designee	Prior to the issuance of grading permits
4.5: Cultural Resources			
MM CUL-1	**Cultural Resources Monitoring and Accidental Discovery.** Prior to the commencement of ground-disturbing activities, and in adherence to the recommendations of the cultural resources records search results, the City of Orange Public Works Department shall retain, with approval of the City of Orange (City) Community Development Director, or designee, a qualified archaeological monitor. A monitoring plan shall be prepared by the archaeologist and implemented upon approval by the City. Prior to the commencement of ground-disturbing activities, the City of Orange Public Works Department shall also retain a Native American monitor to be approved by the City Community Development Director, or designee, after consultation with interested tribal and Native American representatives. Both monitors shall be present full-time on the project limits during the first 10 working days when excavation activities will extend below Artificial Fill deposits into native soil. If cultural materials are discovered during excavation, a qualified professional archaeologist shall assess the nature and significance of the find and determine if any additional study or treatment of the find is warranted. Additional studies could include, but would not be limited to, collection and documentation of artifacts, documentation of the cultural resources on State of California Department of Parks and Recreation Series 523 forms, or subsurface testing. If further monitoring is warranted, it shall continue until the monitoring archaeologist determines, based on field observations, that there is no likelihood of encountering intact archaeological cultural resources. If deemed appropriate by the archaeologist, subsequent monitoring may be reduced from full-time to part-time, or to spot-checking. Project personnel shall not collect or move any archaeological materials or human remains and associated materials. To the extent feasible, project activities shall	City of Orange Community Development Director, or designee	Prior to the commencement of ground-disturbing activities

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures		Responsible Party	Timing for RCM or Mitigation Measure
	avoid these deposits. Upon completion of any monitoring activities, the archaeologist shall prepare a report documenting the methods and results of monitoring activities. The final version of this report shall be submitted to the City of Orange Community Development Department, the South Central Coastal Information Center (SCCIC), and the State Historic Preservation Office, if required.		
RCM CUL-1	**Human Remains.** In the event that human remains are encountered on the project limits, work within 50 feet of the discovery shall be redirected and the County of Orange (County) Coroner notified immediately consistent with the requirements of California Code of Regulations (CCR) Section 15064.5(e). State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. If the remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC), which shall determine and notify a Most Likely Descendant (MLD). With the permission of the property owner, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and non-destructive analysis of human remains and items associated with Native American burials. Consistent with CCR Section 15064.5(d), if the remains are determined to be Native American and an MLD is notified, the City shall consult with the MLD as identified by the NAHC to develop an agreement for treatment and disposition of the remains. Prior to the issuance of grading permits, the Director of the City Community Development Department, or designee, shall verify that all grading plans specify the requirements of CCR Section 15064.5(e), State Health and Safety Code Section 7050.5, and PRC Section 5097.98, as stated above.	City of Orange Director of Community Development, or designee	Throughout the duration of ground disturbing activities
4.6: Energy			
The proposed project would not result in significant adverse impacts related to energy. No mitigation would be required.			
4.7: Geology and Soils			
MM GEO-1	**Compliance with the Recommendations in the Foundation Report.** Prior to the issuance of demolition or grading permits, the City of Orange (City) Public Works Department shall verify that requirements and recommendations in the Foundation Report have been appropriately incorporated into the project plans. All grading operations and construction shall be conducted in conformance with all of the recommendations included in the Foundation Report, which was prepared by Earth Mechanics, Inc., titled *Foundation Report Cannon Street Widening Improvement Project Orange, California* (Foundation Report) (January 25, 2024) as well as any Final Geotechnical Reports prepared for the project. All recommendations found in the	City of Orange Public Works Department	Prior to the issuance of demolition or grading permits; during construction

Table 5.A: Mitigation and Monitoring Reporting Program

	Regulatory Compliance Measures / Mitigation Measures	Responsible Party	Timing for RCM or Mitigation Measure
	Foundation Report shall be incorporated into project design and shall include, but not be limited to: • Seismic design recommendations • Foundation type recommendations • Lateral pile solutions • Bridge abutment wall earth pressures • Approach embankments • Pavement structural section design • Construction considerations Additional site construction plans, including grading plans, shall be reviewed by the project Geotechnical Consultant prior to construction to check for conformance with all of the recommendations of the Foundation Report. Design, grading, and construction shall be performed in accordance with the requirements of the applicable seismic standards identified in the Foundation Report, as well as the recommendations of the project Geotechnical Consultant as summarized in the Foundation Report subject to review by the Public Works Department, prior to the start of grading activities.		
MM GEO-2	**Paleontological Resources Impact Mitigation Program (PRIMP).** A paleontologist who meets the qualifications established by the Society of Vertebrate Paleontology (SVP) shall be retained to develop a Paleontological Resources Impact Mitigation Program (PRIMP) for this project. The PRIMP shall be consistent with the standards of the SVP and include the methods that will be used to protect paleontological resources that may exist within the project limits, as well as procedures for monitoring, fossil preparation and identification, curation into a repository, and preparation of a report at the conclusion of grading. Paleontological monitoring and the preparation of a Report of Findings will be included as part of the PRIMP in order to monitor excavation and grading activities in deposits with high paleontological sensitivity (i.e., Old Alluvial Fan Deposits, Unit 3 and the Sespe and Vaqueros Formations, Undifferentiated) shall be monitored by a qualified paleontological monitor following a PRIMP. No monitoring is required for excavations in deposits with no or low paleontological sensitivity. If paleontological resources are encountered during the course of ground disturbance, the paleontological monitor shall have the authority to temporarily redirect construction away from the area of the find. In the event that paleontological resources are encountered when a paleontological monitor is not present, work in the immediate area of the find shall be redirected, and the paleontologist or paleontological monitor shall be	A qualified paleontologist	Prior to ground disturbing activities

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures		Responsible Party	Timing for RCM or Mitigation Measure
	contacted to assess the find for scientific significance. If determined to be scientifically significant, the fossil shall be collected from the field. Collected resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent collections of a museum repository. At the conclusion of the monitoring program, a Report of Findings shall be prepared to document the results of the monitoring program		
MM GEO-3	**Paleontological Monitoring.** Excavation and grading activities in deposits with high paleontological sensitivity (i.e., Old Alluvial Fan Deposits, Unit 3 and the Sespe and Vaqueros Formations, Undifferentiated) shall be monitored by a qualified paleontological monitor following a PRIMP. No monitoring is required for excavations in deposits with no or low paleontological sensitivity (i.e., Artificial Fill and Young Alluvial Fan Deposits above a depth of 10 feet). If paleontological resources are encountered during the course of ground disturbance, the paleontological monitor shall have the authority to temporarily redirect construction away from the area of the find. In the event that paleontological resources are encountered when a paleontological monitor is not present, work in the immediate area of the find shall be redirected, and the paleontologist or paleontological monitor shall be contacted to assess the find for scientific significance. If determined to be scientifically significant, the fossil shall be collected from the field.	A qualified paleontologist	Throughout the duration of ground disturbing activities
MM GEO-4	**Report of Findings.** Collected resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent collections of a museum repository. At the conclusion of the monitoring program, a report of findings shall be prepared to document the results of the monitoring program.	A qualified paleontologist	Within 6 months of the completion of paleontological monitoring
4.8: Greenhouse Gas Emissions			
The proposed project would not result in significant adverse impacts related to greenhouse gas emissions. No mitigation would be required.			
4.9: Hazards and Hazardous Materials			
The proposed project would not result in significant adverse impacts related to hazards and hazardous materials. No mitigation would be required.			

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures		Responsible Party	Timing for RCM or Mitigation Measure
4.10: Hydrology and Water Quality			
RCM HYD-1	**City of Orange Local Implementation Plan.** During and post-construction, the Construction Contractor shall comply with the City of Orange's (City) Local Implementation Plan (LIP) prepared as part of a compliance program to satisfy the requirement of the area-wide Drainage Area Management Plan (DAMP) and the Santa Ana Regional Water Quality Control Board (RWQCB) municipal storm water permit issued to the City. The LIP outlines protocols for citywide projects to implement in order to contribute to regional stormwater pollution control efforts and adhere to the requirements of applicable National Pollutant Discharge Elimination System (NPDES) permits described above. During construction, the Construction Contractor shall comply with appropriate pollution prevention control practices in accordance with the current edition of the "Green Book" Standard Specifications for Public Works Construction. The proposed project shall also implement Erosion and Sediment Control Plans (ESCPs) and Best Management Practices (BMPs) to manage the surface runoff from the construction site and prevent or reduce the discharge of pollutants directly or indirectly into surface waters consistent with the requirements of City's LIP. Post construction, the City shall ensure that all applicable BMPs set forth in the Orange County Drainage Area Management Plan (DAMP) and the City's LIP are being properly implemented, such as storm drain signage, landscaping with native or drought tolerant species, and landscaped areas designed to infiltrate and/or treat runoff.	Construction Contractor	During and post-construction
RCM HYD-2	**Groundwater Discharge Permit.** If groundwater dewatering is required during construction of the proposed project, the City of Orange Public Works Department shall submit a Notice of Intent (NOI) for coverage under the permit to the Santa Ana RWQCB at least 60 days prior to the start of excavation activities and anticipated discharge of dewatered groundwater to surface waters in order to obtain coverage under the General Waste Discharge Requirements for Discharges to Surface Waters That Pose an Insignificant (*De Minimis*) Threat to Water Quality (Groundwater Discharge Permit), Order No. R8-2020-0006, NPDES No. CAG998001. The construction contractor shall comply with the requirements of Order No. R8-2020-0006, NPDES No. CAG998001. Groundwater dewatering activities shall comply with all applicable provisions in the Groundwater Discharge Permit, including water sampling, analysis, treatment (if required), and reporting of dewatering-related discharges. Upon completion of groundwater dewatering activities, a Notice of Termination shall be submitted to the Santa Ana RWQCB.	City of Orange Public Works Department	During construction, in the event that groundwater dewatering is required

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures		Responsible Party	Timing for RCM or Mitigation Measure
RCM HYD-3	**MS4 Permit.** Prior to construction, the Construction Contractor shall prepare a Water Quality Management Plan (WQMP) using the City's Non-Priority Projects WQMP Preparation Guidance Manual (Non-Priority Manual), detailing the range of BMPs to be implemented as part of project operations, in accordance with the NPDES Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds Within the Orange County Region, Order No. R8-2009-0030, NPDES No. CAS618030 as amended by Order No. R8-2010-0062 (MS4 Permit). The City shall ensure the implementation of all applicable Source Control and Site Design BMPs included in the Non-Priority Manual. The City shall implement, maintain and operate all such BMPs in a timely and reasonably diligent manner.	Construction Contractor	Prior to construction
RCM HYD-4	**City of Orange Municipal Code Chapter 7.01**. During and post-construction, the Construction Contractor shall comply with Section 7.01, Water Quality and Stormwater Discharge, of the City of Orange Municipal Code. Prior to the issuance by the City of a grading permit, the Public Works Director shall review the project plans and impose terms, conditions and requirements as deemed necessary, which the proposed project shall comply with. During construction, the Construction Contractor shall implement BMPs set forth in the WQMP, the Orange County DAMP, and the City's Water Quality LIP in order to manage the surface runoff from the construction site and prevent or reduce the discharge of pollutants directly or indirectly into surface waters. Post-construction, the City shall ensure that all applicable BMPs as identified under the WQMP are being properly implemented, such as storm drain signage, landscaping with native or drought tolerant species, and landscaped areas designed to infiltrate and/or treat runoff.	Construction Contractor	During and post-construction
4.11: Land Use and Planning			
The proposed project would not result in significant adverse impacts related to land use and planning. No mitigation would be required.			
4.12: Mineral Resources			
The proposed project would not result in significant adverse impacts related to mineral resources. No mitigation would be required.			

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures		Responsible Party	Timing for RCM or Mitigation Measure
4.13: Noise			
RCM NOI-1	**Construction Noise and Vibration.** The construction contractor shall limit construction activities to between the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday, and between the hours of 8:00 a.m. and 8:00 p.m. on Saturday. Construction is prohibited outside these hours and on Sundays and federal holidays.	Construction Contractor	Throughout the duration of the proposed project's construction
4.14: Population and Housing			
The proposed project would not result in significant adverse impacts related to population and housing. No mitigation would be required.			
4.15: Public Services			
The proposed project would not result in significant adverse impacts related to public services. No mitigation would be required.			
4.16: Recreation			
The proposed project would not result in any significant adverse impacts related to recreation. No mitigation would be required.			
4.17: Transportation			
The proposed project would not result in any significant adverse impacts related to transportation. No mitigation would be required.			
4.18: Tribal Cultural Resources			
MM TCR-1	**Retain a Native American Monitor Prior to Commencement of Ground Disturbing Activities.** F. The lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching. G. A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity. H. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the types of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered TCRs,	City of Orange Public Works Department	Prior to the commencement of ground disturbing activities

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures		Responsible Party	Timing for RCM or Mitigation Measure
	including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs will be provided to the project Applicant/lead agency upon written request to the Tribe. I. On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh from a designated point of contact for the project applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project limits or in connection with the project are complete; or (2) a determination and written notification by the Kizh to the project applicant/lead agency that no future, planned construction activity and/or development/construction phase at the project limits possesses the potential to impact Kizh TCRs. J. Upon discovery of any TCRs, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Kizh monitor and/or Kizh archaeologist. The Kizh will recover and retain all discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural, and/or historic purposes.		
MM TCR-2	**Unanticipated Discovery of Human Remains and Associated Funerary Objects.** G. Native American human remains are defined in Public Resources Code (PRC) 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC Section 5097.98, are also to be treated according to this statute. H. If Native American human remains and/or grave goods are discovered or recognized in the project limits, then all construction activities shall immediately cease. California Health and Safety Code Section 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and all ground-disturbing activities shall immediately halt and shall remain halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe they are Native American, he or she shall contact, by telephone within 24	City of Orange Public Works Department	Throughout the duration of ground disturbing activities

Table 5.A: Mitigation and Monitoring Reporting Program

	Regulatory Compliance Measures / Mitigation Measures	Responsible Party	Timing for RCM or Mitigation Measure
	hours, the Native American Heritage Commission (NAHC), and PRC Section 5097.98 shall be followed. I. Human remains and grave/burial goods shall be treated alike per California PRC Section 5097.98(d)(1) and (2). J. Construction activities may resume in other parts of the project limits at a minimum of 200 feet away from discovered human remains and/or burial goods, if the Kizh determines in its sole discretion that resuming construction activities at that distance is acceptable and provides the project manager express consent of that determination (along with any other mitigation measures the Kizh monitor and/or archaeologist deems necessary). (CEQA Guidelines Section 15064.5(f).) K. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods. Any historic archaeological material that is not Native American in origin (non-TCR) shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes. L. Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.		
MM TCR-3	**Procedures for Burials and Funerary Remains.** H. As the Most Likely Descendant ("MLD"), the Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. I. If the discovery of human remains includes four or more burials, the discovery location shall be treated as a cemetery and a separate treatment plan shall be created. J. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other	City of Orange Public Works Department	Throughout the duration of ground disturbing activities

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures	Responsible Party	Timing for RCM or Mitigation Measure
items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects. Cremations will either be removed in bulk or by means as necessary to ensure complete recovery of all sacred materials. K. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. L. In the event preservation in place is not possible despite good faith efforts by the project Applicant/developer and/or landowner, before ground-disturbing activities may resume in the project limits, the landowner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. M. Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be in the project limits but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered. N. The Tribe will work closely with the project's qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be prepared and shall include (at a minimum) detailed descriptive notes and sketches. All data recovery data recovery-related forms of documentation shall be approved in advance by the Tribe. If any data recovery is performed, once complete, a final report shall be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.		

Table 5.A: Mitigation and Monitoring Reporting Program

Regulatory Compliance Measures / Mitigation Measures		Responsible Party	Timing for RCM or Mitigation Measure
4.19: Utilities and Service Systems			
RCM UTL-1	**Water Efficient Landscape Ordinance.** Prior to the issuance of a grading permit, the City of Orange Director of Community Development, or designee, shall confirm that the Final Landscaping Plan for the proposed project is consistent with all applicable provisions outlined in the City's Landscape Water Efficiency Ordinance, as codified in City Resolution No. 10413.	City of Orange Director of Community Development, or designee	Prior to the issuance of a grading permit
4.20: Wildfire			
The proposed project would not result in any significant adverse impacts to wildfire. No mitigation would be required.			
4.21: Mandatory Findings of Significance			
Refer to Mitigation Measures BIO-1 through BIO-6, MM CUL-1, MMs GEO-1 through GEO-4, and MMs TCR-1 through TCR-3.			

SECTION 6.0 LIST OF PREPARERS

6.1 CITY OF ORANGE

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- Robert Garica, Senior Planner
- Chad Ortlieb, Senior Planner
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6.2 LSA ASSOCIATES, INC.

- Deborah Pracilio, Principal, Environmental
- Amanda Johnson, Senior Environmental Planner
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- Olivia Mattair, Environmental Planner
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- Jeremy Rosenthal, Biologist
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- Ron Brugger, Senior Air Quality Specialist
- Bianca Martinez, Air Quality Specialist
- Jason Lui, Senior Noise Specialist
- Kevin Nguyendo, Noise Specialist
- Christopher Morgan, Archaeologist
- Rory Goodwin, Cultural Resources Specialist
- Jaimi Starr, Cultural Resources Coordinator

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SECTION 7.0 REFERENCES

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APPENDIX A

AQ/GHG MEMO/CALEEMOD OUTPUT (LSA ASSOCIATES, INC., JULY 2024)

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APPENDIX B

BIOLOGICAL RESOURCES ASSESSMENT (LSA ASSOCIATES, INC., APRIL 2024)

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APPENDIX C

FOUNDATION REPORT
(EARTH MECHANICS, INC., JANUARY 2024)

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APPENDIX D

PALEO ASSESSMENT
(LSA ASSOCIATES, INC., APRIL 2024)

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APPENDIX E

NOISE MEMO
(LSA ASSOCIATES, INC., APRIL 2024)

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APPENDIX F

TRAFFIC TECHNICAL ASSESSMENT MEMO (LSA ASSOCIATES, INC., OCTOBER 2024)

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APPENDIX G

NATIVE AMERICAN CONSULTATION RECORD

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