The Terrace Apartments

Initial Study/Mitigated Negative Declaration

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August 5, 2019
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INTRODUCTION

The purpose of this Initial Study/Mitigated Negative Declaration (IS/MND) is to identify any potential environmental impacts from implementation of The Terrace Apartments Project in the City of Orange, California. Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15367, the City of Orange is the Lead Agency in the preparation of this IS/MND and any additional environmental documentation required for the project. The City has discretionary authority over the proposed project. The intended use of this document is to determine the level of environmental analysis required to adequately prepare the project IS/MND and to provide the basis for input from public agencies, organizations, and interested members of the public.

The remainder of this section provides a brief description of the project location and the characteristics of the project. Section 2 includes an environmental checklist giving an overview of the potential impacts that may result from project implementation. Section 3 elaborates on the information contained in the environmental checklist, along with justification for the responses provided in the environmental checklist.

PROJECT LOCATION

The project site is located at 200 City Boulevard West in the City of Orange, Orange County, California (Figure 1: Regional Location Map). The 16.9-acre project site (Assessor’s Parcel Number [APN] 231-061-48) is bound by existing asphalt parking lots to the north and south, City Boulevard West to the east, and South Lewis Street to the west (Figure 2: Local Vicinity Map, Aerial Base). The project site is located on the Anaheim, California, United States Geological Survey (USGS) 7.5-Minute Quadrangle, San Juan Cajon de Santa Ana Land Grant (Latitude 33°47’10.39”N, Longitude 117°53’45.62”W).
The City of Orange (City) is in the north-central part of Orange County. The City of Anaheim borders the City of Orange to the north and northwest. The City of Garden Grove borders the west, and the cities of Santa Ana and Tustin, and unincorporated County of Orange, border the City of Orange to the south and east.

The site is southwest of Interstate 5 (I-5) and north of State Route (SR) 22. Regional access to the site is provided via the I-5 Freeway via The City Drive, which is located approximately 1.7 miles to the northwest.

ENVIRONMENTAL SETTING

The existing Terrace Apartments on the project site consists of approximately 16.9 acres of residential apartment area with approximately 2.5 acres of open space. The existing eight residential buildings on-site are all 3-story multi-family apartment buildings (Buildings 1-8), each with subterranean parking for tenants for a total of 520,805 square feet of floor area. The buildings were constructed in 1970. There are also four rows of detached carports with designated tenant spaces, two rows of carports located at the north face of the property, and another two are located at the south face of the property. There are a total of 607 covered carports and 179 uncovered carports.

On the northernmost border of the site, near Chapman Avenue, Building 7 (181 South Lewis Street) and Building 6 (230 City Boulevard West) are in proximity to four covered carports and an internal street. There are 57 apartment units in both Building 6 and Building 7. On the southern portion of the property, along South Lewis Street, Building 8 (201 South Lewis Street) is bordered by an adjacent uncovered parking lot to the west, as well as a covered parking lot and two tennis courts south of the building. Building 8 has 54 apartment units. On the easternmost border and main entrance of the property along City Boulevard West, are Buildings 1-5 (170, 180, 190, 210 and 220 City Boulevard West), which consist of 54 apartment units each. The buildings are in proximity to two open parking lots to the east near Building 2 and 5, and a single covered carport near Building 1. Floor spaces for each apartment building ranges from 450-square-foot (sf) studios to 1,345 sf, 2-bedroom apartments. The existing 441 apartments consist of 63 studios, 144 1-bedroom, and 234 2-bedroom apartments.

There is also a 2-story main office building at the frontage of the existing site along City Boulevard West and a pool, hot tubs, exterior patio, and additional restroom building behind the main office due west. There are also existing tennis courts at the westerly face of the building.

The site slopes gently and generally drains south towards City Parkway West. The maximum surface elevation difference of the site is approximately three feet. Additional slopes are provided around the improvements for stormwater drainage. On-site stormwater drainage is by sheet flow to catch basins and curb inlets connected to the City of Orange stormwater/sewer system.
Source: Census 2000 Data, The CaSIL.

Figure 1
Regional Location Map
Figure 2
Local Vicinity Map
Aerial Base

Legend

Project Site

Source: ESRI Imagery
Existing Surrounding Land Uses
- North—Commercial and office uses
- West—Mixed-use district, including Christ Cathedral Campus
- East—Mixed-use district, including the Outlets at Orange
- South—Commercial and office uses

The site was occupied by farmland prior to the construction of the apartments. The I-5 Freeway was built in the Orange County area by 1965. By 1970, the site was surrounded by mostly residential and commercial uses. The site has remained predominately unaltered since its original construction in 1970.

General Plan and Zoning
General Plan
According to the City of Orange General Plan Land Use Map, the site is currently designated Urban Mixed-Use (designated as “UMIX” on the land use map) (City of Orange 2010). Urban Mixed-Use designation allows development of 1.5-3.0 floor area ratio (FAR) and 30-60 dwelling units per acre. The maximum amount of dwelling units allowed on the site is 1,013. Implementation of this project would still leave the site 40 percent under the total dwelling units allowed.

Given the land use designation, the project would not require a general plan amendment.

Zoning
According to the City of Orange Zoning Map, the site is currently zoned as Urban Mixed-Use (designated as “UMU” on the zoning map) (City of Orange 2016). The intent of the “UMU” Zone is to allow a variety of land uses. This designation provides for integrated commercial, retail, high-rise office, housing, and civic uses and convenient, high-frequency transit access, innovative housing options, and pedestrian-oriented design. This zone implements the Urban Mixed-Use land designation in the General Plan. According to the City’s Land Use Element, Urban Mixed-Use zoned areas are designated as 30-60 dwelling units per acre (City of Orange 2010).

Given the underlying zoning designation of the property, the project does not require a zone change.

PROJECT DESCRIPTION
Project Purpose and Activities
The proposed project involves the redevelopment of 3.3 acres of the existing 16.9-acre multi-family apartment community. The project proposes to construct an additional three multi-family apartment buildings as part of the existing Terrace Apartments. As shown in Figure 3: Site Plan, the proposed project would add three, 4-story multi-family apartment buildings with a maximum height of 45 feet to the site (Buildings A, B, and C). This would add 177,616 square feet of floor area and a total of 167 apartment units on-site (Figures 4a and 4b: Building A&B Elevations)
(Figures 5a and 5b: Building C Elevations). The existing buildings on-site would remain for a total of 608 dwelling units on the site.

The redevelopment will also support a fire lane realignment, on-site fire hydrant relocations, and new Fire Department connections. Post development conditions will mimic the pre-development conditions, where most of the 3.3-acre project site will consist of impervious building roof area, asphalt pavement for parking stalls and fire lanes, and decorative landscape area.

The purpose of the project is to construct additional on-site housing units and accommodate the new units with appropriate utilities and fire safety features. Project activities include, but are not limited to the following:

- Demolition of existing pavements
- Demolition of existing non-retaining architectural block walls
- Excavations for new subterranean parking and building footings
- Revisions to existing drainage system
- Recompaction of on-site soil
- Grading to include pavement forming and pouring
- Installation of new utility infrastructure to support new buildings
- Removal of and repaving of a portion of existing fire lane
- Installation of new security perimeters

**Architecture and Design Features**

Overall, development of the proposed project would enhance and strengthen the character of the site and its surroundings through new landscaping, hardscape, and other improvements on-site and along the street edges. The proposed buildings have been designed to blend in with the existing structures of the apartment complex. The existing apartment complex contains 3-story stucco buildings in cream, beige, and medium brown tones with white and dark brown accents. The proposed apartments are designed to complement the current on-site apartment buildings. The final design and architectural style of the proposed building and structure are subject to review and approval by the City’s Design Review Committee.

**Site Access**

The current and primary vehicular access point is through the main entrance along City Boulevard West. The other vehicular access point is along the western border at South Lewis Street with a two-lane entry and exit, and an additional exit point near Building 7 as shown previously on Figure 3. Internal streets will provide vehicular access within the project site. Emergency vehicle circulation will be provided from all site access areas.

Pedestrian access will be provided via sidewalks to South Lewis Street and City Boulevard West. Walkways will provide internal connections to parking and recreation/amenities.
Source: VAN TILBURG, BANVARD & SODERBERGH, AIA, April 24, 2019.

Figure 3
Site Plan
1 - SITE A & B WEST ELEVATION

2 - SITE A NORTH ELEVATION

Source: VAN TILBURG, BANVARD & SODERBERGH, AIA, February 2019.
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Figure 5b
Building C Elevations

3 - SITE C EAST ELEVATION

4 - SITE C SOUTH ELEVATION

Source: VAN TILBURG, BANVARD & SODERBERGH, AIA, February 2019.
Parking
There are currently 786 existing parking stalls on the project site. The project would construct three new subterranean parking structures, one beneath each of the three new buildings (Buildings A-C), and a surface-level parking lot in the location of the existing clubhouse courtyard on site (Figures 6a and 6b: Building A&B Parking Section) (Figure 7: Building C Parking Section).

Construction of the proposed project will remove 95 existing parking stalls, add an additional 327 parking stalls, and then replace the 95 removed parking stalls for a total of 327 new parking stalls on site. The project will include 13 accessible parking spaces, and 26 EV charging spaces. Following construction of the project, there would be a total of 1,113 parking spaces on the project site.

Landscaping and Lighting
The existing landscaping on the site will remain in place, with the addition of enhanced landscaping along Lewis Street. A comprehensive landscape plan would be provided for the proposed project that includes a variety of new trees, shrubs, and groundcover. Landscaping for the site includes enhanced paving, raised planters, benches, water features. Plantings on the site include the addition of: 14 canopy shade trees (a combination of camphor tree, carrot wood, and London plane tree); 11 flowering accent trees (a combination of thornless Palo Verde, jacaranda, and crape myrtle light lavender), eight tall vertical screen trees (a combination of bottle tree, fern pine, and Brisbane box), 10 courtyard trees (a combination of Bloodgood Japanese myrtle, Australian willow, and yellow oleander), 22 courtyard palms, 12 tall vertical accent trees (Italian cypress), and three accent palms (Figure 8A, Landscaping Plan—Part A and Figure 8B, Landscaping Plan—Part B).

Lighting for the new residential structures and associated parking areas and would consist of building-mounted light fixtures; lighting for pedestrian walkways surrounding the structures; ground-mounted decorative lighting for landscape and architectural features; and interior area lighting.

Recreational Features
The proposed project will remove the existing tennis courts on-site and add the following recreational features (the letters below correspond to the recreational features on the Landscaping Plan (Figures 8A and 8B):

A) Tot lot with play structure (approximately 500 square feet)
B) Jogging path with exercise signage ([1/3 mile])
C) Outdoor table games area (approximately 300 square feet)
D) Outdoor exercise area with fitness equipment (approximately 800 square feet)
E) Outdoor kitchen/dining area (approximately 500 square feet)
F) Pickleball court (approximately 1,300 square feet)
G) Tot lot with play structure (No. 2) (approximately 600 square feet)
H) Outdoor table games (No. 2) (approximately 300 square feet)
I) Tot lot with play structure (No. 3) (approximately 600 square feet)
Grading and Construction
Construction activities would consist of the demolition of existing parking lot areas, preparation of the project site, mass grading, building construction, asphalt paving of new parking areas, and architectural coating of the inside and outside of the buildings. Based on applicant-provided information, it was assumed that the site would require up to 60 hauling truck trips per day for eight weeks for the extent of the grading/excavation phase.

For the purposes of this analysis, project construction was assumed to being in July 2019, and would be completed in March 2021, for a total number of 455 working days.

Utilities and Service Systems
Plans for utilities that would serve the uses under the proposed project would include provision of electricity (Southern California Edison [SCE]), natural gas (Southern California Gas Company [SoCalGas]), telecommunications facilities including telephone and fiber-optic lines (AT&T), cable service (Time Warner), and solid waste (CR&R Waste and Recycling Services). Bins for both solid waste and recycling would be provided in the parking garage of the apartment complex. All new utility infrastructure for electricity, natural gas, telecommunications, and cable service would be installed underground or placed in enclosed spaces (e.g., utility closets) and in the proposed new buildings.

Infrastructure Improvements
Water
The City’s Public Works Water Division provides potable water service to the project site and would continue to do so for the uses under the proposed project. Potable water to the site, which includes service to the existing office building and parking-area landscape, is provided via internal water lines that connect to the existing public water main along Chapman Avenue.

Wastewater
The City’s Public Works Department provides wastewater collection service to the existing residential buildings on site, and would provide wastewater collection service to the proposed buildings via the existing sewer main that runs along Chapman Avenue, which is operated and maintained by the City’s Public Works Department. Wastewater collected by the City flows through a system of regional trunk lines to Reclamation Plants No. 1 (in the City of Fountain Valley) and No. 2 (in the City of Huntington Beach) for treatment; the reclamation plants are owned and operated by the Orange County Sanitation District (OCSD).

Wastewater service to the new buildings on site would be provided via new internal sewer lines that connect to the existing sewer main on Chapman Avenue. Proposed wastewater infrastructure improvements would entail trenching and exposing existing lines on-site for connections, trenching and installing new lines, and break-in connections to the existing main line. No off-site sewer main construction or upsizing would be required to accommodate the proposed project. However, some construction may occur within the public right-of-way of Chapman Avenue in order to make the necessary infrastructure connections. The sewer main within Chapman Avenue would continue to be maintained by the City, and the proposed lateral connections and other on-site sewer lines would be maintained by the property owner.
Figure 6a
Building A&B Parking Section

SITE A & B SECTION A-A

SITE A & B SECTION B-B

FIRE LADDER PAD SECTION / PLAN

Source: VAN TILBURG, BANVARD & SODERBERGH, AIA, February 2019.
Figure 7
Building C Parking Section

Source: VAN TILBURG, BANVARD & SODERBERGH, AIA, February 2019.
Figure 8a
Landscaping Plan – Part A

Figure 8b
Landscaping Plan – Part A

Drainage

The project will incorporate infiltration Best Management Practices (BMPs) as the primary method of water quality via perforated pipes with upstream hydrodynamic separator units. Two Drainage Management Areas (DMAs) will be created for the proposed improvements (Figure 9: Water Quality Management Plan Site Plan). The two DMAs are identified in Figure 9 as DMA-1 and DMA-2.

Post-development drainage conditions at the surface will mostly mimic those from the pre-development. At the surface level, the site will drain away from existing and proposed buildings toward site gutters and catch basins. Below grade, stormwater runoff from the project DMAs will be conveyed into a hydrodynamic separation device as pretreatment and a Contech StormFilter (for DMA-1) as treatment measures and then to shallow, perforated corrugated metal pipes for full volume detention and treatment via below-grade infiltration.

Within both DMAs, all runoff that enters the corrugated metal pipes will be treated via their upstream diversion structure using StormFilter units. The StormFilter units on-site separate and trap debris, sediment, and oil and grease from stormwater runoff. When the corrugated metal pipe in DMA-1 reaches capacity, untreated runoff will be diverted via the upstream diversion structure and overflow pipe into the existing, on-site storm drain system.

When the corrugated metal pipe in DMA-2 reaches capacity, runoff will build up within the StormFilter unit and upstream catch basins. The catch basins will act as bubblers for untreated stormwater runoff to mimic existing conditions by draining off-site at the southerly face of the north-south driveway via a concrete curb and gutter.

A detailed description of the proposed drainage system for the project site is provided in the project’s Preliminary Priority Water Quality Management Plan (WQMP) and Drainage Study (Appendix H).

REQUIRED DISCRETIONARY APPROVALS

The City of Orange, as Lead Agency, has the discretionary authority over the proposed project. In order to implement this project, the Applicant would need to obtain the following permits/approvals from the City of Orange as outlined by the City’s Municipal Code Section 17.19.060, including, but not limited to:

- Initial Study/Mitigated Negative Declaration
- Site Plan and Design Review
- Demolition permits for on-site structures and other improvements
- Grading and Building Permits to grade and construct the project
- Approval of a Construction Management Plan
- Planning Commission Approval of Conditional Use Permit (CUP)
INTENDED USES OF THIS DOCUMENT

This Initial Study has been prepared to determine the appropriate scope and level of detail required in completing the environmental analysis for the proposed project. This document will also serve as a basis for soliciting comments and input from members of the public and public agencies regarding the proposed project. The Draft IS/MND will be circulated for a minimum of 20 days, during which period comments concerning the analysis contained in the IS/MND should be sent to:

Robert Garcia, Senior Planner
City of Orange Planning Division
300 East Chapman Avenue
Orange, CA 92866
Phone: (714) 744-7231
Email: rgarcia@cityoforange.org
Figure 9
Water Quality Management Plan Site Plan

Source: kppf, February 2019.
Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

☐ Aesthetics  ☐ Agriculture and Forestry Resources  ☒ Air Quality
☒ Biological Resources  ☒ Cultural  ☒ Geology/Soils
☐ Greenhouse Gas Emissions  ☐ Hazards/Hazardous Materials  ☐ Hydrology/Water Quality
☐ Land Use/Planning  ☐ Mineral Resources  ☐ Noise
☐ Population/Housing  ☐ Public Services  ☐ Recreation
☐ Transportation/Traffic  ☒ Tribal Cultural Resources  ☐ Utilities/Services Systems
☐ 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 measure 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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: 2019-01-30  Signed:  

1
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 may be cross-referenced, as discussed below).

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 and 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 the mitigation measure identified, if any, to reduce the impact to less than significance.
CHECKLIST OF ENVIRONMENTAL IMPACT ISSUES:

1. AESTHETICS. Would the project:

<table>
<thead>
<tr>
<th>Impact Analysis</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Have a substantial adverse effect on a scenic vista?</td>
<td></td>
<td></td>
<td></td>
<td>❌</td>
</tr>
<tr>
<td>(b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?</td>
<td></td>
<td></td>
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<td>❌</td>
</tr>
<tr>
<td>(c) Substantially degrade the existing visual character or quality of the site and its surroundings?</td>
<td></td>
<td></td>
<td></td>
<td>❌</td>
</tr>
<tr>
<td>(d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Impact Analysis

a) Have a substantial adverse effect on a scenic vista?

A significant impact would occur if a project were to introduce incompatible scenic elements within a field of view containing a scenic vista or substantially block views of a scenic vista. Viewsheds refer to the visual qualities of the geographical area that is defined by the horizon, topography, and other natural features that give an area its visual boundary and context, or by artificial developments that have become prominent visual components of an area.

The City of Orange contains scenic viewsheds in the southeastern part of the City, according to the Natural Resources Element of the General Plan. The Natural Resources Element of the General Plan describes viewscape corridors located within City limits (City of Orange 2010, see Figure NR-37, Viewscape Corridors). According to the Natural Resources Element, the closest viewscape corridor to the project site is located approximately 7.12 miles southeast along Newport Boulevard and Chapman Avenue. This viewscape is not visible from the project site. Due to the urbanized location of the project site and lack of visual resources in the vicinity, the project would not have an effect on scenic vistas within the City.

The City’s planning area includes 7,400 acres of open space, which includes parks, ridgelines, and areas designated as Open Space on the Land Use Map (City of Orange 2010, see Figure NR-1). The Open Space designation describes the open space resources within the City. A portion of the Cleveland National Forest is located within the City’s Sphere of Influence, encompassing Santiago Oaks Regional Park, Irvine Regional Park, Peters Canyon Regional Park, and Irvine Lake, located 7.5 miles northeast, 8.35 miles east, 7.45 miles southeast, and 9.7 miles east respectively. A majority of the open space scenic resources are located in the eastern portion of the City, and are not within the surrounding area of the project site. These identified open space scenic resources are not visible from the project site due to several existing high-rise buildings within the site’s immediate vicinity.

The proposed project would add three new apartment buildings and parking to an existing apartment complex containing eight apartment buildings. The project site is located in an
urbanized area of the City. The uses surrounding the project site include a mix of commercial, residential, office, and medical uses that do not provide any significant visual resources or scenic vistas. Additionally, Figure NR-1 of the General Plan, Open Space Resources, does not identify any open spaces located on or in the surrounding or immediate vicinity of the project site (City of Orange 2010). There would be no impact.

**Significance Determination:** No impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** No impact.

b) **Substantially damage scenic resources, including, but not limited to, trees, rock outcappings, and historic building within a State scenic highway?**

A significant impact would occur if scenic resources would be damaged or removed by a project within a designated scenic highway. There are no identified scenic resources such as rock outcappings or historic buildings located on the project site, and no vegetation that would be considered a protected species. The proposed project is the addition of three, 4-story multi-family apartment buildings to an existing apartment complex. The project site is zoned Urban Mixed-Use in an urbanized portion of the City. According to Caltrans Scenic Highway Mapping System, the closest State-designated scenic highway is SR-91, located approximately 5.6 miles northeast of the project site. The project site is not visible from this scenic highway. This condition precludes the possibility of the project substantially damaging scenic resources within a State scenic highway. No impact would occur.

**Significance Determination:** No impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** No impact.

c) **Substantially degrade the existing visual character or quality of the site and its surroundings?**

A significant impact may occur if a project were to introduce incompatible visual elements on the project site or visual elements that would be incompatible with the character of the area surrounding the project site. The proposed project is the addition of three, 4-story multi-family apartment buildings to an existing apartment complex with similar scale and massing to what already exists on-site consistent with the General Plan and Zoning Code.

**Project Construction Phase**

The construction phase of the proposed project would result in temporary changes to the visual character of the site and its surroundings. Construction activities including site clearing, grading, and building as well as construction staging areas, including earth stockpiling, storage of equipment and supplies would alter the existing visual character or quality of the site and its surroundings during building. However, these effects would be typical of any site in the City that undergoes development or redevelopment. For the purposes of this analysis, project construction
was assumed to being in July 2019, and would be completed in March 2021, for a total number of 455 working days. These activities would be temporary, would only affect the site during construction, and would not have a significant effect on the visual character of the site.

**Project Operation Phase**

The project site is in an urbanized area of the City and is surrounded by a mix of commercial, retail, residential, office, and medical uses. Buildings immediately adjacent to and surrounding the project site include commercial and residential to the north, commercial and retail uses to the east and south, and residential and institutional uses to the west. Development of the proposed project includes the addition of three, 4-story multi-family apartment buildings to an existing apartment complex.

The proposed buildings have been designed to blend in with the existing structures of the apartment complex. The existing apartment complex contains eight, 3-story stucco buildings in cream, beige, and medium brown tones with white and dark brown accents. The three new buildings proposed for the site would be 4-story buildings, which have been designed to complement the current on-site apartment buildings. The additional story of the new buildings will integrate with taller buildings on properties immediately adjacent to the site, including the Christ Cathedral Campus (4+ stories), City Tower (20 stories), UCI Medical Center (5+ stories), and the DoubleTree by Hilton Hotel Anaheim (18 stories). The final design and architectural style of the proposed building and structure are subject to review and approval by the City’s Design Review Committee.

Overall, development of the proposed project would enhance and strengthen the character of the site and its surroundings through new landscaping, hardscape, and other improvements on-site and along the street edges. These improvements are included in the project’s landscape plan (Figures 8A and 8B, Landscape Plan). The proposed architectural and landscape elements and design would ensure that development of the proposed project is not detrimental to the surrounding area or uses. Additionally, project implementation would provide similar and compatible uses to those existing adjacent to and surrounding the project site. The proposed architectural and landscape elements and design would ensure that development of the proposed project is not detrimental to the surrounding area or uses. Overall, the visual appearance of the project site would change minimally and, thus, there would be no substantial visual degradation. Impacts would be less than significant.

**Significance Determination: Less than significant impact.**

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination After Mitigation: Less than significant impact.**
d) **Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

A significant impact may occur if a project were to introduce new sources of light or glare on or from the project site that would be incompatible with the area surrounding the project site, or which pose a safety hazard to motorists utilizing adjacent streets or freeways. The project site and surrounding area contain numerous sources of nighttime lighting, including streetlights, security lighting, illuminated signage, indoor building illumination (light emanating from the interior of structures that passes through windows), and automobile headlights.

The project site is an existing apartment complex that currently generates levels of light and glare typical of residential uses. Development of the project would introduce sources of light and glare; however, the new structures would be consistent with the existing lighting on-site, and in the surrounding area, and would follow the City of Orange Municipal Code 15.52.120—Rural and Private Street Lighting Provisions (City of Orange 2018).

**Glare**

Urban glare is largely a daytime phenomenon occurring when sunlight is reflected off the surfaces of buildings or objects. Excessive glare not only impedes visibility, but also increases the ambient heat reflectivity in a given area. The proposed project would include building materials and improvements that would cause daytime glare, however, the additional glare would be minimal and would not result in a significant impact. The architectural treatments of the proposed apartment complex would include appropriate architectural building materials which would not cause glare, such as stucco walls, concrete, metal railings, panels, columns, and awnings. The buildings of the proposed project would be similar in style and color palette to the existing apartment buildings on the site. In addition, these building materials and architectural treatments are not reflective and therefore, would not create a substantial source of daytime or nighttime glare. The proposed buildings would not include large expanses of glazing (i.e., glass windows). However, the windows of the building would potentially increase source of glare, because they would reflect sunlight during certain times of the day. In addition, while vehicles parked on-site would increase the potential for reflected sunlight during certain times of the day, the proposed project removes surface parking from the site and replaces it with subterranean parking, thereby reducing glare from vehicles parked on-site. Building A and Building B, proposed for construction along City Boulevard West, would be surrounded by landscaping, and separated from the street by landscaping. The same would apply for Building C, proposed for construction along Lewis Street. This separation of the new structures from roadways with landscaping would help to reduce glare impacts resulting from windows on the adjacent roadways. As such, the project is not expected to create unusual or isolated glare impacts for the project site or surrounding area, and impacts would be less than significant.

**Light**

As mentioned above, the surrounding area is located within a developed, urban portion of the City of Orange, and the project vicinity is characterized by moderate nighttime illumination.
levels. The project site is currently developed with eight, 3-story apartment buildings. Lighting for the proposed buildings would consist of building mounted light fixtures; lighting for pedestrian walkways; ground-mounted decorative lighting for landscape, architectural features, interior lighting for the buildings and structures, lighting for common and recreation areas, and security lighting. Nighttime lighting and glare from the project site would be visible to the surrounding residential, office, and commercial/retail uses from various vantage points, and from surrounding roadways.

Although project implementation would introduce new light sources to the area, these sources would be similar to the light sources of the existing apartment complex. The amount and intensity of nighttime lighting proposed on-site would not be substantially greater or different from existing lighting on the site and in the surrounding area.

Additionally, Section 17.12.030 (Lighting) of the Orange Municipal Code requires that lighting on any premises be directed, controlled, screened, or shaded in such a manner as not to shine directly on surrounding premises, and that lighting on any residential property be controlled to prevent glare or direct illumination of any public sidewalk or thoroughfares. For example, every land use is required to be operated in a manner to prevent glare emissions in such quantities or degrees as to be readily detectable on any boundary line of the lot on which the use is located. Glare from exterior lighting is required to be shielded, screened, or oriented so that it is not visible from any point beyond the exterior boundaries of the property and that the source is not a nuisance to any point beyond the exterior boundaries of the property or cause illumination in residential districts in excess of 0.5 foot-candle.

The lights associated with the proposed project would be directed toward the interior of the site to avoid impacts to motorists on adjacent roadways or to surrounding uses, including the adjacent apartment residents to the south. All exterior lighting for the proposed apartment complex would be designed, arranged, installed, directed, shielded, and maintained in such a manner as to contain direct illumination on-site and prevent light and glare impacts off-site in accordance with the provisions of Section 17.12.030 of the Orange Municipal Code, preventing excess illumination and light spillover onto adjoining land uses and/or roadways (City of Orange 2018). Therefore, project impacts with respect to lighting would be less than significant.

**Significance Determination: Less than significant impact.**
**Mitigation Measures: No mitigation measures are required.**
**Significance Determination After Mitigation: Less than significant impact.**
2. **AGRICULTURAL RESOURCES.** (In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.) Would the project:

<table>
<thead>
<tr>
<th></th>
<th>Potentially Significant Impact</th>
<th>Less than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>(b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>(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))?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>(d) Result in the loss of forest land or conversion of forest land to non-forest use?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>(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?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

**Environmental Setting**

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

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?**

A significant impact may occur if a project were to result in the conversion of State-designated agricultural land from agricultural use to another non-agricultural use. According to the California Department of Conservation’s Farmland Mapping and Monitoring Program, the project vicinity is designated Urban and Built-Up Land and the City overall contains less than one square mile that is considered unique farmland. There is no prime, designated, or unique farmland on or within the vicinity of the project site. The nearest prime, designated, or unique
farmland is located approximately 1.5 and 2 miles southwest of Peter’s Canyon Reservoir southeast of the project site and along Glassell Street. The General Plan designates the area as Urban Mixed-Use (UMIX) and the site is zoned as UMU. The proposed project is the construction of additional apartment buildings to an existing residential site in an urbanized area of the City. The project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. There would be no impact.

**Significance Determination:** No impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** No impact.

b) **Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

A significant impact may occur if a project were to result in the conversion of land zoned for agricultural use or under a Williamson Act Contract from agricultural use to non-agricultural use. The project site and surrounding areas are urbanized and are not subject to a Williamson Act Contract. The project site is zoned as UMU. The surrounding areas of the project site are commercial and residential. The City’s zoning map designates approximately five parcels scattered within the eastern portion of the City of Orange for agricultural use. There is no land on the project site or surrounding area that could support any type of agricultural use and project implementation will not affect land zoned for agricultural use or a Williamson Act contract. There would be no impact.

**Significance Determination:** No impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** No impact.

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))?**

There is no land in the City of Orange that is zoned for forest land or timberland according to the City’s zoning map (City of Orange 2016). The site is zoned as UMU, and is not zoned for forest land or timberland. The project site and surrounding areas are urbanized and therefore, the project would not conflict with existing zoning for forest land or timberland, and no impact would occur.

**Significance Determination:** No impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** No impact.
d) Result in the loss of forest land or conversion of forest land to non-forest use?

The project site is zoned for UMU, and is not zoned for forest land or timberland. The project site is located in an area that is urbanized and consists of developed land. Implementation of the project would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.

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?

The project site is developed with existing multi-family apartment buildings; the project site’s land use designation is UMIX. There are no agricultural or forest uses in the vicinity of the site. Therefore, implementation of the proposed project would not involve changes in the existing environment or convert Farmland to non-agricultural use or forest land to non-forest use.

Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.
3. Air Quality
(Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.)

Would the project:

<table>
<thead>
<tr>
<th>Would the project:</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Conflict with or obstruct implementation of the applicable air quality plan?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Expose sensitive receptors to substantial pollutant concentrations?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) Create objectionable odors affecting a substantial number of people?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Environmental Setting

The analysis in this section is based, in part, on the Air Quality Analysis report prepared by FirstCarbon Solutions (FCS) on September 13, 2018. The report is provided in its entirety in Appendix B of this IS/MND.

The project site is located in the South Coast Air Basin (SoCAB) within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, SCAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions (Table 1). If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The SCAQMD has developed regional and localized significance thresholds to evaluate construction and operational emissions within its jurisdiction.

Regional Thresholds

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Construction</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>100 lbs/day</td>
<td>55 lbs/day</td>
</tr>
<tr>
<td>VOC</td>
<td>75 lbs/day</td>
<td>55 lbs/day</td>
</tr>
<tr>
<td>PM10</td>
<td>150 lbs/day</td>
<td>150 lbs/day</td>
</tr>
<tr>
<td>PM2.5</td>
<td>55 lbs/day</td>
<td>55 lbs/day</td>
</tr>
</tbody>
</table>
Table 1 (cont.): SCAQMD Regional Thresholds of Significance

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Construction</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOX</td>
<td>150 lbs/day</td>
<td>150 lbs/day</td>
</tr>
<tr>
<td>CO</td>
<td>550 lbs/day</td>
<td>550 lbs/day</td>
</tr>
</tbody>
</table>

Notes:
- NOX = nitrogen oxides
- VOC = volatile organic compounds
- PM$_{10}$ = particulate matter with an aerodynamic resistance diameter of 10 micrometers or less
- PM$_{2.5}$ = particulate matter with an aerodynamic resistance diameter of 2.5 micrometers
- SOX = sulfur oxides
- CO = carbon monoxide

Localized Air Quality Significance Thresholds

The SCAQMD has created a series of look-up tables that represent the maximum emissions (e.g., the Localized Significance Thresholds [LSTs]) that a project can emit without contributing to an existing or new air quality standard exceedance. LSTs are defined separately for construction and operational activities and are dependent upon location, project size, and distance to the sensitive receptor. The steps taken to select the appropriate LSTs are provided in Appendix B.

Carbon Monoxide Hotspot Thresholds

The largest contributor of carbon monoxide (CO) emissions during long-term operations of a residential development project is typically from motor vehicles. A CO hotspot represents a condition wherein high concentrations of CO may be produced by motor vehicles accessing a congested traffic intersection under heavy traffic volume conditions. The SCAQMD does not currently have a screening threshold to evaluate CO hotspots. However, other air districts have developed conservative screening thresholds to determine if a project would generate traffic volumes at affected intersection that could result in a CO hotspot. This analysis uses the Bay Area Air Quality Management District's (BAAQMD) CO hot spot screening methodology as a basis for the applicable threshold.

The proposed project would result in a less-than-significant impact to localized CO concentration if the project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

Health Risk Significance Thresholds

For pollutants without defined significance standards or air contaminants not covered by the standard criteria cited above, the definition of substantial pollutant concentrations varies. For toxic air contaminants (TACs), “substantial” is taken to mean that the individual cancer risk exceeds a threshold considered a prudent risk management level.
The SCAQMD has defined several health risk significance thresholds that it recommends Lead Agencies use in assessing a project’s health risk impacts. The City of Orange has not adopted its own set of thresholds. Therefore, the following SCAQMD thresholds are used for this analysis.

**Project-Specific Health Risk Significance Thresholds**
The SCAQMD has established the following project-specific health risk significance thresholds (SCAQMD 2015):

- Maximum Incremental Cancer Risk: $\geq 10$ in 1 million.
- Hazard Index (project increment) $\geq 1.0$.

A significant impact would occur if a project’s impacts exceeded any of these thresholds.

**Cumulative Health Risk Significance Thresholds**
Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

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

**Impact Analysis**

a) **Conflict with or obstruct implementation of the applicable air quality plan?**

The SCAQMD CEQA Air Quality Handbook states that there are two key indicators to evaluate whether or not a project conflicts with, or obstructs the implementation of the applicable air quality plan (2016 Air Quality Management Plan [AQMP] for the SoCAB). These indicators are (1) whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP; and, (2) whether a project is inconsistent with the growth assumptions incorporated into the air quality plan, and thus, whether it would interfere with the region’s ability to comply with federal and California air quality standards.

Considering the recommended indicators in the CEQA Air Quality Handbook, this analysis uses the following criteria to address this potential impact:

- **Criterion 1**: Project’s contribution to air quality violations (SCAQMD’s first indicator);
- **Criterion 2**: Assumptions in the AQMP (SCAQMP’s second indicator); and
- **Criterion 3**: Compliance with applicable emission control measures in the AQMPs.
Criterion 1: Project’s Contribution to Air Quality Violations

According to the SCAQMD, the project is consistent with the AQMP if the project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

If a project’s emissions exceed the SCAQMD regional thresholds for nitrogen oxides (NO\textsubscript{X}), volatile organic compounds (VOC), particulate matter with an aerodynamic resistance diameter of 10 micrometers or less (PM\textsubscript{10}), or particulate matter with an aerodynamic resistance diameter of 2.5 micrometers (PM\textsubscript{2.5}), it follows that the emissions could cumulatively contribute to an exceedance of a pollutant for which the basin is in nonattainment (ozone, PM\textsubscript{10}, PM\textsubscript{2.5}) at a monitoring station in the basin. An exceedance of a nonattainment pollutant at a monitoring station would not be consistent with the goals of the AQMP—to achieve attainment of pollutants. As discussed in Impact 3b), the project would not exceed the regional significance thresholds. Therefore, the project would be consistent with the AQMP. The project meets this criterion, and impacts would be less than significant.

Criterion 2: Assumptions in AQMP

According to Chapter 12 of the SCAQMD CEQA Air Quality Handbook, the purpose of the General Plan consistency finding is to determine whether a project is inconsistent with the growth assumptions incorporated into the air quality plan and thus, whether it would interfere with the region’s ability to comply with federal and California air quality standards. The City of Orange’s 2010 General Plan, was adopted prior to adoption of the SCAQMD’s most recent AQMP. The SCAQMD adopted the 2016 AQMP on March 3, 2017. The project site’s land use designation is Urban Mixed-Use (City of Orange 2010). The Urban Mixed-Use designation allows development with a 1.5-3.0 FAR and 30 to 60 dwelling units per acre. The maximum development on the site under the Urban Mixed-Use designation is 1,013 dwelling units. This project includes the construction and development of 167 new apartment units, for a total of 608 dwelling units on the project site. Implementation of the project would not exceed the maximum development of the site allowed in the General Plan Land Use Element. Given the land use designation, the project would not require a general plan amendment. Because the project would not exceed the development anticipated in the City’s General Plan, emissions related to development of the project site would have been included in growth forecasts for the current AQMP. Therefore, the project would not adversely affect growth assumptions within the AQMP. The impact for this criterion would be less than significant.

Criterion 3: Control Measures

The project would comply with all applicable rules and regulations of the SCAQMD. Because the proposed project includes earthmoving activity, SCAQMD Rule 403 would apply (SCAQMD 2005). SCAQMD Rule 403 governs emissions of fugitive dust during construction and operation activities. The rule requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line.
of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Compliance with this rule is achieved through application of standard BMPs. These BMPs include application of water or chemical stabilizers to disturbed soils; covering haul vehicles; restricting vehicle speeds on unpaved roads to 15 miles per hour; sweeping loose dirt from paved site access roadways; cessation of construction activity when winds exceed 25 miles per hour; and establishing a permanent ground cover on finished sites. The project’s compliance with SCAQMD Rule 403 would result in consistency with the applicable AQMP control measures. Implementation of Mitigation Measure (MM) AIR-1 would ensure compliance with SCAQMD Rule 403.

**Summary**

In summary, the project would meet all three criteria with the incorporation of MM AIR-1. The project would not result in a regional or localized exceedance of criteria air pollutants and would not exceed the growth assumptions in the AQMP. The project would comply with all applicable SCAQMD rules and regulations, with implementation of MM AIR-1, which would require compliance with SCAQMD Rule 403. Accordingly, the project would not conflict with or obstruct implementation of the applicable air quality plans, and therefore, the impact would be less than significant with incorporation of MM AIR-1.

**Significance Determination: Less than significant impact with mitigation incorporated.**

**Mitigation Measures:**

**MM AIR-1**  
All construction contractors shall comply with SCAQMD regulations, including Rule 403, Fugitive Dust. All grading (regardless of acreage) shall apply best available control measures for fugitive dust in accordance with Rule 403. To ensure that the project is in full compliance with applicable SCAQMD dust regulations and that there is no nuisance impact off the site, the contractor would implement each of the following:

- Moisten soil not more than 15 minutes prior to moving soil or conduct whatever watering is necessary to prevent visible dust emissions from exceeding 100 feet in any direction;
- Apply chemical stabilizers to disturbed surface areas (completed grading areas) within 5 days of completing grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface;
- Water excavated soil piles hourly or cover with temporary coverings;
- Water exposed surfaces at least three times per day. Water exposed areas as often as needed on days when winds are less than 25 miles per hour or during very dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site;
- Wash mud-covered tires and under-carriages of trucks leaving construction sites;
- Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off-site by trucks departing project sites;
Securely cover loads with a tight fitting tarp on any truck leaving the construction sites to dispose of debris; and

Cease grading activities during periods when winds exceed 25 miles per hour.

Significance Determination After Mitigation: Less than significant.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

The project’s regional construction and operational emissions, which include both on- and off-site emissions, are evaluated separately below. As discussed in Section 3 of the Air Quality Analysis report contained as Appendix B of this IS/MND, the construction and operational emissions from the project were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2.

Construction Regional Emissions

Construction emissions are described as “short-term” or temporary in duration; however, they have the potential to represent a significant impact with respect to air quality. Construction of the project would result in the temporary generation of VOC, NOX, CO, sulfur oxides (SOX), PM10, and PM2.5 emissions from construction activities such as demolition, grading, building construction, architectural coating, and asphalt paving. Fugitive dust emissions are primarily associated with earth disturbance and grading activities, and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles on- and off-site. Construction-related NOX emissions are primarily generated by exhaust emissions from heavy-duty construction equipment, material and haul trucks, and construction worker vehicles. VOC emissions are mainly generated by exhaust emissions from construction vehicles, off-gas emissions associated with architectural coatings and asphalt paving.

The construction schedule assumptions and construction equipment are listed in Appendix B. The maximum daily emissions from construction are shown in Table 2. The emissions shown in the table below assumes compliance with SCAQMD Rule 403, as required by MM AIR-1.

Table 2: Maximum Daily Construction Emissions

<table>
<thead>
<tr>
<th>Activity</th>
<th>Mass Daily Emissions (pounds per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VOC</td>
</tr>
<tr>
<td>2019</td>
<td></td>
</tr>
<tr>
<td>Demolition</td>
<td>0.7</td>
</tr>
<tr>
<td>Site Preparation/Shoring Operation</td>
<td>1.3</td>
</tr>
<tr>
<td>Grading/Excavation Operation</td>
<td>2.1</td>
</tr>
<tr>
<td>Paving/Concrete Structure (2019)</td>
<td>1.3</td>
</tr>
</tbody>
</table>
## Table 2 (cont.): Maximum Daily Construction Emissions

<table>
<thead>
<tr>
<th>Activity</th>
<th>Mass Daily Emissions (pounds per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Shotcrete</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
</tr>
<tr>
<td>Paving/Concrete Structure (2020)</td>
<td></td>
</tr>
<tr>
<td>Building Construction/Framing</td>
<td></td>
</tr>
<tr>
<td>Skin/Finishes/Sitework (2020)</td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td></td>
</tr>
<tr>
<td>Total Construction Duration (2019–2021)</td>
<td></td>
</tr>
</tbody>
</table>

**SCAQMD Air Quality Significance Thresholds**

<table>
<thead>
<tr>
<th>Maximum Daily Emissions</th>
<th>7.7</th>
<th>50.9</th>
<th>20.7</th>
<th>0.1</th>
<th>3.5</th>
<th>1.5</th>
</tr>
</thead>
</table>

| Exceed Threshold? | No | No | No | No | No | No |

Notes:
- VOC = volatile organic compounds; NOX = nitrogen oxides; CO = carbon monoxide; PM10 = particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; PM2.5 = particulate matter with an aerodynamic resistance diameter of 2.5 micrometers.
- Emissions shown represent the maximum emissions between the summer and winter scenarios. The highest emissions for VOC, NOX, PM10, and PM2.5 occurred in the winter scenario, while the highest emissions for CO and SOX occurred in the summer scenario.
- The PM10 and PM2.5 emissions reflect the combined exhaust and mitigated fugitive dust emissions in accordance with SCAQMD Rule 403.
- Source: FCS 2018, Appendix B of IS/MND.

As shown in Table 2, the project’s regional daily construction emissions would not exceed any of SCAQMD’s thresholds of significance. As discussed in Impact 3(a), MM AIR-1 would be required to reduce potential fugitive dust-related impacts during construction. Therefore, the short-term construction emissions would not violate or contribute substantially to an existing or projected air quality violation with implementation of MM AIR-1. The impact would be less than significant with mitigation incorporated.

### Operational Regional Emissions

As previously discussed, the pollutants of concern include VOC, NOX, PM10, and PM2.5. SCAQMD provides regional thresholds for VOC, NOX, CO, SOX, PM10, and PM2.5. Operational emissions for land use development projects are typically distinguished as mobile-, area-, and energy-source emissions. Area sources would include activities such as landscape maintenance and occasional architectural coatings. Energy sources would include electricity and natural gas combustion for space and water heating. Mobile sources would include vehicle trips associated
with automobiles that would travel to and from the project residences. For detailed assumptions, methodologies, and models used to estimate emissions, please refer to Appendix B of this report.

The project’s operational emissions were also modeled for summer and winter seasons. Table 3 presents the project’s maximum daily operational emissions between summer and winter seasons.

Table 3: Maximum Daily Operational-related Emissions—Unmitigated

<table>
<thead>
<tr>
<th>Activity</th>
<th>VOC</th>
<th>NOX</th>
<th>CO</th>
<th>SOX</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>4.6</td>
<td>2.5</td>
<td>14.9</td>
<td>0.0</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Energy</td>
<td>0.1</td>
<td>0.5</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Mobile</td>
<td>1.1</td>
<td>4.7</td>
<td>15.7</td>
<td>0.1</td>
<td>5.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Total</td>
<td>5.8</td>
<td>7.7</td>
<td>30.8</td>
<td>0.1</td>
<td>5.6</td>
<td>1.8</td>
</tr>
</tbody>
</table>

SCAQMD Air Quality Significance Thresholds

<table>
<thead>
<tr>
<th></th>
<th>55</th>
<th>55</th>
<th>550</th>
<th>150</th>
<th>150</th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceed threshold?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes:
VOC = volatile organic compounds; NOX = nitrogen oxides; CO = carbon monoxide; PM10 = particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; PM2.5 = particulate matter with an aerodynamic resistance diameter of 2.5 micrometers

Emissions shown represent the maximum daily emissions from summer and winter seasons for each operational emission source and pollutant. Therefore, total daily operational emissions represent maximum daily emissions that could occur throughout the year. The highest emissions for VOC, NOX, SOX, occurred in the summer scenario; the highest emissions of CO, PM10, and PM2.5 occurred in the winter scenario.

Source: FCS 2018, Appendix B of IS/MND.

As shown in Table 3, the project’s regional daily operational emissions would not exceed any of SCAQMD’s thresholds of significance. Therefore, the long-term daily operational emissions would not violate or contribute substantially to an existing or projected air quality violation. The impact would be less than significant.

Significance Determination: Less than significant impact with mitigation incorporated.
Mitigation Measures: MM AIR-1
Significance Determination After Mitigation: Less than significant.

c) 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

This impact is related to the cumulative effect of a project’s regional criteria pollutant emissions. The region is currently nonattainment for ozone, PM10, and PM2.5. However, by its nature, air
pollution is largely a cumulative impact resulting from emissions generated over a large geographic region. The nonattainment status of regional pollutants is a result of past and present development within the air basin, and this regional impact is a cumulative impact. To clarify, new development projects (such as the proposed project) within the air basin would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of regional air quality standards. Instead, a project’s emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. All new development that would result in an increase in air pollutant emissions above those assumed in regional air quality plans would contribute to cumulative air quality impacts.

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. According to Section 15064(h)(4) of the CEQA Guidelines, the existence of significant cumulative impacts caused by other projects alone does not constitute substantial evidence that the project’s incremental effects would be cumulatively considerable. Rather, the determination of cumulative air quality impacts for construction and operational emissions is based on whether the project would result in regional emissions that exceed SCAQMD regional thresholds of significance for construction and operations on a project level. Projects that generate emissions below the SCAQMD significance thresholds would be considered consistent with regional air quality planning efforts would not generate cumulatively considerable emissions.

Cumulative Construction Emissions
As shown above in Table 2, the project’s maximum daily construction emissions would not exceed SCAQMD’s regional thresholds of significance. Therefore, the project’s construction emissions would not result in a cumulatively considerable contribution to the existing cumulative air quality impacts. Furthermore, all construction activities would comply with applicable SCAQMD rules and regulations, including Rule 403, to minimize fugitive PM dust emissions. As described in Impacts 3(a) and 3(b), MM AIR-1 would be required to ensure compliance with Rule 403. Therefore, considering that the project’s short-term construction emissions would not exceed any significance thresholds with the implementation of MM AIR-1, the project would not result in a cumulatively considerable net increase of construction emissions. The cumulative impact from construction of the project would be less than significant with incorporation of MM AIR-1.

Cumulative Operational Emissions
As shown above in Table 3, the project’s maximum daily operational emissions would not exceed SCAQMD’s regional thresholds of significance. Therefore, the project’s operational emissions would not result in a cumulatively considerable incremental contribution to the existing cumulative air quality impacts. Considering that the project’s long-term operational emissions would not exceed any significance thresholds, the project would not result in a cumulatively considerable net increase of operational emissions. The cumulative impact from long-term operation of the project would be less than significant.
Significance Determination: Less than significant impact with mitigation incorporated.
Mitigation Measures: MM AIR-1
Significance Determination After Mitigation: Less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

This impact evaluates the potential for the project’s construction and operational emissions to expose sensitive receptors to substantial pollutant concentration. Sensitive receptors are defined as those individuals who are sensitive to air pollution including children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities (SCAQMD 2009). Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours. However, when assessing the impact of pollutants with 1-hour or 8-hour standards (such as nitrogen dioxide and CO), commercial and/or industrial facilities would be considered sensitive receptors.

For the proposed project, the closest sensitive receptors are the existing apartment residences already occupied in the existing 16.9-acre Terrace Apartments multi-family apartment community.

The following analyses were used to determine the significance of project emissions to sensitive receptors:

- **LST assessment**: Emissions and air quality impacts during project construction or operation must be below the applicable LSTs.

- **CO hotspot assessment**: The project would not result in the development of a CO hotspot that would result in an exceedance of the CO ambient air quality standards.

- **TAC Analysis**: The project would not result in significant health risk impacts to sensitive receptors. This would be achieved by demonstrating that construction or operation of the project would not result in an exceedance of the health risk significance thresholds.

*LST Analysis—Criteria Pollutants*

*Multi-family Localized Construction Analysis*

Table 4 presents the project’s maximum daily on-site emissions compared with the applicable LSTs. The LSTs have been obtained from the LST Methodology for a project located in Source Area Receptor (SRA) 17, a 1-acre project site, and the nearest sensitive receptor being less than 25 meters away. Emissions estimates account for implementation of SCAQMD Rule 403, which is required for all projects regardless of significance determined based on qualitative thresholds and would be enforced through implementation of MM AIR-1.
As shown in Table 4, the project’s maximum daily on-site emissions would not exceed any of the applicable SCAQMD LSTs. Therefore, the project’s construction activities would not cause or contribute substantially to an existing or future ambient air quality standard violation. Accordingly, the project’s on-site construction-related criteria air pollutant and ozone precursor concentrations would not expose sensitive receptors to substantial pollutant concentrations. The impact would be less than significant.

Localized Operational Analysis

Similar to the construction LST analysis above, the applicable operational LSTs were obtained for a project located in SRA 17 with the nearest sensitive receptor being less than 25 meters away. Long-term operations would occur for the proposed 167 additional apartment units on the
3.3-acre project site. Because LSTs are provided for 1-, 2-, and 5-acre sites, LSTs were obtained for both a 2-acre site and a 5-acre site.

The LST Methodology recommends that only on-site emissions are evaluated using LSTs. Because a majority of the project’s mobile-source emissions would occur on the local and regional roadway network away from the project, only the on-site area-, energy-, and mobile-source emissions were included in this analysis. A trip length of 0.1 mile was used in the modeling input assumptions to account for on-site emissions from mobile sources. Table 5 presents the project’s maximum daily on-site emissions compared with the most appropriate LSTs.

<table>
<thead>
<tr>
<th>Emissions Source</th>
<th>NOX</th>
<th>CO</th>
<th>PM_{10}</th>
<th>PM_{2.5}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>2.5</td>
<td>14.9</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Energy</td>
<td>0.5</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Mobile</td>
<td>1.8</td>
<td>3.0</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>4.8</td>
<td>18.1</td>
<td>0.4</td>
<td>0.3</td>
</tr>
</tbody>
</table>

| Operational LST—SRA 17, 25 meters, 2-acre site | 115 | 715 | 2 | 1 |
| Operational LST—SRA 17, 25 meters, 5-acre site | 183 | 1,253 | 3 | 2 |

Exceeds Significance Threshold? No No No No

Notes:
NOX = nitrogen oxides; VOC = volatile organic compounds; CO = carbon monoxide; PM_{10} = particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; PM_{2.5} = particulate matter with an aerodynamic resistance diameter of 2.5 micrometers.
The highest emissions of CO, PM_{10}, and PM_{2.5} occurred in the winter scenario; the highest emissions of CO occurred in the summer scenario.
Source: FCS 2018, Appendix B of IS/MND.

As shown in Table 5, the project’s maximum daily on-site operational emissions would not exceed any of the applicable SCAQMD LSTs. Therefore, the project’s operational activities would not cause or contribute substantially to an existing or future ambient air quality standard violation. Accordingly, the project’s operational criteria air pollutant and ozone precursor concentrations would not expose sensitive receptors to substantial pollutant concentrations. The impact would be less than significant.

**Carbon Monoxide Hotspot Analysis**
Linsecott, Law and Greenspan (LLG) prepared a Traffic Impact Analysis (TIA) for this project in 2018. The TIA identified the peak-hour traffic volumes for 17 intersections affected by the project.
As identified in the TIA, the maximum peak-hour intersection volume would occur at the intersection of The City Drive and Chapman Avenue during PM peak-hours. The estimated cumulative traffic volume at this intersection is 8,638 PM peak-hour trips. This level of peak-hour trips is substantially less than 44,000 vehicles per hour, which is the threshold for a significant impact. Therefore, the project would not result in a significant impact to air quality for local CO.

Toxic Air Contaminant Analysis

Toxic Air Contaminant Construction Analysis

Diesel particulate matter (DPM) has been identified by the ARB as a carcinogenic substance. Major sources of DPM include off-road construction equipment and heavy-duty delivery truck activities. For purposes of this analysis, DPM is represented as exhaust emissions of PM$_{10}$.

The results of the Health Risk Assessment (HRA) prepared for project construction, including both cancer risk and long-term chronic non-cancer risk, are summarized below. Air dispersion modeling was utilized to assess the project’s potential health risks using the current version of the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD version 18081) air dispersion model, which is the air dispersion model accepted by the United States Environmental Protection Agency (EPA) and the SCAQMD for preparing HRAs. Exhaust emissions of DPM were estimated using CalEEMod (version 2016.3.2) and are provided in Appendix B.

The estimated health and hazard impacts at the maximum impacted sensitive receptor from the project’s unmitigated construction emissions are provided in Table 6.

**Table 6: Estimated Health Risks and Hazards: Project Construction—Unmitigated**

<table>
<thead>
<tr>
<th>Source</th>
<th>Cancer Risk (risk per million)</th>
<th>Chronic Non-Cancer Hazard Index$^{(2)}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risks and Hazards at the Maximum Impacted Sensitive Receptor: Infants$^{(1)}$</td>
<td>56.0</td>
<td>0.05</td>
</tr>
<tr>
<td>Risks and Hazards at the Maximum Impacted Sensitive Receptor: Child$^{(1)}$</td>
<td>7.0</td>
<td>0.05</td>
</tr>
<tr>
<td>Risks and Hazards at the Maximum Impacted Sensitive Receptor: Adult$^{(1)}$</td>
<td>1.1</td>
<td>0.05</td>
</tr>
<tr>
<td>Significance Threshold</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Exceeds Individual Source Threshold?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes:

$^{(1)}$ Maximum impacted sensitive receptor is an existing apartment building at the Terrace Apartments.

$^{(2)}$ Chronic non-cancer hazard index was estimated by dividing the maximum annual DPM concentration (as PM$_{10}$ exhaust) by the reference exposure level (REL) of 5 μg/m$^3$.

Source: FCS 2018, Appendix B of IS/MND.

The sensitive receptor that has the highest cancer risks is located immediately north of the northern border of Site C, on the western portion of the Terrace Apartments project site. This
sensitive receptor is located in an existing apartment building within the existing 16.9-acre multi-family apartment complex. As shown in Table 6, the project’s construction DPM emissions would not exceed the non-cancer hazard index significance threshold; however, the project’s construction DPM emissions would exceed the cancer risk significance threshold. The implementation of MM AIR-2, requiring the use of off-road construction equipment that meet emissions standards for Tier IV Interim engines, is required to reduce impacts to less than significant. Table 7, below, summarizes the health and hazard impacts at the maximum impacted sensitive receptor from construction of the project with the implementation of MM AIR-2.

Table 7: Estimated Health Risks and Hazards—Project Construction-with Tier IV Interim Off-Road Diesel Engines

<table>
<thead>
<tr>
<th>Source</th>
<th>Cancer Risk (risk per million)</th>
<th>Chronic Non-Cancer Hazard Index(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risks and Hazards at the Maximum Impacted Sensitive Receptor: Infants(1)</td>
<td>5.9</td>
<td>0.01</td>
</tr>
<tr>
<td>Risks and Hazards at the Maximum Impacted Sensitive Receptor: Child(1)</td>
<td>0.8</td>
<td>0.01</td>
</tr>
<tr>
<td>Risks and Hazards at the Maximum Impacted Sensitive Receptor: Adult(1)</td>
<td>0.1</td>
<td>0.01</td>
</tr>
<tr>
<td>Significance Threshold</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Exceeds Individual Source Threshold?</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes:
(1) Maximum impacted sensitive receptor is an existing apartment building at the Terrace Apartments.
(2) Chronic non-cancer hazard index was estimated by dividing the maximum annual DPM concentration (as PM10 exhaust) by the REL of 5 μg/m³.

As shown in Table 7, emissions from construction of the project would not exceed the cancer risk and non-cancer hazard index significance thresholds with implementation of MM AIR-2. Therefore, the project would not result in a significant impact on nearby sensitive receptors from toxic air contaminants during construction with the implementation of MM AIR-2.

Toxic Air Contaminant Operational Analysis
Common sources of TACs include distribution centers, large gas dispensing facilities, and dry cleaners. Operation of the project would not include those uses and therefore would not emit TACs. Therefore, the operation of the project would not result in a significant health risk during operations.

Cumulative HRA Impacts during Construction and Operation
As previously discussed, projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant. As discussed in Criteria 1 through 3, the project would not expose sensitive
receptors to substantial pollutant concentrations with the implementation of MM AIR-1 and MM AIR-2. Since the project would not exceed the project-specific thresholds with mitigation incorporated, it would not be considered to result in cumulatively significant impacts.

Significance Determination: Less than significant impact with mitigation incorporated.

Mitigation Measures: MM AIR-1 and MM AIR-2

MM AIR-2 During construction activities, all off-road equipment with engines greater than 50 horsepower shall meet either the EPA or ARB Tier IV Interim off-road emission standards. The construction contractor shall maintain records concerning its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information may include but are not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number.

If engines that comply with Tier IV Interim off-road emission standards are not commercially available, then the construction contractor shall use the next cleanest piece of off-road equipment (e.g., Tier III) available. For purposes of this mitigation measure, “commercially available” shall mean the availability of Tier IV Interim engines taking into consideration factors such as critical-path timing of construction; and geographic proximity to the project site of equipment. The contractor can maintain records for equipment that is not commercially available by providing letters from at least two rental companies for each piece of off-road equipment where the Tier IV Interim engine is not available.

Significance Determination After Mitigation: Less than significant.

e) Create objectionable odors affecting a substantial number of people?

Odors can cause a variety of responses. The impact of an odor is dependent on interacting factors such as frequency (how often), intensity (strength), duration (in time), offensiveness (unpleasantness), location, and sensory perception. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Odor-related symptoms reported in a number of studies include nervousness, headache, sleeplessness, fatigue, dizziness, nausea, loss of appetite, stomach ache, sinus congestion, eye irritation, nose irritation, runny nose, sore throat, cough, and asthma exacerbation (SCAQMD 2007).

The SCAQMD’s role is to protect the public’s health from air pollution by overseeing and enforcing regulations (SCAQMD 2007). The SCAQMD’s resolution activity for odor compliance is mandated under California Health and Safety Code (HSC) Section 41700, and falls under SCAQMD Rule 402. This rule on Public Nuisance Regulation 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 SCAQMD does not provide a suggested screening distance for a variety of odor-generating land uses and operations. However, the San Joaquin Valley Air Pollution Control District (SJVAPCD) does have a screening distance for odor sources. Those distances are used as a guide to assess whether nearby facilities could be sources of significant odors. Projects that would site a new receptor farther than the applicable screening distances from an existing odor source would not likely to have a significant impact. These screening distances by type of odor generator are listed in Table 8.

Table 8: Screening Levels for Potential Odor Sources

<table>
<thead>
<tr>
<th>Odor Generator</th>
<th>Screening Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wastewater Treatment Facilities</td>
<td>2 miles</td>
</tr>
<tr>
<td>Sanitary Landfill</td>
<td>1 mile</td>
</tr>
<tr>
<td>Transfer Station</td>
<td>1 mile</td>
</tr>
<tr>
<td>Composting Facility</td>
<td>1 mile</td>
</tr>
<tr>
<td>Petroleum Refinery</td>
<td>2 miles</td>
</tr>
<tr>
<td>Asphalt Batch Plant</td>
<td>1 mile</td>
</tr>
<tr>
<td>Chemical Manufacturing</td>
<td>1 mile</td>
</tr>
<tr>
<td>Fiberglass Manufacturing</td>
<td>1 mile</td>
</tr>
<tr>
<td>Painting/Coating Operations (e.g., auto body shop)</td>
<td>1 mile</td>
</tr>
<tr>
<td>Food Processing Facility</td>
<td>1 mile</td>
</tr>
<tr>
<td>Feed Lot/Dairy</td>
<td>1 mile</td>
</tr>
<tr>
<td>Rendering Plant</td>
<td>1 mile</td>
</tr>
</tbody>
</table>

Source: SJVAPCD 2015.

*Construction-related Odors*

Potential sources that may emit odors during construction activities include exhaust from diesel construction equipment. However, because of the temporary nature of these emissions, the intermittent nature of construction activities, and the highly diffusive properties of diesel PM exhaust, nearby receptors would not be affected by diesel exhaust odors associated with project construction. Odors from these sources would be localized and generally confined to the immediate area surrounding the proposed project site. The project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Impacts would be less than significant.
**Operational-related Odors**

The project would redevelop 3.3 acres of an existing multi-family apartment community to include 167 additional apartment units and associated parking. Residential developments are not typical odor-generating land uses. Land uses typically considered associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. Minor sources of odors, such as exhaust from mobile sources, are not typically associated with numerous odor complaints, but are known to have temporary and less concentrated odors. The project’s long-term operational activities would not have any substantial odor sources that would expose nearby receptors. Considering the low intensity of potential odor emissions, the project’s operational activities would not expose receptors to objectionable odor emissions. Impacts would be less than significant.

**The Project as a Sensitive Receptor**

As a residential project, the project has the potential to place sensitive receptors near existing odor sources. The project site is not located within 2 miles of a wastewater treatment facility or a petroleum refinery. There are no solid waste facilities or other major odor generating sources (as listed in Table 8) within screening distance of the site. Therefore, the uses in the vicinity of the project would not cause substantial odor impacts to the project. Furthermore, the project consists of expanding an existing apartment complex that already contains sensitive receptors; therefore, the project would not place sensitive receptors closer to existing sources of odor compared to the existing residents.

**Significance Determination:** Less than significant impact.  
**Mitigation Measures:** No mitigation measures are required.  
**Significance Determination After Mitigation:** Less than significant.
4. **BIOLOGICAL RESOURCES.** Would the project:

<table>
<thead>
<tr>
<th></th>
<th>Would the project:</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?</td>
<td>✗</td>
<td>ᵇ</td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>(b)</td>
<td>Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?</td>
<td>✗</td>
<td>ᵇ</td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>(c)</td>
<td>Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</td>
<td>✗</td>
<td>ᵇ</td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>(d)</td>
<td>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?</td>
<td>✗</td>
<td>ᵇ</td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>(e)</td>
<td>Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?</td>
<td>✗</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
</tr>
<tr>
<td>(f)</td>
<td>Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?</td>
<td>✗</td>
<td>❌</td>
<td>❌</td>
<td>❌</td>
</tr>
</tbody>
</table>

**Environmental Setting**

The analysis in this section is based, in part, on the Tree Survey Report prepared by FCS on July 31, 2018, and the Biological Resources Supporting Information prepared by FCS on August 31, 2017. These documents are provided in Appendix A and Appendix C, respectively, of this IS/MND.

**Impact Analysis**

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

A significant impact would occur if a project were to remove or modify habitat for any species identified or designated 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 (CDFW) or the United States Fish and Wildlife Service (USFWS). Much of the City’s urbanized areas provide low habitat value for sensitive species.
The Biological Resources analysis for the project site found that the project site is located in a
developed portion of the City and does not support natural plant communities or native soils
(Appendix C, Biological Resources Supporting Information). The project site is previously
developed land consisting of 441 multi-family residential apartment units in eight buildings. The
project site contains no undeveloped natural open land capable of supporting natural vegetation
or habitats. The project site is also absent of natural topography such as slopes, canyons,
mounds, gullies, draws, rivulets, terraces, channels, drainages, and other natural features.

The project is not anticipated to have direct or indirect impacts on listed or sensitive plants or
wildlife. The literature review and field survey concluded that the project site lacks suitable and
adequate biological and physical features that are needed to support special-status wildlife species
(Appendix C, Biological Resources Assessment). Further, the literature review also determined
that the project site is not located within a designated or proposed critical habitat for listed plant or
wildlife species. The wildlife observed and/or detected within the project site during the field
survey conducted on August 31, 2018, represents the diversity of wildlife in the surrounding areas
and in urban built out areas. Therefore, there would be no impact in this regard.

**Significance Determination: No impact.**

**Mitigation Measures: No mitigation measures are required.**

**Significance Determination After Mitigation: No impact.**

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

A significant impact would occur if riparian habitat or any other sensitive natural community
identified in local or regional plans, policies, and regulations or by the CDFW or USFWS were
to be adversely modified without adequate mitigation.

One land cover type was determined to be present within the project site as determined by the
literature review and field survey:

- Developed lands and ornamental landscaping.

Developed lands are non-vegetated features that describe areas occupied by man-made
structures, paving and other impermeable surfaces that cannot support vegetation. On-site
developed lands consist of a paved parking lot, driveway and other permanent structures.
Landscaping (ornamental trees, shrubs, turf, etc.) associated with the developed lands are also
included within this category. The developed areas provide virtually no habitat for wildlife
species; however, birds could use the ornamental trees for roosting, foraging, and nesting.
Developed lands are not considered a sensitive plant community.

Further, the literature review determined that the project site does not contain National Wetlands
Inventory (NWI) wetlands. The jurisdictional assessment of the project site as part of the site
visit determined that the project site does not contain hydrological features, wetlands, marshes, vernal pools, channels with a bed or bank, or evidence of an ordinary high water mark (OHWM); therefore, the project site does not contain federal or State wetlands, waters, or habitats that are potentially subject to the jurisdictional authority of the United States Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), or the CDFW. No riparian habitat or other sensitive natural communities were observed on project site; therefore, the project is not anticipated to have direct or indirect impacts on riparian habitats or other sensitive natural communities. The project is not anticipated to have any substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. There would be no impact.

**Significance Determination:** No impact.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination After Mitigation:** No impact.

c) **Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

A significant impact would occur if federally protected wetlands, as defined by Section 404 of the Clean Water Act, would be modified or removed by a project without adequate mitigation. The literature review determined that the project site does not contain NWI wetlands.

A jurisdictional assessment of the project site was conducted as part of the biological field survey on August 31, 2018. The jurisdictional assessment further determined that the project site does not contain hydrological features, wetlands, marshes, vernal pools, channels with a bed or bank, or evidence of an OHWM; therefore, the project site does not contain federal or State wetlands, waters, or habitats that are potentially subject to the jurisdictional authority of the USACE, the RWQCB, or CDFW. The project site is developed and does not support aquatic features, natural or man-made water bodies and wetlands or jurisdictional areas; therefore, the project is not anticipated to have direct or indirect impacts on federally protected wetlands as defined by Section 404 of the Clean Water Act. The project is anticipated to have no substantial adverse effect on federally protected wetlands through direct removal, filling, hydrological interruption, or other means. There would be no impact.

**Significance Determination:** No impact.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination After Mitigation:** No impact.
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 wildlife nursery sites?**

A significant impact would occur if a project would interfere with or remove access to a migratory wildlife corridor or impede the use of wildlife nursery sites. The literature review determined that the project site is not located within a CDFW designated Essential Habitat Connectivity Area or a Natural Landscape Block. The biological field survey determined that the project site does not function as a wildlife movement corridor. Additionally, the project site does not contain wildlife travel routes, such as a riparian strip, ridgeline, or drainage; or wildlife crossings, such as a tunnel, culvert, or underpass. The project site is not located adjacent to nor does it connect large blocks of continuous habitat. The project site does not represent a wildlife movement corridor because the site is completely developed and surrounded by other development, walls, and roadways. These permanent structures serve as significant barriers to wildlife movement through the project site and region. Further, the project site does not support resident or migratory fish species and no native wildlife nursery sites or rookeries were observed within the project site during the field survey.

While the project site is developed, it contains landscaped/ornamental trees and/or structures that could potentially provide cover, foraging, and nesting habitat for resident and migratory birds that have adapted to urban areas, such as rock pigeons (*Columba livia*) and mourning doves (*Zenaida macroura*). Mourning doves are protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (FGC) (FGC §§ 3503, 3503.5, and 3513), which render it unlawful to take native breeding birds, and their nests, eggs, and young. The project has the potential to result in direct impacts on breeding birds if construction activities occur during the bird breeding season (February 15 through September 15) and birds are nesting within the project site and/or immediate vicinity at that time. Temporary direct impacts on breeding birds could occur from increased noise, vibration, and dust during construction, which could adversely affect the breeding behavior of some birds, and lead to the loss (take) of eggs and chicks, or nest abandonment. For these reasons, project construction during bird breeding season could have potentially significant impacts on nesting birds.

MM BIO-1 includes recommendations for project construction outside of bird breeding season (February 15 through September 15), and precautions for construction during breeding season, which include a pre-construction nesting bird survey of the site prior to the start of construction. The mitigation measure also provides recommendations if nesting birds are found on-site, including the complete avoidance of active nests until young have fledged. The implementation of MM BIO-1 would help to avoid, eliminate, or reduce direct impacts on breeding birds to less than significant levels. Impacts would be less than significant with mitigation.

**Significance Determination: Less than significant impact with mitigation incorporated.**
Mitigation Measures:

MM BIO-1 Construction during Breeding Season and Pre-construction Breeding Bird Surveys

- Project activities that would remove or disturb potential nest sites would be scheduled outside the breeding bird season, if feasible. The breeding bird nesting season is typically from February 15 through September 15, but can vary slightly from year to year, usually depending on weather conditions. Removing all physical features that could potentially serve as nest sites outside of the breeding bird season also would help to prevent birds from nesting within the project site during the breeding season and during construction activities.

- If project activities that would remove or disturb potential nest sites cannot be avoided during February 15 through September 15, a qualified biologist would conduct a pre-construction clearance and nesting bird survey to search for all potential nesting areas, breeding birds, and active nests or nest sites within the limits of project disturbance up to seven days prior to mobilization, staging and other disturbances. It would end no more than three days prior to vegetation, substrate, and structure removal and/or disturbance.

- If no breeding birds or active nests are observed during the pre-construction survey, or if they are observed and would not be disturbed, then project activities may begin and no further mitigation would be required.

- If an active bird nest is located during the pre-construction survey and potentially would be disturbed, a no-activity buffer zone would be delineated on maps and marked (flagging or other means) up to 500 feet for special-status avian species and raptors, or 75 feet for non-special status avian species. The limits of the buffer would be demarcated as to not provide a specific indicator of the location of the nest to predators or people. Materials used to demarcate the nests would be removed as soon as work is complete or the fledglings have left the nest. The biologist would determine the appropriate size of the buffer zone based on the type of activities planned near the nest and bird species because some bird species are more tolerant than others to noise and other disturbances. Buffer zones would not be disturbed until a qualified biologist determines that the nest is inactive. Additionally, the area would also not be disturbed until the young have fledged, the parents are no longer feeding the young, the young have left the area, or the young would no longer be impacted by project activities.

- Birds or their active nests will not be disturbed, captured, handled or moved. Inactive nests may be moved by a qualified biologist, if necessary, to avoid disturbance by project activities.

Significance Determination After Mitigation: Less than significant.
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

A project-related significant adverse effect could occur if a project would cause an impact that is inconsistent with local regulations pertaining to biological resources. The City’s Master Street Tree Plan and the Tree Preservation Ordinance are the primary local measures to protect biological resources. The Master Street Tree Plan and the Tree Preservation Ordinance are effective procedures to monitor the potential for impacts to existing trees that provide roosting and nesting habitat for native and migratory birds throughout the City (City of Orange 2010).

Chapter 12.32 of the City’s Municipal Code establishes a Tree Preservation Program for the City, which includes the preservation of historic trees. This chapter defines historical trees as those, which by virtue of their origin, size, uniqueness, and/or national or regional rarity are now or are likely to be of historical value. Trees determined to be historic are compiled on a master list, which is maintained by the Community Services Department and approved by resolution of the City Council (City of Orange 2010).

The project site is not recognized by the City as an undeveloped or public interest property as defined in Chapter 12.32 of the Municipal Code. The project site contains numerous landscape trees on private property. There are 187 mature ornamental trees within and immediately adjacent to the project site (48 native trees and 139 non-native trees) (Appendix A). Of the 187 trees, approximately 130 trees are on the property, while 57 trees are within 25-feet of the project site. Some of these trees would be removed during project implementation; however, none of these trees meets the definition of historical tree, occurs on undeveloped property or would otherwise fall under the provisions of Chapter 12.32 of the Orange Municipal Code. Therefore, the City’s Tree Preservation Ordinance does not apply to the project. There would be no impact.

Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

A significant impact would occur if a project is inconsistent with mapping or policies in any conservation plans of the types cited. The City of Orange is subject to the Orange County Central/Coastal Natural Community Conservation Plan (NCCP) Subregional Plan. Under the NCCP Subregional Plan, the coastal California gnatcatcher (*Polioptila californica*), coastal cactus wren (*Campylorhynchus brunneicapillus*), and orange-throated whiptail lizard (*Aspidoscelis hypyrytha*), all of which are currently on the federal list of threatened or endangered species, were designated as “target species” by the Orange County Central/Coastal NCCP/Habitat Conservation Plan (HCP) and sufficient coastal sage scrub and other essential
habitat are protected to benefit a much broader range of coastal sage scrub-related species (City of Orange 2010).

The project site is not located within the boundary of and does not contain undeveloped natural lands subject to an adopted HCP, the Orange County Central/Coastal NCCP Subregional Plan or any other approved local, regional, or State HCP; therefore, the project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or State HCP. The site and surrounding environs are entirely urbanized with limited landscape areas. There would be no impact.

Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.
5. **Cultural Resources.**

Would the project:

<table>
<thead>
<tr>
<th>(a)</th>
<th>Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Potentially Significant Impact</td>
</tr>
<tr>
<td>(b)</td>
<td>Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?</td>
</tr>
<tr>
<td></td>
<td>Potentially Significant Impact</td>
</tr>
<tr>
<td>(c)</td>
<td>Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?</td>
</tr>
<tr>
<td></td>
<td>Potentially Significant Impact</td>
</tr>
<tr>
<td>(d)</td>
<td>Disturb any human remains, including those interred outside of dedicated cemeteries?</td>
</tr>
<tr>
<td></td>
<td>Potentially Significant Impact</td>
</tr>
</tbody>
</table>

**Environmental Setting**

This section describes the potential effects from project implementation on the project site and its surrounding area. Descriptions and analysis in this section are based on information provided by the Native American Heritage Commission (NAHC), South Central Coastal Information Center (SCCIC), and California State University, Fullerton, California. To identify any historic properties or resources, the current inventories of the National Register of Historic Places (NRHR), the California Register of Historic Resources (CRHR), the California Historical Landmarks list (CHL), the California Points of Historical Interest (CPHI) list, and the California Historical Resources Inventory (HRI) for Orange County, and the University of California Museum of Paleontology Paleontological Database, as well as a site visit. Supporting information is provided in Appendix D.

**Impact Analysis**

a) **Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?**

A project-related significant adverse effect would occur if a project were to adversely affect a historical resource meeting one of the above definitions. Section 15064.5 defines historic resources as resources listed or determined to be eligible for listing by the Historic Resources Commission, a local register of historic resources, or the lead agency. Generally, a resource is considered “historically significant” if it meets one of the following criteria:

i) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;

ii) Is associated with the lives of persons important to our past;

iii) Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of an important creative individual, or possesses high artistic values;

iv) Has yielded, or may be likely to yield, information important in prehistory or history.
The project would add buildings to the project site, and no existing buildings would be demolished or removed from the site. As shown in Figure 2, the project site is currently developed with hardscape (e.g., asphalt paving, cement curbs and planters) and landscape (i.e., parking lot planters with trees and shrubs) improvements associated with two surface parking lots that are immediately adjacent to the Christ Cathedral Church located at 12141 South Lewis Street and the City Tower parking structure located at 339 City Boulevard West. Development under the proposed project would not result in any exterior or interior modifications to any existing building on or off the project site.

Additionally, as shown in Figure CR-2 of the City’s General Plan, Cultural Resources and Historic Preservation Element, there are no listed or designated historic resources on-site or within the vicinity of the project site; most of the resources identified are in the Old Towne Historic District and Plaza Historic District (City of Orange 2010). Furthermore, the project site is not a recommended site for historic designation, as shown in Figure CR-2, Resources Recommended for Designation, of the City’s General Plan Cultural Resources and Historic Preservation Element. Additionally, and as part of the Cultural Resources Assessment for the project, the project site and existing apartment buildings are also not identified on any of the historic resource lists/databases for Orange County (Appendix D, Cultural Resources Assessment). Additionally, the existing buildings on-site would remain on-site.

Given these factors, the likelihood of encountering undiscovered historic resources over the course of project construction is considered low. The proposed project would not have an impact on historic resources.

**Significance Determination: No impact.**
**Mitigation Measures: No mitigation measures are required.**
**Significance Determination After Mitigation: No impact.**

b) **Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?**

Section 15064.5 of the State CEQA Guidelines defines significant archaeological resources as resources that meet the criteria for historical resources, as discussed above, or resources that constitute unique archaeological resources. A project-related significant adverse effect could occur if a project were to affect archaeological resources that fall under either of these categories.

As shown in Figure 2, the project site is developed with an existing surface lot and subterranean parking that serves the Terrace Apartments community. The project site is in an urbanized area of the City and is surrounded by a mix of residential, commercial/retail, education, and office uses. The project site has already been subject to construction and ground-disturbing activities similar to that which would occur under the proposed project. According to the cultural resources records search for the project, no archaeological or historical sites have been recorded on or within a 0.25-mile radius of the project site (Appendix D). There have been six technical studies conducted within the records search buffer, but none included the project site.
Given the highly disturbed condition of the project site and its surroundings, the potential for development of the proposed project to affect an unidentified archaeological resource is considered low. However, while unlikely, the presence of subsurface archaeological resources on the project site remains possible, and these could be affected by ground-disturbing activities associated with grading and construction at the site. It is possible that subsurface disturbance would occur at levels not previously disturbed (e.g., deeper excavation than previously performed) or may uncover undiscovered archaeological resources at the site. MM CUL-1 provides direction for the proper recordation of previously undiscovered archaeological resources, should they be found during project construction activities. Implementation of MM CUL-1 would ensure that this potential impact is reduced to a less-than-significant level.

Significance Determination: Less than significant impact with mitigation incorporated.

Mitigation Measures:
MM CUL-1 In the event a potentially significant cultural resource is encountered during subsurface earthwork activities, all construction activities within a 100-foot radius of the find shall cease and workers should avoid altering the materials until a qualified archaeologist who meets the Secretary of Interior’s Professional Qualification Standards for archaeology has evaluated the situation. The Applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction activities shall be recorded on appropriate Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of CEQA criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to stone, bone, glass, ceramics, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. If the resource is determined to be significant under CEQA Guidelines Section 15064.5, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant in accordance with Section 15064.5 of the CEQA Guidelines. The archaeologist shall also perform appropriate technical analyses, prepare a comprehensive report complete with methods, results, and recommendations, and provide for the permanent curation or repatriation of the recovered resources in cooperation with the designated most likely descendant as needed. The report shall be submitted to the City of Orange, the South Central Coastal Information Center, and the State Historic Preservation Office (SHPO), if required.

Significance Determination After Mitigation: Less than significant.

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

A significant adverse effect could occur if grading or excavation activities associated with a project would disturb paleontological resources or geologic features, if any exist within the project site.
Paleontological resources include fossil remains, fossil localities, and formations that have produced fossil material in other nearby areas. Paleontological resources are limited, nonrenewable, sensitive scientific and educational resources, including fossils preserved either as impressions of soft (fleshy) or hard (skeletal) parts, mineralized remains of skeletons, tracks, or burrows; other trace fossils; coprolites (fossilized excrement); seeds or pollen; and other microfossils from terrestrial, aquatic, or aerial organisms. The City of Orange General Plan has designated most of the planning area generally east of SR-55 as an area of paleontological resource sensitivity (City of Orange, 2010).

While unlikely for the same reasons outlined above in Section (b), the presence of subsurface paleontological resources on the project site remains possible and could be affected by ground-disturbing activities associated with grading and construction at the site. It is possible that subsurface disturbance will occur at levels not previously disturbed (e.g., deeper excavation than previously performed in certain locations) or may uncover undiscovered paleontological resources at the site. Furthermore, the Cultural Resources Assessment indicates that a review of paleontological records shows that sensitive fossiliferous sediments could be encountered during deep construction excavation on the site. MM CUL-2 requires paleontological monitoring on the project site as well as proper documentation and recordation should paleontological resources be found as part of project construction activities. The implementation of MM CUL-2, would help to reduce impacts to found paleontological resources. The project’s impact to paleontological resources would be less than significant with the implementation of mitigation.

**Significance Determination:** Less than significant impact with mitigation incorporated.

**Mitigation Measures:**

**MM CUL-2**

A cultural resources monitor should be present during all project excavations that occur 10 feet or more below ground surface. In the event that fossils or fossil-bearing deposits are discovered during construction activities, excavations within a 100-foot radius of the find shall be temporarily halted or diverted. The applicant shall retain a qualified paleontologist to examine the discovery. The applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall document the discovery as needed in accordance with Society of Vertebrate Paleontology standards and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction activities are allowed to resume at the location of the find. If the applicant determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of construction activities on the discovery. The plan shall be submitted to the City of Orange for review and approval prior to implementation, and the applicant shall adhere to the recommendations in the plan.

**Significance Determination After Mitigation:** Less than significant.
d) Disturb any human remains, including those interred outside of formal cemeteries?

A significant adverse effect would occur if grading or excavation activities associated with a project were to disturb previously interred human remains. No human remains or cemeteries are known to exist within or near the project area. The nearest cemetery, Cathedral Memorial Gardens, is approximately 1 mile from the project site. However, there is always the possibility that subsurface construction activities associated with the proposed project, such as trenching and grading, could potentially damage or destroy previously undiscovered human remains. Accordingly, this is a potentially significant impact. In the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5; Health and Safety Code Section 7050.5; Public Resources Code Section 5097.94 and Section 5097.98 would be followed. MM CUL-3 requires cessation of work and assessment of the remains by the County Coroner in the unlikely event human remains are discovered. The implementation of MM CUL-3 would help to reduce this potential impact to a less than significant level. The project’s impact through the inadvertent discovery of human remains would be less than significant with mitigation incorporated.

**Significance Determination: Less than significant impact with mitigation incorporated.**

**Mitigation Measures:**

**MM CUL-3** If human remains are encountered during excavations associated with this project, all work shall stop within 50 feet of the find, and the County Coroner shall be notified (HSC § 7050.5). If the coroner determines that the remains are of Native American origin, he or she shall contact the Native American Heritage Commission.

**Significance Determination After Mitigation: Less than significant.**
6. GEOLOGY AND SOILS. Would the project:

<table>
<thead>
<tr>
<th>Impact</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>ii) Strong seismic ground shaking?</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>iii) Seismic-related ground failure, including liquefaction?</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>iv) Landslides?</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>(b) Result in substantial soil erosion or the loss of topsoil?</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>(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?</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>(d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>(e) 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?</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

Environmental Setting

The analysis in this section is based in part on a Preliminary Geotechnical Investigation Report prepared by GMU Technical, Inc. The complete report is provided in Appendix E.

Impact Analysis

a) Expose people or structures to 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.

According to the City of Orange General Plan Public Safety Element (City of Orange 2010), the project site is not located within an Alquist-Priolo Earthquake Fault Zone and there are no active or potentially active faults within the project boundaries. This condition precludes the possibility of the proposed project being exposed to fault rupture. No impact would occur.

Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.
ii) **Strong seismic ground shaking?**

According to the City of Orange General Plan Public Safety Element (City of Orange 2010), no known Alquist-Priolo fault zone is located in the City of Orange. However, the project site is located in a seismically active region of California and may be exposed to strong ground shaking during a seismic event. According to the Preliminary Geotechnical Investigation Report the nearest known active faults are the San Joaquin Hills and the Puente Hills (Coyote Hills) systems, which are located approximately 6 miles from the site and capable of generating a maximum earthquake magnitude (Mw) of 6.9 and 7.1, respectively (Appendix E). Given the proximity of the site to these and numerous other active and potentially active faults, the site will likely be subject to earthquake ground motions in the future. All project structures would be required to adhere to the latest adopted edition of the California Building Standards Code, which includes seismic design standards. Compliance with seismic design standards would ensure that persons or structures would not be exposed to undue risk of loss, injury, or death from strong ground shaking. Impacts would be less than significant.

**Significance Determination:** Less than significant impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** Less than significant.

iii) **Seismic-related ground failure, including liquefaction?**

According to Figure PS-1 of the Orange General Plan Public Safety Element (City of Orange 2010) the proposed project site is not located within an area susceptible to liquefaction. Further, the Preliminary Geotechnical Investigation Report finds that based on the review of the State of California Official Map of Seismic Hazard for the Anaheim Quadrangle, the site is not located within a zone of required investigation for liquefaction (Appendix E).

All project structures would be required to adhere to the latest adopted edition of the California Building Standards Code, which includes seismic design standards. Compliance with seismic design standards would ensure that persons or structures would not be exposed to undue risk of loss, injury, or death from strong liquefaction. Impacts would be less than significant.

**Significance Determination:** Less than significant impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** Less than significant.

iv) **Landslides?**

According to Figure PS-1 of the Orange General Plan Public Safety Element (City of Orange 2010) the proposed project site is not located in a landslide hazard area. In addition, the Preliminary Geotechnical Investigation Report indicates that due to the relatively level nature of the site and surrounding areas, the potential for the landslides to occur at the project site is
considered negligible (Appendix E). This condition precludes the possibility of the proposed project being exposed to land sliding. No impact would occur.

**Significance Determination:** No impact.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination After Mitigation:** No impact.

b) **Result in substantial soil erosion or the loss of topsoil?**

A significant impact may occur if a project exposes large areas to the erosional effects of wind or water for a protracted period of time. Development of the proposed project would include construction activities that would expose soils and could potentially result in substantial erosion. Excavation would be limited to that necessary for the installation of building foundations and utilities. All grading activities require adherence to the City’s grading ordinance, which includes requirements and standards designed to limit potential impacts to acceptable levels. During construction, the project would be required to prevent the transport of sediments from the site by stormwater runoff and winds through the use of appropriate BMPs.

Furthermore, the State Water Resources Control Board (State Water Board) adopted a National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). To obtain coverage under the Construction General Permit, a project applicant must submit various documents, including a Notice of Intent and a Storm Water Pollution Prevention Plan (SWPPP). Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation. The purpose of the SWPPP is to identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges and to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. This is discussed in further detail in Section 9, Hydrology and Water Quality.

Additionally, to reduce potential impacts due to grading for the project, the recommendations in the Preliminary Geotechnical Investigation Report have been incorporated into the project as project design features and BMPs. The recommendations pertaining to stormwater runoff and soil erosion in the Preliminary Geotechnical Investigation Report include:

1) The clearing and grubbing of all significant organic material such as weeds, brush, tree branches, construction debris including old irrigation lines, asphalt concrete, and other decomposable material prior to grading.

2) If the temporary construction slopes are to be maintained during the rainy season, berms are recommended to be graded along the tops of the slopes in order to prevent runoff water from entering the excavation and eroding the slope faces.

3) Surface drainage should be carefully controlled during and after grading to prevent ponding and uncontrolled runoff adjacent to the structures. Particular care will be
required during grading to maintain slopes, swales, and other erosion control measures needed to direct runoff toward permanent surface drainage facilities.

These recommendations will serve to reduce soil erosion during construction by reducing the debris on site that could be washed into the municipal stormwater system in a storm event, to contain slopes in order to prevent runoff water from eroding newly constructed slope faces, and to direct surface water to drainage facilities instead of allowing it to sheet flow or otherwise enter the stormwater system.

To further reduce the potential impacts of soil erosion, the project would implement MM GEO-1, which requires the preparation of a SWPPP prior to the issuance of demolition permits. Implementation of MM GEO-1 would reduce this impact to a level of less than significant. Impacts would be less than significant with the implementation of mitigation.

**Significance Determination: Less than significant with mitigation incorporated.**

**Mitigation Measures:**

**MM GEO-1** Prior to issuance of demolition permits for the proposed project, the City of Orange shall verify that the applicant has prepared a SWPPP in accordance with the requirements of the Statewide Construction General Permit. The SWPPP shall be designed to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a RWQCB permit, all non-stormwater discharges (e.g., chemicals) are identified and either eliminated, controlled, or treated; (3) site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity; and (4) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed. The SWPPP shall be prepared by a qualified SWPPP developer. The SWPPP shall include the minimum BMPs required for the identified risk level. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association (CASQA) Stormwater Best Management Handbook-Construction or the Caltrans Stormwater Quality Handbook Construction Site BMPs Manual, as determined by City Staff.

**Significance Determination After Mitigation: Less than significant.**

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?**

Refer to Impacts 4.6.a.ii) and 4.6.a.iii) above for discussions of potential impacts related to liquefaction and earthquake-induced landslides, respectively. As the site is relatively level, there is no potential for landslides or slope instabilities. Additionally, as the project site has a low potential...
for liquefaction, the potential for lateral spreading is also low. Compliance with the City’s Building Regulations and the California Building Code would ensure that project implementation would not expose people or structures to potential substantial adverse effects involving unstable geologic units or soils. Therefore, impacts resulting from unstable soil would be less than significant.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant.

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

The results of the Preliminary Geotechnical Investigation Report, provided as Appendix E, indicate that on-site soils within the at-grade foundation influence zone are anticipated to have a low expansion potential based on the recent laboratory test results and local experience. However, site clayey soils within the below-grade foundation influence zone are anticipated to have a low to medium expansion potential. All project structures would be required to adhere to the latest adopted edition of the California Building Standards Code, which includes engineering design standards. Additionally, compliance with seismic design standards would also serve to ensure that persons or structures would not be exposed to undue risk of loss, injury, or death from unstable geologic units or soils. Impacts would be less than significant and no mitigation is necessary.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant.

e) 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 proposed project would connect to the City’s existing wastewater service, which provides service to the surrounding vicinity. The project would not require an alternative method of wastewater conveyance. The project would have no impact related to soils capability to support wastewater disposal. There would be no impact and no mitigation is necessary.

Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.
7. **Greenhouse Gas Emissions**

*Would the project:*

<table>
<thead>
<tr>
<th>Would the project:</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
</tr>
<tr>
<td>(b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Environmental Setting**

This analysis in this section is based, in part, on the Greenhouse Gas (GHG) Analysis report prepared by FCS on September 13, 2018. The report is provided in its entirety in Appendix F of this IS/MND.

The project site is located within the jurisdiction of the SCAQMD.

**SCAQMD GHG Thresholds**

The SCAQMD formed a working group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the air basin in 2008. The working group developed several different options that are contained in the SCAQMD Draft Guidance Document—Interim CEQA Greenhouse Gas Significance Threshold (Interim GHG Thresholds) that could be applied by lead agencies. The working group has not provided additional guidance since release of the interim guidance in 2008. The SCAQMD Board has not approved the thresholds; however, the Guidance Document provides substantial evidence supporting the approaches to significance of GHG emissions that can be considered by the lead agency in adopting its own threshold. The current interim thresholds consist of the following tiered approach:

- **Tier 1** consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.

- **Tier 2** consists of determining whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.

- **Tier 3** consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project’s construction emissions are averaged over 30 years and are added to the project’s operational emissions. If a project’s emissions are below one of the following screening thresholds, then the project is less than significant:
  - All land use types: 3,000 metric tons (MT) carbon dioxide equivalents (CO₂e) per year
  - Based on land use type: residential: 3,500 MT CO₂e per year; commercial: 1,400 MT CO₂e per year; or mixed use: 3,000 MT CO₂e per year
Tier 4 has the following options:
- Option 1: Reduce business as usual (BAU) emissions by a certain percentage; this percentage is currently undefined.
- Option 2: Early implementation of applicable Assembly Bill (AB) 32 Scoping Plan measures
- Option 3: 2020 target for service population (SP), which includes residents and employees: 4.8 MT CO₂e/SP/year for projects and 6.6 MT CO₂e/SP/year for plans
- Option 3: 2035 target: 3.0 MT CO₂e/SP/year for projects and 4.1 MT CO₂e/SP/year for plans

Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD’s draft threshold uses the Executive Order S-3-05 year 2050 goal as the basis for the Tier 3 screening level. Achieving the Executive Order’s objective would contribute to worldwide efforts to cap CO₂ concentrations at 450 ppm, thus stabilizing global climate.

City of Orange GHG Thresholds

The City of Orange has not adopted its own GHG thresholds, nor has the City prepared a Climate Action Plan that can be used as a basis for determining project significance. However, in its Interim Guidance for GHG 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 MT of carbon dioxide equivalents (MT CO₂e) per year
- Residential, Commercial, and Mixed-Use Projects (including industrial parks, warehouses, etc.)—3,000 MT CO₂e per year

Because of the nature of the project, the applicable GHG significance threshold is 3,000 MT CO₂e. If the project would generate GHG emissions below the threshold, it is acceptable to conclude that the project’s GHG contribution would not be “cumulatively considerable” and would therefore be “less than significant” under CEQA.

Impact Analysis

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

Construction Emissions

The project would generate GHG emissions during construction activities resulting from emission sources such as construction equipment, haul trucks, and construction worker vehicles. Although these emissions would be temporary and short-term in nature, they could represent a
substantial contribution of GHG emissions. Construction emissions were modeled using CalEEMod version 2016.3.2. See Appendix F for detailed modeling parameters and assumptions.

Table 9 presents the project’s total construction emissions, which are amortized over the assumed lifetime of the project and added with annual operational emissions.

Table 9: Estimated Construction-Related Greenhouse Gas Emissions

<table>
<thead>
<tr>
<th>Construction Activity</th>
<th>Total GHG Emissions (MT CO₂e per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td></td>
</tr>
<tr>
<td>Demolition</td>
<td>13</td>
</tr>
<tr>
<td>Site Preparation/Shoring Operation</td>
<td>11</td>
</tr>
<tr>
<td>Grading/Excavation Operation</td>
<td>245</td>
</tr>
<tr>
<td>Paving/Concrete Structure—2019</td>
<td>43</td>
</tr>
<tr>
<td>Shotcrete</td>
<td>27</td>
</tr>
<tr>
<td>2020</td>
<td></td>
</tr>
<tr>
<td>Paving/Concrete Structure—2020</td>
<td>33</td>
</tr>
<tr>
<td>Building Construction/Framing</td>
<td>150</td>
</tr>
<tr>
<td>Skin/Finishes/Sitework—2020</td>
<td>141</td>
</tr>
<tr>
<td>2021</td>
<td></td>
</tr>
<tr>
<td>Skin/Finishes/Sitework—2021</td>
<td>45</td>
</tr>
<tr>
<td><strong>Total Construction Duration (2019–2021)</strong></td>
<td><strong>707</strong></td>
</tr>
<tr>
<td><strong>Total Construction Emissions</strong></td>
<td><strong>707</strong></td>
</tr>
<tr>
<td><strong>Amortized over 30 years</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

Notes:
MT CO₂e = metric tons of carbon dioxide equivalent
Unrounded emissions were used in calculations, including the reported total; therefore, totals may not appear to sum exactly due to rounding.

1 Construction GHG emissions are amortized over the 30-year lifetime of the project.
Source: FCS 2018, Appendix F of IS/MND.

Operational Emissions
Operational or long-term emissions occur over the life of the project. Sources for operational emissions include:

- **Motor Vehicles**: These emissions refer to GHG emissions contained in the exhaust from the cars and trucks that would travel to and from the project site.

- **Natural Gas**: These emissions refer to the GHG emissions that occur when natural gas is burned on the project site. Natural gas uses could include heating water, space heating, dryers, stoves, or other uses.
• **Indirect Electricity**: These emissions refer to those generated by off-site power plants to supply electricity required for the project.

• **Area Sources**: These emissions refer to those produced during activities such as landscape maintenance.

• **Water Transport**: These emissions refer to those generated by the electricity required to transport and treat the water to be used on the project site.

• **Waste**: These emissions refer to the GHG emissions produced by decomposing waste generated by the project.

Table 10 presents the estimated annual GHG emissions from the project’s operational activities. As shown in Table 10, the project would generate approximately 1,625 MT CO$_2$e per year after the inclusion of 24 MT CO$_2$e per year from project construction.

### Table 10: Operational Greenhouse Gas Emissions

<table>
<thead>
<tr>
<th>GHG Emissions Source</th>
<th>GHG Emissions (MT CO$_2$e per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>37</td>
</tr>
<tr>
<td>Energy</td>
<td>511</td>
</tr>
<tr>
<td>Mobile</td>
<td>965</td>
</tr>
<tr>
<td>Waste</td>
<td>32</td>
</tr>
<tr>
<td>Water</td>
<td>56</td>
</tr>
<tr>
<td>Amortized Construction Emissions</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total Project Emissions</strong></td>
<td><strong>1,625</strong></td>
</tr>
<tr>
<td><strong>City of Orange Threshold</strong></td>
<td><strong>3,000</strong></td>
</tr>
<tr>
<td>Significant?</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes:
MT CO$_2$e = metric tons of carbon dioxide equivalent
Source: FCS 2018, Appendix F of IS/MND.

**Summary**

As shown in Table 10, the project’s combined amortized construction and annual operational GHG emissions would not exceed the applicable threshold of significance of 3,000 MT CO$_2$e per year. Thus, the project’s construction and operational GHG emissions would not result in a significant impact on the environment.

**Significance Determination: Less than significant impact.**
**Mitigation Measures: No mitigation measures are required.**
**Significance Determination After Mitigation: Less than significant.**
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

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 ARB’s adopted Scoping Plan. This would be achieved with an assessment of the project’s compliance with Scoping Plan measures. Although the City of Orange General Plan does not meet the CEQA Guidelines 15064.4(b)(3) requirements for an applicable plan to reduce GHG emissions, it contains policies intended to reduce vehicle travel and energy use that would provide GHG reductions. Therefore, the project’s consistency with the General Plan policies is also assessed.

AB 32 Scoping Plan

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHG emissions to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan calls for an “ambitious but achievable” reduction in California’s GHG emissions, cutting approximately 30 percent from BAU emission levels projected for 2020, or about 10 percent from 2008 levels.

The Scoping Plan contains a variety of strategies to reduce the State’s emissions. As shown in Table 11, the project is consistent with most of the strategies, while others are not applicable to the project.

**Table 11: Scoping Plan Measures Consistency Analysis**

<table>
<thead>
<tr>
<th>Scoping Plan Reduction Measure</th>
<th>Project Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. California Cap-and-Trade Program Linked to Western Climate Initiative. Implement a broad-based California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap-and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California’s program meets all applicable AB 32 requirements for market-based mechanisms.</td>
<td><strong>Not applicable.</strong> Although the cap-and-trade system has begun, the project is not one targeted by the cap-and-trade system regulations and therefore this measure does not apply to the project.</td>
</tr>
<tr>
<td>2. California Light-Duty Vehicle GHG Standards. Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.</td>
<td><strong>Not applicable.</strong> This is a Statewide measure that cannot be implemented by a project applicant or lead agency. However, the standards would be applicable to the light-duty vehicles that access the project site.</td>
</tr>
<tr>
<td>3. Energy Efficiency. Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.</td>
<td><strong>Consistent.</strong> This is a measure for the State to increase its energy efficiency standards in new buildings. The project is required to build to the new standards and would increase its energy efficiency through compliance.</td>
</tr>
</tbody>
</table>
### Table 11 (cont.): Scoping Plan Measures Consistency Analysis

<table>
<thead>
<tr>
<th>Scoping Plan Reduction Measure</th>
<th>Project Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Renewable Portfolio Standard. Achieve 33 percent renewable energy mix Statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.</td>
<td><strong>Not applicable.</strong> This is a Statewide measure that cannot be implemented by a project applicant or lead agency. SCE is required to increase its percent of power supply from renewable sources to 33 percent by the year 2020 pursuant to various regulations. The project would purchase power that comprises a greater amount of renewable sources and could install renewable solar power systems that will assist the utility in achieving the mandate.</td>
</tr>
<tr>
<td>5. Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard.</td>
<td><strong>Not applicable.</strong> This is a Statewide measure that cannot be implemented by a project applicant or lead agency. All fuel consumption associated with the project’s construction and operational activities would use fuel that meets these standards.</td>
</tr>
<tr>
<td>6. Regional Transportation-Related GHG Targets. Develop regional GHG emissions reduction targets for passenger vehicles. This measure refers to SB 375.</td>
<td><strong>Not applicable.</strong> The project is not related to developing GHG emission reduction targets.</td>
</tr>
<tr>
<td>7. Vehicle Efficiency Measures. Implement light-duty vehicle efficiency measures.</td>
<td><strong>Not applicable.</strong> When this measure is initiated, the standards would be applicable to the light-duty vehicles that would access the project site.</td>
</tr>
<tr>
<td>8. Goods Movement. Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.</td>
<td><strong>Not applicable.</strong> The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.</td>
</tr>
<tr>
<td>9. Million Solar Roofs Program. Install 3,000 megawatts of solar-electric capacity under California’s existing solar programs.</td>
<td><strong>Consistent.</strong> This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. The project would not preclude the implementation of this strategy and would comply with any Statewide mandates.</td>
</tr>
<tr>
<td>10. Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures.</td>
<td><strong>Not applicable.</strong> This is a Statewide measure that cannot be implemented by a project applicant or lead agency.</td>
</tr>
<tr>
<td>11. Industrial Emissions. Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce GHG emissions and provide other pollution reduction co-benefits. Reduce GHG emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive CH₄ emissions and reduce flaring at refineries.</td>
<td><strong>Not applicable.</strong> This measure would apply to the direct GHG emissions at major industrial facilities emitting more than 500,000 MT CO₂e per year. The project is a residential land use development project that would generate less than 2,000 MT CO₂e per year (see Table 11).</td>
</tr>
<tr>
<td>12. High Speed Rail. Support implementation of a high-speed rail system.</td>
<td><strong>Not applicable.</strong> This is a Statewide measure that cannot be implemented by a project applicant or lead agency. The proposed project would not preclude the implementation of this strategy.</td>
</tr>
<tr>
<td>Scoping Plan Reduction Measure</td>
<td>Project Consistency</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>13. Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California’s new and existing inventory of buildings.</td>
<td><strong>Consistent.</strong> The project would comply with the California Energy Code and thus incorporate applicable energy efficiency features designed to reduce project energy consumption.</td>
</tr>
<tr>
<td>14. High Global Warming Potential Gases. Adopt measures to reduce high global warming potential gases.</td>
<td><strong>Consistent.</strong> This measure is applicable to the high global warming potential gases that would be used by sources with large equipment (such as in air conditioning and commercial refrigerators). It is not anticipated that a residential development project would include refrigeration subject to refrigerant management regulations adopted by the ARB. If the project were to install large air conditioning equipment subject to the refrigerant management regulations adopted by the ARB, the project would be required to comply with all ARB requirements for the Stationary Equipment Refrigerant Management Program.</td>
</tr>
<tr>
<td>15. Recycling and Waste. Reduce CH₄ emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero waste.</td>
<td><strong>Consistent.</strong> The project would not conflict with implementation of this measure. The project is required to achieve the recycling mandates via compliance with the CALGreen code. The project would utilize City of Orange recycling services.</td>
</tr>
<tr>
<td>16. Sustainable Forests. Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.</td>
<td><strong>Not applicable.</strong> The project site is in a built-up urban area. No forested lands exist on-site, therefore, no on-site preservation is possible.</td>
</tr>
<tr>
<td>17. Water. Continue efficiency programs and use cleaner energy sources to move and treat water.</td>
<td><strong>Consistent.</strong> The project would comply with the California Energy Code and the California Updated Model Landscape Ordinance. With adherence to these regulations, the project will consume energy and water in an efficient manner.</td>
</tr>
<tr>
<td>18. Agriculture. In the near-term, encourage investment in manure digesters and at the 5-year Scoping Plan update determine if the program should be made mandatory by 2020.</td>
<td><strong>Not applicable.</strong> The project site is not designated or in use for agriculture purposes. No grazing, feedlot, or other agricultural activities that generate manure occur on-site or are proposed to be implemented by the project.</td>
</tr>
</tbody>
</table>

Source: FCS 2018, Appendix F of IS/MND.

As shown in Table 11 the project is consistent with the applicable strategies and would not conflict with the recommendations of AB 32 in achieving a Statewide reduction in GHG emissions. Considering this information, the project would not significantly hinder or delay the State’s ability to meet the reduction targets contained in AB 32 or conflict with implementation of the Scoping Plan.
The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017. Table 12 provides an analysis of the project’s consistency with the 2017 Scoping Plan Update measures. As shown in Table 12, many of the measures are not applicable to the project, while the project is consistent with strategies that are applicable.

### Table 12: Consistency with SB 32 2017 Scoping Plan Update

<table>
<thead>
<tr>
<th>2017 Scoping Plan Update Reduction Measure</th>
<th>Project Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SB 350 50 percent Renewable Mandate</strong> Utilities subject to the legislation will be required to increase their renewable energy mix from 33 percent in 2020 to 50 percent in 2030.</td>
<td><strong>Not applicable.</strong> This measure would apply to utilities and not to individual development projects. The project would purchase electricity from a utility subject to the SB 350 Renewable Mandate.</td>
</tr>
<tr>
<td><strong>SB 350 Double Building Energy Efficiency by 2030.</strong> This is equivalent to a 20 percent reduction from 2014 building energy usage compared to current projected 2030 levels.</td>
<td><strong>Not applicable.</strong> This measure applies to existing buildings. New structures are required to comply with Title 24 Energy Efficiency Standards that are expected to increase in stringency over time. The project would comply with the applicable Title 24 Energy Efficiency Standards in effect at the time building permits are received.</td>
</tr>
<tr>
<td><strong>Low Carbon Fuel Standard.</strong> This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.</td>
<td><strong>Not applicable.</strong> This is a Statewide measure that cannot be implemented by a project applicant or lead agency. However, vehicles accessing the proposed residential buildings at the project site would benefit from the standards.</td>
</tr>
<tr>
<td><strong>Mobile Source Strategy (Cleaner Technology and Fuels Scenario).</strong> Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million zero emission vehicles (ZEVs) on the road by 2030 and increasing numbers of ZEV trucks and buses.</td>
<td><strong>Not applicable.</strong> This measure is not applicable to the project; however, vehicles accessing the apartment buildings at the project site would benefit from the increased availability of cleaner technology and fuels. Future residents and visitors can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. Furthermore, delivery trucks and buses that would serve future residents will be made by increasing numbers of ZEV delivery trucks.</td>
</tr>
<tr>
<td><strong>Sustainable Freight Action Plan</strong> The plan’s target is to improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030. This would be achieved by deploying over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.</td>
<td><strong>Not applicable.</strong> This measure applies to owners and operators of trucks and freight operations. The project is residential in nature and would support truck and freight operations. It is expected that deliveries throughout the State would be made with an increasing number of ZEV delivery trucks, including deliveries that would be made to future residents.</td>
</tr>
<tr>
<td><strong>Short-Lived Climate Pollutant (SLCP) Reduction Strategy.</strong> The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030.</td>
<td><strong>Consistent.</strong> As described the Air Quality Analysis prepared for the project (included as Appendix A of this IS/MND), no woodburning devices are proposed as part of the project. Natural gas hearths produce very little black carbon compared to woodburning fireplace; therefore, the project would not include major sources of black carbon.</td>
</tr>
</tbody>
</table>
Table 12 (cont.): Consistency with SB 32 2017 Scoping Plan Update

<table>
<thead>
<tr>
<th>2017 Scoping Plan Update Reduction Measure</th>
<th>Project Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SB 375 Sustainable Communities Strategies.</strong></td>
<td>Not applicable. The project does not include the development of a Regional Transportation Plan. Furthermore, the project is not within an SCS priority area.</td>
</tr>
<tr>
<td>Requires Regional Transportation Plans to include a sustainable communities strategy (SCS) for reduction of per capita vehicle miles traveled.</td>
<td></td>
</tr>
<tr>
<td><strong>Post-2020 Cap-and-Trade Program.</strong></td>
<td>Not applicable. The project is not one targeted by the cap-and-trade system regulations, and, therefore, this measure does not apply to the project. However, the post-2020 Cap-and-Trade Program indirectly affects people and entities who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers.</td>
</tr>
<tr>
<td>The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers.</td>
<td></td>
</tr>
<tr>
<td><strong>Natural and Working Lands Action Plan.</strong></td>
<td>Not applicable. The project is residential development in a built-up urban area and would not be considered natural or working lands.</td>
</tr>
<tr>
<td>The ARB is working in coordination with several other agencies at the federal, State, and local levels, stakeholders, and with the public, to develop measures as outlined in the Scoping Plan Update and the governor’s Executive Order B-30-15 to reduce GHG emissions and to cultivate net carbon sequestration potential for California’s natural and working land.</td>
<td></td>
</tr>
</tbody>
</table>

Source: FCS 2018, Appendix F of IS/MND.

City of Orange General Plan

As described in the Natural Resources Element of City of Orange’s 2010 General Plan, the general plan includes a broad spectrum of policies related to climate change within several General Plan elements. The various policies related to climate change are outlined in Table NR-1 of the Natural Resources Element of City of Orange’s 2010 General Plan. Many of the policies contained in Table NR-1 call for local government coordination and are not applicable to individual development projects. The applicable climate change related policies and the project’s consistency with those policies are assessed below in Table 13.

Table 13: Consistency with City of Orange General Plan Climate Change Related Policies

<table>
<thead>
<tr>
<th>Topic</th>
<th>General Plan Policy</th>
<th>Project Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compact development</td>
<td>Urban Design Element 1.4: Pedestrian-oriented places and connections.</td>
<td>Consistent. As described in Section 10, the overall project has a pedestrian-oriented design and would improve the pedestrian circulation system relative to existing conditions.</td>
</tr>
<tr>
<td>Access to employment centers</td>
<td>Circulation and Mobility Element 3.3: Transit-oriented design within commercial, employment, medium density residential, and mixed-use areas.</td>
<td>Consistent. As described in Section 10, future project residents would be within walking distance to public transit offered by the Orange County Transportation Authority (OCTA). The OCTA currently offers bus services and stops along South Lewis Street, Chapman Avenue, and The City Drive.</td>
</tr>
</tbody>
</table>
### Table 13 (cont.): Consistency with City of Orange General Plan Climate Change Related Policies

<table>
<thead>
<tr>
<th>Topic</th>
<th>General Plan Policy</th>
<th>Project Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth Management Element 1.8: Housing within close proximity to jobs and services.</td>
<td><strong>Consistent.</strong> The project proposes to construct an additional three multi-family apartment buildings as part of the existing Terrace Apartments, which would add a total of 167 apartments units on-site. The project site is within ½-mile of a multiple commercial and offices uses.</td>
<td></td>
</tr>
<tr>
<td>Economic Development Element 3.4: Higher density residential and mixed-use projects to provide community-based workforce and market.</td>
<td><strong>Consistent.</strong> As described in Section 10, the residential density contemplated by the project would be consistent with that outlined in Table LU-1 (Land Use Designations) of the General Plan Land Use Element (City of Orange 2010).</td>
<td></td>
</tr>
<tr>
<td>Open space management</td>
<td>Public Safety Element 2.4: Reduce impervious surface area within new development.</td>
<td><strong>Consistent.</strong> As described in Section 9, the project would increase the net impervious surface area on the site by an unsubstantial amount (8 percent).</td>
</tr>
<tr>
<td>Tree protection and planting</td>
<td>Land Use Element 6.9: Maximize landscaping along streetscapes and within development projects.</td>
<td><strong>Consistent.</strong> The project would incorporate landscaping throughout the project site. The existing landscaping on the site will remain in place, with the addition of enhanced landscaping along South Lewis Street.</td>
</tr>
<tr>
<td>Energy efficient technology and efficient infrastructure systems</td>
<td>Infrastructure Element 4.4: Integrated and cost-effective design and technology features within new development.</td>
<td><strong>Consistent.</strong> The project would comply with the California Energy Code, and thus incorporate applicable energy efficiency features designed to reduce project energy consumption.</td>
</tr>
<tr>
<td>Reduced fossil fuel reliance</td>
<td>Natural Resources Element 2.6: Sustainable building and site designs for new construction and renovation projects.</td>
<td><strong>Consistent.</strong> As described in Section 10, the overall project has a pedestrian-oriented design and would improve the pedestrian circulation system relative to existing conditions.</td>
</tr>
<tr>
<td>Non-motorized transportation</td>
<td>Circulation and Mobility Element 4.7: Accessible sidewalks and pedestrian amenities.</td>
<td><strong>Consistent.</strong> As described in Section 1, pedestrian access would be provided via sidewalks to South Lewis Street and City Boulevard West. Walkways would provide internal connections to parking and recreation/amenities.</td>
</tr>
<tr>
<td>Transit-supporting facilities</td>
<td>Growth Management Element 1.9: New development incorporates non-motorized and alternative transit amenities.</td>
<td><strong>Consistent.</strong> As described in Section 16, there are two Class II bike lanes along Chapman Avenue and Lampson Avenue, and a Class I bike path along the Santa Ana River Trail within a 0.5-mile radius of the project site. The overall project has a pedestrian-oriented design and would improve the pedestrian circulation system and experience over existing conditions. The proposed project would not</td>
</tr>
<tr>
<td>Reduce vehicle emissions</td>
<td>Natural Resources Element 2.2: Support alternative transportation modes, alternative technologies, and bicycle- and pedestrian-friendly neighborhoods.</td>
<td><strong>Consistent.</strong> As described in Section 16, there are two Class II bike lanes along Chapman Avenue and Lampson Avenue, and a Class I bike path along the Santa Ana River Trail within a 0.5-mile radius of the project site. The overall project has a pedestrian-oriented design and would improve the pedestrian circulation system and experience over existing conditions. The proposed project would not</td>
</tr>
</tbody>
</table>
Table 13 (cont.): Consistency with City of Orange General Plan Climate Change Related Policies

<table>
<thead>
<tr>
<th>Topic</th>
<th>General Plan Policy</th>
<th>Project Consistency</th>
</tr>
</thead>
</table>
| GHG emission reduction strategies | Natural Resources Element  
3.1: Evaluate the potential effects of climate change on the City’s human and natural systems and prepare strategies that allow the City to appropriately respond and adapt  
3.2: Develop and adopt a comprehensive strategy to reduce greenhouse gasses within Orange to at least 1990 levels by 2020. | Consistent. The project would be consistent with the General Plan designation for the project site for Urban Mixed-Use and would not require a general plan amendment. As described in Section 10, the proposed project would also help implement and further a number of goals and policies of the City’s General Plan. Given that the project would comply with the land use designations of the project site and would increase residential density in a developed area, the project would be consistent with the goals and policies adopted for the purpose of reducing the emissions of GHGs contained within the City’s General Plan. |
| Water use efficiency and reduced consumption | Natural Resources Element  
2.14: Reduce pollutant runoff from new development through use of BMPs. | Consistent. As described in Section 9, the project would reduce pollutant runoff through the use of BMPs. |

Source of policies: City of Orange General Plan

As demonstrated in Table 13 above, the project is consistent with the applicable climate change related policies contained within the City’s General Plan.

Summary

As presented in Table 11, the project is consistent with the applicable strategies and would not conflict with the recommendations of AB 32 in achieving a Statewide reduction in GHG emissions. Considering this information, the proposed plan would not significantly hinder or delay the State’s ability to meet the reduction targets contained in AB 32 or conflict with implementation of the Scoping Plan. Furthermore, as shown in Table 12, implementation of the project would not conflict with the reduction measures proposed in SB 32. In addition, the project would not conflict with the City of Orange General Plan. In summary, the proposed plan would not conflict with any applicable plan, policy, or regulation adopted to reduce the emissions of GHGs. As shown in Impact 7(b), the project’s combined amortized construction and annual operational GHG emissions would not exceed the applicable threshold of 3,000 MT CO2e per year. Considering this information, the proposed plan would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of GHGs. The impact would be less than significant.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant.
8. HAZARDS AND HAZARDOUS MATERIALS.

Would the project:

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Less than Significant Impact</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?</td>
<td>☑️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</td>
<td></td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>(c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</td>
<td></td>
<td></td>
<td>☑️</td>
</tr>
<tr>
<td>(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?</td>
<td></td>
<td></td>
<td>☑️</td>
</tr>
<tr>
<td>(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 for people residing or working in the project area?</td>
<td></td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>(f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?</td>
<td></td>
<td></td>
<td>☑️</td>
</tr>
<tr>
<td>(g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</td>
<td></td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>(h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?</td>
<td></td>
<td></td>
<td>☑️</td>
</tr>
</tbody>
</table>

**Environmental Setting**

The information in this section is based on the Phase I Environmental Site Assessment (ESA) prepared for the project by AES Due Diligence, Inc. (AES) on October 5, 2016. The Phase I ESA is available as Appendix G to this report and was based, in part, on site visits and observations, interviews and review of available documents and a database records search. The purpose of the Phase I ESA of the site is to address the range of contaminants within the scope of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and petroleum products.

**Environmental Evaluation**

**Impact Analysis**

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

A significant impact may occur if a project would involve the use or disposal of hazardous materials as part of its routine operations, or would have the potential to generate toxic or
otherwise hazardous emissions that could adversely affect sensitive receptors. The City follows the County’s Hazardous Materials Inspection and Enforcement Plan. To prevent accidents, and ensure proper handling, routine inspections are conducted at businesses within the City that store, use, or handle hazardous materials. The City concentrates production of hazardous materials within its industrial area, separated from residential areas, educational uses, and institutional facilities (Orange General Plan 2010). The City also identifies businesses transporting, manufacturing, using, and storing hazardous chemicals, and requires such businesses to exercise caution and to mitigate potential negative effects on surrounding land uses prior to obtaining businesses licenses. The project proposes residential uses and does not include commercial activity or industrial uses that would utilize, store, or transport hazardous materials as part of daily operations.

**Project Construction**

Project-related construction activities would involve the use of larger amounts of hazardous materials than would be used during project operation. Construction activities would use a limited amount of hazardous and flammable substances such as fuels, lubricants, and greases in construction equipment and coatings used in construction. During construction, this equipment may require maintenance that could result in releases of oil, diesel fuel, transmission fluid, or other materials. However, the materials used would not be in such quantities or stored in such a manner as would present a significant safety hazard. The project would implement MM GEO-1, which requires that the proposed project prepare and implement a SWPPP during construction in accordance with federal, State, and local requirements would ensure that the proposed project would not violate any water quality standards in its construction phase. The BMPs contained in the required project SWPPP would be implemented to address handling and containment of any hazardous substances during the construction phase of the project. Compliance with these requirements would avoid significant hazards to the public or environment through release of hazardous materials during project construction. These activities would also be short-term or one time in nature, and would cease upon completion of the specific work activities being performed during each phase of construction.

As discussed above, a Phase I ESA was prepared for the project by AES, (Appendix G), and an environmental records database search report was provided by Environmental Data Resources, Inc. (EDR). The Phase I ESA reviewed regulatory information within the EDR report, which did not identify the project on any regulatory databases. Furthermore, review of off-site property listings did not pose an environmental concern. The activities of the proposed project do not involve any demolition or renovation activities associated with the existing buildings on the site; asbestos and lead based paint (LBP) are not a concern the Phase I ESA recommends no additional investigation at this time. Additionally, as with project operation, the use, storage, transport, and disposal of construction-related hazardous materials would be required to conform to existing laws and regulations. Compliance with applicable laws and regulations governing the use, storage, transportation, and disposal of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the
potential for safety impacts. All spills or leakage of petroleum products during construction activities would be required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable State and local regulations for the cleanup and disposal of that contaminant. All contaminated waste would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility. Construction activities for the proposed project would have less than significant impact with mitigation incorporated with regard to the use or disposal of hazardous materials as part of its routine operations, and the potential to generate toxic or otherwise hazardous emissions that could adversely affect sensitive receptors.

**Project Operation**

The long-term operation of the additional proposed dwelling units, and to a lesser extent garages, would involve the use of small amounts of hazardous materials, such as cleansers, paints, fertilizers, and pesticides for household cleaning and maintenance purposes, as well as mechanical equipment. Herbicides would be regulated by the California Department of Food and Agriculture, which registers and classifies pesticides used in the State. Weed abatement involves application of commercial herbicides, which are readily available at garden centers. The residential uses also involve typical cleaning supplies. However, when such materials are stored and used in accordance with manufacturers’ instructions, no health hazard exists. Residents can dispose of hazardous materials at the Household Hazardous Waste Collection Center at 1071 North Blue Gum Street, in the City of Anaheim, approximately 5 miles north of the project site (City of Orange 2019). Apartment complexes and parking garages are also not associated with uses that use, generate, store, or transport large quantities of hazardous materials; such uses generally include manufacturing, industrial, medical (e.g., hospital), and other similar uses.

Additionally, the use, storage, transport, and disposal of hazardous materials would be governed by existing regulations of several agencies, including the EPA, United States Department of Transportation, California Division of Occupational Safety and Health (Cal/OSHA), Orange County Environmental Health, and Orange City Fire Department. Compliance with applicable laws and regulations governing the use, storage, transportation, and disposal of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts. The proposed project would also be constructed and operated with strict adherence to all emergency response plan requirements set forth by the City of Orange and the Orange City Fire Department.

Therefore, hazards to the public or the environment arising from the routine use, storage, transport, and disposal of hazardous materials during long-term operation of the proposed project would not occur. Long-term operational impacts would be less than significant.

Therefore, hazards to the public or the environment arising from the routine use of hazardous materials during project construction or long-term operation would be less than significant with mitigation incorporated.
Significance Determination: Potentially significant impact.
Mitigation Measures: MM GEO-1
Significance Determination After Mitigation: Less than significant.

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?

A significant impact may occur if a project utilizes hazardous materials as part of its routine operations and could potentially pose a hazard to nearby sensitive receptors under accident or upset conditions.

The project site is currently developed with eight, 3-story apartment buildings with a total of 441 multi-family dwelling units, as well as a club house, underground and surface parking lots, and landscaping. The proposed project consists of the development of multi-family residential uses, subterranean parking structures and a surface parking lot, none of which would result in the generation of air toxics that would require a permit by the SCAQMD. The following is a summary of the Phase I ESA (Appendix G):

Hazardous Materials On-site
The records search for the Phase I ESA for the proposed project indicate that the project site was primarily undeveloped land from 1896-1902; beginning in 1938 and ending in 1964, the land was used for agricultural purposes with a brief period in 1935 where there were residential developments. From 1972 to present, the current structures on-site (The Terrace Apartments) were the primary use of the land. Since 1972, the site has been as it is currently developed (The Terrace Apartments).

As discussed above, the Phase I ESA reviewed regulatory information within the environmental records database search did not identify the project site on any regulatory databases. According to the report, the off-site property listings also did not pose an environmental concern. Because the proposed activities for the site do not involve the demolition or renovation of the existing buildings on the site, asbestos and LBP are not a concern. The Phase I ESA found that no additional hazards investigations were necessary for the project site. The Phase I ESA concluded that there were no recognized environmental conditions associated with the proposed project, that the residential project would not utilize hazardous materials as part of its routine operations without proper oversight, and that the project would have less significant impacts with regard to the potential to pose a hazard to nearby sensitive receptors under accident or upset conditions. Impacts would be less than significant.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant.
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

A project-related significant adverse effect may occur if the project site is located within 0.25-mile of an existing or proposed school site, and would potentially release toxic emissions, which would pose a health hazard beyond regulatory thresholds. The nearest public school to the project site is Lampson Elementary School, approximately 0.20-mile to the southwest, at 13321 Lampson Avenue in the City of Garden Grove. While the project does not represent an industrial or manufacturing use that would utilize, store, or transport large quantities of hazardous materials, the project’s construction phase could include the transport of hazardous materials to the site. The transport of any hazardous materials during the proposed project’s construction phase would generally occur along the roadways surrounding the project site including Chapman Avenue, South Lewis Street, and The City Drive. The project would follow all applicable regulations for the transport of hazardous materials during the construction phase. The project’s operation phase would be consistent with the use of hazardous materials use of other residential uses in the City, and would not pose a risk to the nearby school.

Impacts would be less than significant.

**Significance Determination:** Less than significant impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** Less than significant.

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?

California Government Code Section 65962.5 requires various State agencies to compile lists of hazardous waste disposal facilities, unauthorized release from underground storage tanks, contaminated drinking water wells, and solid waste facilities from which there is known migration of hazardous waste. In meeting the provisions in Government Code Section 65962.5, commonly referred to as the “Cortese List,” database resources that provide information regarding identified facilities or sites include EnviroMapper (EPA 2018), EnviroStor (Department of Toxic Substances Control [DTSC] 2018), and GeoTracker (State Water Board 2018), and other lists compiled by the California Environmental Protection Agency (Cal/EPA). These databases monitor the following: leaking underground storage tank (LUST) cleanup sites, cleanup program sites, land disposal sites, military sites, waste discharge requirement sites, irrigated lands regulatory program, permitted underground storage tank (UST) facilities, oil and gas monitoring, non-case information/project sites, sampling points-public, field points, DTSC cleanup sites, DTSC hazardous waste permit, Department of Water Resources groundwater basins, and public water systems.

EnviroMapper, EnviroStor, and GeoTracker were queried for the project site and surrounding area and the results found that the project site is not listed on any regulatory database. Adjoining
the project site to the west is Christ Cathedral Church, located at 12141 South Lewis Street in Garden Grove. This listing is reported to have had a LUST containing diesel that affected the groundwater; however, regulatory case closure was granted on April 23, 1992. Therefore, this off-site property is not considered an environmental concern to the property. No additional off-site property listings were identified in proximity of the project as having any active open cases involving hazardous materials spills or contamination. Therefore, impacts would be less than significant to the public or to the environment would occur as a result of the proposed project and no mitigation measures are necessary.

**Significance Determination:** Less than significant impact.  
**Mitigation Measures:** No mitigation measures are required.  
**Significance Determination After Mitigation:** Less than significant.

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

A significant project-related impact may occur if a project were placed within a public airport land use plan area or within two miles of a public airport, and subject to a safety hazard. The project site is not within an airport land use plan, nor is it within 2 miles of a public airport or public use airport. The nearest public use airports to the project site are John Wayne Airport and Fullerton Municipal Airport, approximately 7.01 miles south and 7.47 miles northwest of the project site, respectively. According to the John Wayne Airport Land Use Plan (2008) and Fullerton Municipal Airport Land Use Plan (2004), the project site is outside of areas where land uses are regulated to prevent air crash hazards and areas where structure heights are limited to prevent airspace obstructions for aircraft approaching or departing both of these airports. Therefore, development of the proposed project would not result in an airport related hazard for residents or workers on or near the project site. Less than significant impacts would occur and no mitigation measures are necessary.

**Significance Determination:** Less than significant impact.  
**Mitigation Measures:** No mitigation measures are required.  
**Significance Determination After Mitigation:** Less than significant.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

This question would apply to a project only if it were in the vicinity of a private airstrip and would subject area residents and workers to a safety hazard.

While there are no private airstrips in proximity of the project site, the University of California, Irvine (UCI) Medical Center has an at-grade helipad at the southeast corner of Chapman Avenue and The City Drive, approximately 0.30-mile northeast of the project site. Additionally, the
Orange County Fire Training Facility has an at-grade helipad, and is located approximately 0.90 mile to the northeast, at the Orangewood Avenue and Rampart Street intersection.

Due to the relatively low building height of the proposed dwelling units (45 feet/4 stories) in relation to the existing high-rise buildings in the vicinity (i.e. approximately 1,000 feet east of project site is the 20-story City Tower) the proposed project is not anticipated to result in a change in air traffic patterns due to its distance from these helipads. Furthermore, this would not result in a safety hazard for people residing or working on-site or in the surrounding area. There are also buildings of similar height adjacent to and in the proximity of the helipads, as well as around the project site. Therefore, the size and siting of the proposed building and structure would not interfere with helicopter operations at these helipads.

Additionally, while over congested areas, helicopters are required to maintain an altitude of at least 1,000 feet above the highest obstacle within 2,000 feet of the aircraft, except as needed for takeoff and landing (Code of Federal Regulations [CFR], Title 14, § 91.119). Takeoffs and landings at these helipads are also infrequent. Furthermore, helicopter takeoffs and landings are at a sufficient enough distance from the project site so as to not pose a safety hazard to residents, workers, or guests within the project site or its surroundings.

Therefore, impacts associated with helipads would be less than significant and no mitigation measures are necessary.

**Significance Determination:** Less than significant impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** Less than significant.

**g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

A significant impact may occur if a project were to interfere with roadway operations used in conjunction with an emergency response plan or emergency evacuation plan, or would generate sufficient traffic to create traffic congestion that would interfere with the execution of such a plan.

**Emergency Operations Plan**

The City has an emergency plan that establishes emergency preparedness and emergency response procedures for both peacetime and wartime disasters. The plan is termed an “Emergency Operations Plan,” prepared in accordance with the State Office of Emergency Services guidelines for multi-hazard functional planning. The plan consists of three parts: (1) a basic plan; (2) annexes the address specific functions and duties of response agencies; and (3) a directory of emergency response resources. Rather than focusing on specific responses for specific hazards, the City’s plan concentrates on specific agency response for any type of disaster. For example, in the event of an earthquake, flood, or industrial accident, the Orange City Fire Department (OCFD) is responsible for fire suppression, emergency medical care, and rescue operations (City of Orange 2010).
Emergency Shelters

In the event of either a natural or human-caused disaster, homes may be destroyed or be inaccessible for extended periods of time. City of Orange residents will require some form of temporary shelter. As Table PS-2 indicates, the Red Cross bears primary responsibility for providing emergency shelter to displaced residents. The Red Cross maintains a list of emergency shelters within and immediately adjacent to the planning area. Most of these emergency shelters, listed in Table PS-3 of the City of Orange Public Safety Element, are public or private schools.

The nearest “Primary Site” for Emergency Shelters/Assembly Points is Orange High School located at 525 North Shaffer Street, approximately 3.6 miles east of the project site (City of Orange 2010). All elementary schools Citywide are considered Secondary Sites (City of Orange 2010). The nearest elementary school to the site is Lampson Elementary School in the City of Garden Grove is approximately 0.20-mile to the southwest, on Lampson Avenue.

Emergency Access and Evacuation

All City arterials are recognized as primary emergency response routes. In addition, non-arterials can be secondary emergency response routes. The City’s Residential Neighborhood Traffic Management Program, which identifies traffic management and traffic calming tools, specifies that emergency vehicle access should be accommodated consistent with response standards with implementation of appropriate traffic management measures. Additionally, if current emergency vehicle access does not meet existing response standards, traffic calming efforts should not further degrade response times. The City’s Emergency Operations Plan does not indicate evacuation routes for emergency situations. The routes of escape from disaster-stricken areas would depend on the scale and scope of the disaster.

The City Drive is the nearest designated evacuation corridor in the City of Orange from Orangewood Avenue to Garden Grove Boulevard, as shown in Figure PS-4 (Generalized Evacuation Corridors) of the City’s General Plan Safety Element (City of Orange 2010). The project is not anticipated to affect access to The City Drive during construction, and would not require road closures or otherwise impact the functionality of this, or other designated evacuation corridors. The project would not affect emergency access. Construction and internal circulation would comply with the applicable fire codes, as required by the OCFD. Access and internal circulation are considered adequate from a traffic perspective (Appendix J). Therefore, the proposed project would result in a less than significant impact with respect to emergency access.

Additionally, during the construction and operation phases, the proposed project would not interfere with any of the daily operations of the City’s emergency operations center, or OCFD. All construction activities would be required to be performed per the City’s and OCFD’s standards and regulations. The proposed project would be required to provide the necessary on- and off-site access and circulation for emergency vehicles and services during the construction and operation phases. The proposed project would also be required to go through the City’s development review and permitting process and would be required to incorporate all applicable design and safety standards and regulations in the California Building Code and Orange
Municipal Code (including those of Chapter 15.32 [City of Orange Fire Code]) to ensure that project development does not interfere with the provision of local emergency services (provision of adequate access roads to accommodate emergency response vehicles, adequate numbers/locations of fire hydrants, etc.).

Installation of an emergency responder radio system would also be required per Section 15.32.340 (Emergency Responder Radio Coverage) of the Orange Municipal Code and Section 510 of the California Fire Code. The emergency responder radio system is required to be installed in accordance with the City of Orange Emergency Responder Digital Radio Guideline. Knox boxes would also be required where necessary (i.e., stairwells where the doors are locked for entry, parking structure gated entries) to provide access for OCFD personnel.

Furthermore, the proposed project would not require road closures or otherwise impact the functionality of Chapman Avenue, South Lewis Street, or The City Drive as public safety access routes.

Project development would include construction of internal roadways, which would serve for pedestrian and emergency vehicle access. During project construction, emergency-vehicle access would not be restricted to the site or surrounding areas. Roads surrounding the project site would remain open for regular traffic as well as emergency vehicles. Additionally, in the event of an emergency (e.g., structural fire), emergency services’ access to the surrounding buildings and uses would not be impacted by the proposed project’s construction phase, since adequate access for emergency vehicles and personnel exists for the surrounding buildings and uses.

Based on the preceding, implementation of the proposed project (both the construction and operational phases) would not impair implementation of or physically interfere with the City’s Emergency Operation Plan, the General Plan Safety Element, or any other emergency response plan. Therefore, impacts would be less than significant and no mitigation measures are necessary.

**Significance Determination:** Less than significant impact.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination After Mitigation:** Less than significant.

**h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

A significant impact may occur if a project is located in proximity to wildland areas and would pose a potential fire hazard, which could affect persons or structures in the area in the event of a fire. Fire and its destructive potential are safety concerns within both the urban areas of the City and the undeveloped hillsides. Wildland fires are most problematic along the developed residential fringes of the hillsides, known as the wildland-urban interface. A high fire hazard
area is typically characterized by areas with limited access, rugged terrain, limited water supply, and combustible vegetation.

The project site is in an urbanized area of the City and is surrounded by a mix of residential, commercial/retail, religious, office, and medical uses. The project site is currently developed with eight, 3-story apartment buildings with a total of 441 multi-family dwelling units, as well as a club house, underground and surface parking lots, and landscaping. The project site has several points of access, and is served by adequate water infrastructure. There is no combustible wildland vegetation on or near the site. The project site is not in, nor is it next to a Fire Hazard Severity Zone mapped by the California Department of Forestry and Fire Prevention (CAL FIRE); the nearest Very High Fire Hazard Severity Zone to the project site is over 8 miles to the east (CAL FIRE 2011). Additionally, as shown in Figure PS-1 (Environmental and Natural Hazard Policy Map) of the City’s General Plan Public Safety Element (City of Orange 2010), the project site is not within a designated wildland fire hazard area. Therefore, project development would not introduce people or structures to substantial hazards from wildland fires. No impact would occur and no mitigation measures are necessary.

**Significance Determination:** No impact.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination After Mitigation:** No impact.
9. HYDROLOGY AND WATER QUALITY. Would the project:

<table>
<thead>
<tr>
<th></th>
<th>Potentially Significant Impact</th>
<th>Less than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Violate any water quality standards or waste discharge requirements?</td>
<td>☐ ☒ ☒ ☒</td>
<td>☒ ☒ ☒ ☒</td>
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<tr>
<td>(b)</td>
<td>Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?)</td>
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<td>(c)</td>
<td>Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?</td>
<td>☐ ☒ ☒ ☒</td>
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<td>(d)</td>
<td>Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?</td>
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<td>(e)</td>
<td>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?</td>
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<td>(f)</td>
<td>Otherwise substantially degrade water quality?</td>
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<td>☒ ☒ ☒ ☒</td>
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<td>(g)</td>
<td>Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?</td>
<td>☐ ☒ ☒ ☒</td>
<td>☒ ☒ ☒ ☒</td>
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<tr>
<td>(h)</td>
<td>Place within a 100-year flood hazard area structures which would impede or redirect flood flows?</td>
<td>☐ ☒ ☒ ☒</td>
<td>☒ ☒ ☒ ☒</td>
<td>☒ ☒ ☒ ☒</td>
</tr>
<tr>
<td>(i)</td>
<td>Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?</td>
<td>☐ ☒ ☒ ☒</td>
<td>☒ ☒ ☒ ☒</td>
<td>☒ ☒ ☒ ☒</td>
</tr>
<tr>
<td>(j)</td>
<td>Inundation by seiche, tsunami, or mudflow?</td>
<td>☐ ☒ ☒ ☒</td>
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</tbody>
</table>

Environmental setting

This section is based on a Preliminary Priority WQMP prepared by KPFF Consulting Engineers. The full report is available as Appendix H.

Impact Analysis

a) Violate any water quality standards or waste discharge requirements?

A significant impact may occur if a project discharges water which does not meet the quality standards of agencies that regulate surface water quality and water discharges into stormwater drainage systems. Water quality within the City of Orange is regulated by the Santa Ana RWQCB. Water quality impacts are often separated into two primary categories: construction-related impacts and post-construction impacts. The proposed project has the potential to release water pollutants during both construction and post-construction operations that may violate water quality standards. Both of these categories will be evaluated separately.
**Construction**

The proposed project would involve ground-disturbing activities such as grading that have the potential to cause erosion. Grading activities, in particular, lead to temporarily exposed areas of loose soil, as well as sediment stockpiles, that are susceptible to uncontrolled sheet flow. Although erosion occurs naturally in the environment, primarily from weathering by water and wind action, improperly managed construction activities can lead to substantially accelerated rates of erosion that are considered detrimental to the environment.

The State Water Resources Control Board (State Water Board) adopted a National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). To obtain coverage under the Construction General Permit, a project applicant must submit various documents, including a Notice of Intent and a Storm Water Pollution Prevention Plan (SWPPP). Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation. The purpose of the SWPPP is to identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges and to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity.

To avoid erosion impacts potentially caused by grading, prior to issuance of building permits for the proposed project, the project would implement MM GEO-1, which requires that the proposed project prepare and implement a SWPPP during construction in accordance with federal, State, and local requirements would ensure that the proposed project would not violate any water quality standards in its construction phase.

Additionally, to reduce potential impacts due to grading for the project, the recommendations in the Preliminary Geotechnical Investigation Report have been incorporated into the project as project design features and BMPs. The recommendations pertaining to stormwater runoff and soil erosion in the Preliminary Geotechnical Investigation Report include:

1) The clearing and grubbing of all significant organic material such as weeds, brush, tree branches, construction debris including old irrigation lines, asphalt concrete, and other decomposable material prior to grading.

2) If the temporary construction slopes are to be maintained during the rainy season, berms are recommended to be graded along the tops of the slopes in order to prevent runoff water from entering the excavation and eroding the slope faces.

3) Surface drainage should be carefully controlled during and after grading to prevent ponding and uncontrolled runoff adjacent to the structures. Particular care will be required during grading to maintain slopes, swales, and other erosion control measures needed to direct runoff toward permanent surface drainage facilities.
These recommendations will serve to reduce soil erosion during construction by reducing the debris on site that could be washed into the municipal stormwater system in a storm event, to contain slopes in order to prevent runoff water from eroding newly constructed slope faces, and to direct surface water to drainage facilities instead of allowing it to sheet flow or otherwise enter the stormwater system.

The project would comply with the City of Orange Stormwater Local Implementation Plan (LIP) (City of Orange, 2011). The LIP requires all private and public works construction projects to implement and be protected by an effective combination of erosion and sediment controls and waste and materials management BMPs to prevent discharges into the storm drain system or watercourses. The minimum requirements for all construction sites includes erosion and sediment control and waste and materials management control (Table A-8.2 of the LIP) would be implemented during the project’s construction phase, as well as the City’s designated construction-specific BMPs as set forth in DAMP Section 8.2.4.3. (City of Orange, 2011).

Collectively, project design features aimed at reducing impacts to water quality, along with the implementation of MM GEO-1 and the project-specific construction BMPs shown in the SWPPP erosion and sediment control plans and grading plans would reduce construction impacts to less than significant with the incorporation of mitigation.

Post-Construction
The project site is relatively flat and allows stormwater runoff to sheet flow away from the existing, three-story, above grade apartments over landscape and hardscape. The single-level subterranean parking lots under each apartment building incorporate a trench drain at the bottom of the driveway to drain any runoff that sheet flows over driveways. Generally, the northerly portion of the project is at a slightly higher elevation, and the southerly portion of the project is at a slightly lower elevation, creating overland flow in a north to south direction (Appendix H). This existing condition allows runoff to occur over asphalt pavement, concrete walks, landscape areas, and other common areas such as tennis court areas towards on-site area drains that discharge to an on-site storm drain facility owned by the City of Orange (illustrated in Appendix C, Basemap of Drainage Facilities in Orange County, Map 21). The City-owned, on-site storm drain facility begins as a 24-inch diameter pipe at the northernmost portion and leaves the site as a 33-inch diameter pipe along an 8-foot easement due west towards South Lewis Street. The off-site receiving waters include the City-owned 45-inch diameter pipe along South Lewis Street, which conveys stormwater due south towards the Lewis Storm Channel, or Channel 5 (C05SII), and the downstream East Garden Grove Wintersburg Channel, both owned and maintained by the Orange County Flood Control District. The on-site, north-south drive aisle currently allows runoff to discharge off-site at the southerly face of the drive aisle via an existing curb and gutter. The runoff continues south towards a curb inlet adjacent to City Parkway West and discharges into the Lewis Storm Channel at an upstream location further east.

The project would comply with the requirements of the current Municipal Regional Permit. Responsibilities include but are not limited to designing BMPs into project features and
operations to reduce potential impacts to surface water quality and to manage changes in the
timing and quantity of runoff (i.e., hydromodification) associated with operation of the project.
These features shall be included in the design-level drainage plan and final development
drawings. Specifically, the final design shall include measures designed to mitigate potential
water quality degradation and hydromodification of runoff from all portions of completed
developments. The proposed project features the following site design BMPs (Appendix H):

- Proposed buildings will utilize maximum space possible due to site area constraints.
  Proposed impervious areas will be similar to existing impervious areas.

- All areas will discharge to one or combination of existing area drains, existing site gutters,
  and existing storm drains.

- Minimize impervious area/maximize permeability

- Conserve natural areas. With the proposed land use changes, development of the project
  may result in long-term impacts to the quality of stormwater and urban runoff,
  subsequently impacting downstream water quality. The project may have the potential to
  increase the post-construction pollutant loadings of certain constituent pollutants
  associated with the proposed land uses and their associated features, such as landscaping
  and parking areas. Based on the proposed residential land use for the project, the
  following pollutants could be expected: suspended solids/sediment, nutrients, pathogens
  (bacteria/virus), pesticides, oil and grease, and trash and debris (Appendix H).

In compliance with NPDES, the County of Orange Drainage Area Management Plan (DAMP),
and the City’s Local Implementation Procedures, a project-specific Water Quality Management
Plan (WQMP) must be prepared prior to commencement of construction. The project’s WQMP
outlines project-specific site design BMPs, source control BMPs, and low impact development
(LID) BMPs, these are included in Appendix H of this report. The project’s WQMP did not
anticipate heavy metals and toxic organic compounds to be of concern for the site. Additionally,
the project site is not in an area potentially susceptible to hydromodification impacts.

Post-development drainage conditions at the surface would mostly mimic those of the existing
conditions. Development of the project would result in an 8 percent increase in impervious
surfaces due to the removal of pervious landscaping to provide for impervious building
structures. At the surface level, the site would drain away from existing and proposed buildings
towards site gutters and catch basins.

The project would incorporate infiltration BMPs as the primary method of water quality via
perforated pipes with upstream hydrodynamic separator units. Two DMAs would be created for
the proposed improvements (Figure 9). The two DMAs are identified in Figure 9 as DMA-1 and
DMA-2.

Post-development drainage conditions at the surface would mostly mimic those from the pre-
development. At the surface level, the site would drain away from existing and proposed
buildings toward site gutters and catch basins. Below grade, storm water runoff from the project DMAs will be conveyed into a hydrodynamic separation device as pretreatment and a Contech StormFilter (for DMA-1) as treatment measures and then to shallow, perforated corrugated metal pipes for full volume detention and treatment via below-grade infiltration.

Within both DMAs, all runoff that enters the corrugated metal pipes would be treated via their upstream using StormFilter units. The StormFilter units on site separate and trap debris, sediment, and oil and grease from stormwater runoff. When the corrugated metal pipe in DMA-1 reaches capacity, untreated runoff would be diverted via the upstream diversion structure and overflow pipe into the existing, on-site storm drain system.

When the corrugated metal pipe in DMA-2 reaches capacity, runoff will build up within the StormFilter unit and upstream catch basins. The catch basins would act as bubblers for untreated storm water runoff to mimic existing conditions by draining off-site at the southerly face of the north-south driveway via a concrete curb and gutter.

A detailed description of the proposed drainage system for the project site is provided in the project’s Preliminary Priority WQMP and Drainage Study (Appendix H).

Collectively, these features would ensure that the proposed project would not violate any water quality standards. Impacts would be less than significant with mitigation incorporated.

Significance Determination: Less than significant impact with mitigation incorporated.
Mitigation Measures: MM GEO-1
Significance Determination After Mitigation: Less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?)

The Orange County Water District (OCWD) manages the Orange County Groundwater Basin (Basin), which covers approximately 350 square miles beneath the Tustin and Downey Plains. It is bounded by consolidated rocks exposed on the north in the Puente and Chino Hills, on the east in the Santa Ana Mountains, and on the south in the San Joaquin Hills. The City obtains approximately 55 percent of its water from City-owned groundwater wells. The OCWD completed a Groundwater Replenishment System, which injects purified sewer water into the Basin. This is designed to meet the drinking water needs of the existing population of north and central Orange County and projected additional residents by 2020.

As shown in Figure NR-2 (Drainage Areas and Water Recharge Facilities) of the City’s General Plan Natural Resources Element, groundwater recharge facilities within or adjacent to the City include the Santa Ana River and Santiago Creek. The project site is not located in or near either
of these groundwater recharge facilities. The project site is 8.3 miles from the Santa Ana River (via Harbor Boulevard), and 3.1 miles from Santiago Creek (via N Bristol St).

The geotechnical investigations conducted as a part of the Preliminary Geotechnical Investigation Report, provided as Appendix E, determined that groundwater has historically been found beneath the project site at a depth greater than 50 feet, but was not found during the investigation, which explored a maximum depth of 71.5 feet. The report determined that groundwater conditions may vary across the site due to hydrologic conditions, and any change over time in groundwater depth under the site could be the consequence of seasonal and meteorological fluctuations, as well as human activities on and near the site. The report also investigated soil percolation and calculated infiltration rates. It found that the upper 5 to 10 feet of soils on-site are feasible for infiltration of water, but that depths greater than this the infiltration of water is less feasible. For these reasons, the Preliminary Geotechnical Investigation Report determined that groundwater is not expected to be encountered as a result of the proposed development, and that hydrologic activity on the surface level is highly unlikely to reach groundwater. Therefore, the proposed project would not substantially interfere with groundwater supplies or recharge and impacts would be less than significant.

**Significance Determination:** Less than significant impact.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination After Mitigation:** Less than significant.

c) **Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

A significant impact may occur if a project results in a substantial alteration of drainage patterns that would result in a substantial increase in erosion or siltation during construction or operation of the project. The project site is currently developed as zoned (Urban Mixed-Use, or UMU) with eight apartment buildings, and the entire site and surrounding area is built out. There are no streams or rivers on or immediately adjacent to the site. All project runoff would drain into existing storm drain infrastructure, and that constructed as part of the project. These storm drain facilities have been sized to accommodate the built-out condition of the project site. According to the project’s WQMP, all drainage patterns would remain similar to existing conditions.

The project site is relatively flat and allows stormwater runoff to sheet flow away from the existing, three-story, above grade apartments over landscape and hardscape. The single-level subterranean parking lots under each apartment building incorporate a trench drain at the bottom of the driveway to drain any runoff that sheet flows over driveways. Generally, the northerly portion of the project is at a slightly higher elevation, and the southerly portion of the project is at a slightly lower elevation, creating overland flow in a north to south direction (Appendix H). This existing condition allows runoff to occur over asphalt pavement, concrete walks, landscape areas, and other common areas such as tennis court areas towards on-site area drains that discharge to an on-site storm drain facility owned by the City of Orange (illustrated in Appendix C, Basemap of Drainage Facilities in Orange County, Map 21). The City-owned, on-site storm
drain facility begins as a 24-inch diameter pipe at the northernmost portion and leaves the site as a 33-inch diameter pipe along an 8-foot easement due west towards South Lewis Street. The off-site receiving waters include the City-owned 45-inch diameter pipe along South Lewis Street, which conveys stormwater due south towards the Lewis Storm Channel, or Channel 5 (C05SII), and the downstream East Garden Grove Wintersburg Channel, both owned and maintained by the Orange County Flood Control District. The on-site, north-south drive aisle currently allows runoff to discharge off-site at the southerly face of the drive aisle via an existing curb and gutter. The runoff continues south towards a curb inlet adjacent to City Parkway West and discharges into the Lewis Storm Channel at an upstream location further east.

Postdevelopment conditions would mimic the pre-development conditions to the greatest extent feasible, where most of the 3.3-acre project area would consist of impervious building roof area, asphalt pavement for parking stalls and fire lanes, and also decorative landscape area. The project has been designed as to maintain as close-to existing drainage conditions as possible. According to the Preliminary WQMP for the project, 34 percent of the pre-project surface area is pervious, and the post-project percent pervious would be 26 percent (Appendix H). Thus, the proposed project would cause a reduction of 8 percent in pervious surface area on the project site. Conversely, the pre-project percent impervious area is 66 percent, and post-project percent impervious would be 74 percent (Appendix H). This 8 percent increase in impervious, or hard surfaces on the project site, prevents the natural soaking of rainwater into the ground, where it may instead flow over ground, potentially causing erosion on and off site. The project’s new storm drain facilities have been sized to accommodate the built-out condition of the project site, including the capture of increased stormwater runoff resulting from an 8 percent increase in impervious surfaces on site. Because all on-site stormwater and project runoff would be collected by existing and new existing storm drain infrastructure, as described in Appendix H, any additional runoff resulting from this increase would be less than or equal to the existing condition, so that the potential for increased runoff over hard surfaces is minimized. For these reasons, the proposed project would not alter drainage patterns such that substantial erosion or siltation would occur. Impacts would be less than significant.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

The project site proposes the redevelopment of The Terrace Apartments, which would construct three, 4-story multi-family apartment buildings in addition to three new subterranean parking structures below each new apartment building and the conversion of clubhouse courtyard to a parking lot. As discussed in Impact 9(c), these improvements would increase the net impervious surface area on the site by an 8 percent. The project has been designed as to maintain as close-to existing drainage conditions as possible. This 8 percent increase in impervious, or hard surfaces on the project site, prevents the natural soaking of rainwater into the ground, where it may
instead flow over ground, potentially causing erosion on and off site. The project’s new storm drain facilities have been sized to accommodate the built-out condition of the project site, including the capture of increased stormwater runoff resulting from an 8 percent increase in impervious surfaces on site. Because all on-site stormwater and project runoff would be collected by existing and new existing storm drain infrastructure, as described in Appendix H, any additional runoff resulting from this increase would be less than or equal to the existing condition, so that the potential for increased runoff over hard surfaces is minimized. Therefore, any increased rate or amount of surface runoff would be captured and treated prior to discharge into the City-owned, on-site storm drain facility. The proposed project would not alter drainage patterns such that downstream flooding would occur. Impacts would be less than significant and no mitigation measures are necessary.

Significance Determination: Less than significant impact. Mitigation Measures: No mitigation measures are required. Significance Determination After Mitigation: Less than significant.

e) 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?

A significant impact may occur if a project would increase the peak flow of stormwater runoff to a level that exceeds the capacity of the storm drain system serving the project site. Project-related impacts on the capacity of stormwater drainage systems are addressed in this section and Appendix H.

The existing drainage conditions on site are as follows: The project site is relatively flat and allows stormwater runoff to sheet flow away from the existing, three-story, above grade apartments over landscape and hardscape. The single-level subterranean parking lots under each apartment building incorporate a trench drain at the bottom of the driveway to drain any runoff that sheet flows over driveways. Generally, the northerly portion of the project is at a slightly higher elevation, and the southerly portion of the project is at a slightly lower elevation, creating overland flow in a north to south direction (Appendix H). This existing condition allows runoff to occur over asphalt pavement, concrete walks, landscape areas, and other common areas such as tennis court areas towards on-site area drains that discharge to an on-site storm drain facility owned by the City of Orange (illustrated in Appendix C, Basemap of Drainage Facilities in Orange County, Map 21). The City-owned, on-site storm drain facility begins as a 24-inch diameter pipe at the northernmost portion and leaves the site as a 33-inch diameter pipe along an 8-foot easement due west towards South Lewis Street. The off-site receiving waters include the City-owned 45-inch diameter pipe along South Lewis Street, which conveys stormwater due south towards the Lewis Storm Channel, or Channel 5 (C05SII), and the downstream East Garden Grove Wintersburg Channel, both owned and maintained by the Orange County Flood Control District. The on-site, north-south drive aisle currently allows runoff to discharge off-site at the southerly face of the drive aisle via an existing curb and gutter. The runoff continues south
towards a curb inlet adjacent to City Parkway West and discharges into the Lewis Storm Channel at an upstream location further east.

As discussed in Impacts 9(c) and 9(d), site imperviousness would be increased by 8 percent under proposed conditions. The project has been designed as to maintain as close-to existing drainage conditions as possible. The post-construction project site will utilize the existing stormwater infrastructure on site, as well as new stormwater capture infrastructure which has been designed to capture any additional runoff that may be generated on site due to the 8 percent increase in impervious surfaces. Therefore, the proposed storm drain infrastructure, in conjunction with existing on-site storm drain infrastructure designed to handle the existing condition runoff, would not be negatively affected by development of the proposed project. The post-construction runoff from the project site would be adequately handled by the project’s new drainage system and would not exceed the capacity of existing or planned stormwater drainage systems. Impacts would be less than significant.

**Significance Determination:** Less than significant impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** Less than significant.

f) **Otherwise substantially degrade water quality?**

Project-related water quality impacts, which include impacts to related sources of polluted runoff during the project’s construction and operational phases, are addressed in Impact 9(a) and Appendix H. As concluded in this section, impacts would be less than significant with the implementation of project features designed to reduce impacts to water quality, construction and post-construction BMPs, and MM GEO-1, which requires the preparation of a SWPPP.

**Significance Determination:** Less than significant impact with mitigation incorporated.
**Mitigation Measures:** MM GEO-1
**Significance Determination After Mitigation:** Less than significant.

g) **Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**

The Federal Emergency Management Agency (FEMA) flood maps identify areas that are prone to flooding. According to the FEMA Flood Insurance Rate Map (FIRM) Number 06059C142J, the proposed project site is not located within an identified 100-year flood hazard area (Zone A). According to the FEMA FIRM, the proposed project site is located in Zone X, “Area of Minimal Flood Hazard.” Therefore, the project would not place housing within an identified 100-year hazard area. No impact would occur and no mitigation measures are necessary.

**Significance Determination:** No impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** No impact.
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

FEMA flood maps identify areas that are prone to flooding. According to the FEMA FIRM Number 06059C142J, the proposed project site is not located within an identified 100-year flood hazard area (Zone A). According to the FEMA FIRM, the proposed project site is located in Zone X, “Area of Minimal Flood Hazard.” There would not be any structures placed within an identified 100-year hazard area and would not substantially alter flood flows. No impacts would occur and no mitigation measures are necessary.

Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

According to the City of Orange General Plan, Public Safety Element, dams are present along Santiago Creek at two locations: Villa Park Dam (10.5 miles from the project site) and Santiago Dam (Irvine Lake) (12.4 miles from the project site) (City of Orange 2010). Both dams are located in the foothills of east Orange. Peters Canyon Dam is located within Peters Canyon approximately 2 miles west of Irvine Lake. Areas below (downstream from) these dams, including large areas within the City of Orange, have high potential for inundation in the unlikely event of catastrophic dam failure. The project site’s extended distance from and orientation to the dams reduces the likelihood of flooding on the project site in the event of catastrophic dam failure. Impacts are considered less than significant and no mitigation measures are necessary.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant.

j) Inundation by seiche, tsunami, or mudflow?

A significant impact may occur if a project site is sufficiently close to the ocean or other water body to be potentially at risk for the effects of seismically-induced tidal phenomena (seiche and tsunami) or if a project site is located adjacent to a hillside area with soil characteristics that would indicate potential susceptibility to mudslides or mudflows.

The project site is not in an area subject to the effects of seismically-induced tidal phenomena (seiche and tsunami) or located adjacent to a hillside area with soil characteristics that would indicate potential susceptibility to mudslides or mudflows. The site and the surrounding area are relatively flat and developed and are not at risk of mudflows.

The potential for the site to be adversely impacted by earthquake-induced tsunamis is considered to be negligible because the site is located approximately 18 miles inland from the Pacific Ocean.
coast at an elevation exceeding the maximum height of potential tsunami inundation. Additionally, the potential for the site to be adversely impacted by earthquake-induced seiches is considered to be negligible due to the lack of any significant enclosed bodies of water located in the vicinity of the project site. No impact would occur.

**Significance Determination:** No impact.  
**Mitigation Measures:** No mitigation measures are required.  
**Significance Determination After Mitigation:** No impact.
10. LAND USE/PLANNING. Would the project:

<table>
<thead>
<tr>
<th>(a)</th>
<th>Physically divide an established community?</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant Impact</th>
<th>With Mitigation Incorporated</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b)</td>
<td>Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td>Conflict with any applicable habitat conservation plan or natural community conservation plan?</td>
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</tbody>
</table>

Impact Analysis

a) Physically divide an established community?

A significant impact may occur if a project were sufficiently large enough or otherwise configured in such a way as to create a physical barrier within an established community. A typical example would be a project that involves a continuous right-of-way such as a roadway, which would divide a community and impede access between parts of the community. The proposed project is not of the scale or nature that could physically divide an established community, as the Project proposes multi-family residential uses in an area surrounded by other commercial, multi-family residential, and mixed-use developments. The project proposes to develop an additional 167 residential units in three new structures on a site currently developed with 441 apartment units in eight buildings. The project site is located in a highly-urbanized area of the City surrounded by office, commercial/retail, religious, medical, entertainment, and residential uses. The project design and use would be compatible with the surrounding uses and would not result in alteration or modification of the existing public street or sidewalk systems and patterns in the area. The proposed project would be consistent with the City of Orange General Plan goals by integrating the proposed project and existing residential development with nearby existing transit corridors, commercial/retail, office, entertainment, hospitality, religious, and medical uses in the surrounding area (e.g., commercial/retail uses within The Outlets at Orange). Thereby creating a more integrated and connected urban environment. (See discussion regarding General Plan consistency, below in the discussion for Impact b.)

Furthermore, there are established residential communities to the west of the project site and development of the proposed project would not physically divide these communities in any way. The project would be developed within the confines of the project site and would not introduce new roadways or other infrastructure improvements that would bisect or transect the residential communities. Access to the existing residential communities would also not be interrupted as a result of the project development, since residents of these communities do not have to cross the project site to access their community.

Therefore, the proposed project would not create any land use barriers or otherwise divide or disrupt the physical arrangement of the existing residential communities. No impacts would occur.
Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

A significant impact may occur if a project is inconsistent with applicable land use plans or zoning designations and would cause adverse environmental effects, which these regulations are designed to avoid or mitigate. The adopted land use regulations applicable to the project site include the City’s General Plan and Zoning Code (City of Orange 2010). The following is an analysis of the proposed project’s consistency with the City’s land use regulations.

General Plan Consistency

The City’s General Plan land use designation for the project site is UMIX, which also applies to the overall Outlets at Orange commercial area and the immediate properties to the south and east. These properties are within the West Chapman Avenue/Uptown Orange focus area designated by the City’s General Plan (City of Orange 2010); future residential and nonresidential development within this focus area was considered in the 2010 Certified Programmatic Environmental Impact Report for the 2010 General Plan Update. As stated in the City’s General Plan Land Use Element (City of Orange 2010, refer to page LU-18), the UMIX designation provides for integrated commercial retail, professional office, housing, and civic uses within West Chapman Avenue/Uptown Orange. These areas are intended to provide urban, high intensity, regionally oriented activity centers that define the character of surrounding areas. Convenient transit access, innovative housing options, and pedestrian-oriented design are key considerations.

Consistent with the UMIX zoning designation of the project site, the proposed project would conform with and provide for the urban, high-intensity uses outlined in the City’s General Plan for the project site—in particular, the urban, high-intensity uses envisioned for the West Chapman Avenue/Uptown Orange focus area. Specifically, the proposed project consists of the development of an addition 167 residential dwelling units in three new structures on a site currently developed with 441 apartment units in eight buildings. In addition, the project proposes to remove 93 existing parking stalls and construct 329 parking stalls for a total of 422 parking stalls. The proposed uses would be developed adjacent to a high-intensity, regionally oriented commercial/retail center known as The Outlets at Orange.

The proposed project would also help implement and further a number of goals and policies of the City’s General Plan. Specifically, the proposed project would be consistent with Policies 2.1 through 2.9 of the General Plan Land Use Element (City of Orange 2010), which encourage mixed-use development for purposes of promoting convenient and efficient relationships between housing, employment, services, and transit.
The proposed project has been sited and designed to provide convenient access to transit, innovative housing options, social interaction, and pedestrian-oriented design. As shown in Figure 3, the overall project has a pedestrian-oriented design and improves the pedestrian circulation system and experience over existing conditions. Pedestrian access for residents, guests and employees of the apartment complex would be provided via walkways on South Lewis Street and City Boulevard West. Future project residents would also be within walking distance to public transit offered by the OCTA, which currently offers bus services and stops along South Lewis Street, Chapman Avenue, and The City Drive. Additionally, the apartment complex includes a number of resident amenities (e.g., clubhouse and swimming pool) for social interaction.

Furthermore, the residential density that would be provided under the proposed project would be consistent with that outlined in Table LU-1 (Land Use Designations) of the General Plan Land Use Element (City of Orange 2010). As provided in Tables LU-1, the residential density permitted under the UMIX land use designation is 30.0 to 60.0 dwelling units/acre (du/ac). The proposed apartment complex would have a total density of 37.68 du/ac per gross acre (636 du/16.88 ac = 37.68 du/ac), well within the density permitted. According to the California Department of Finance, the average household size in the City of Orange is 3.07 persons (Department of Finance 2018). As such, the proposed project has a potential population increase to approximately 512.7, or 513 persons. The 167 additional apartment units and associated population increase under the proposed project also fall within the buildout assumptions of the 2010 General Plan Update Certified PEIR, which are reflected in the final development capacity numbers by land use in Table LU-2 (General Plan Development Capacity) of the City’s General Plan Land Use Element (City of Orange 2010). Per Table LU-2, the residential development capacity for the overall/City-wide UMIX land use designation (which applies to the project site) is 10,223 dwelling units, with a corresponding population buildout of 25,558 persons.

Additionally, as shown in Figure LU-8 (Urban Mixed-Use Sites Eligible for High Rise Development) of the City’s General Plan (City of Orange 2010), the project site is in an area eligible for high-rise development. The building heights of the proposed apartment complex would also be compatible with those of the surrounding office, residential, and commercial/retail uses, which include buildings that range in height from one to eight stories.

Furthermore, the project site is within the West Chapman Avenue/Uptown Orange focus area, which consists of mostly commercial properties west of SR-57. This focus area contains a mix of major destination uses, including shopping, entertainment, offices, hotels, and a hospital. As a regional mixed-use node, the West Chapman Avenue/Uptown Orange focus area can accommodate additional development intensity, including high-density multi-family residential development. As noted above, the proposed project includes the development of 167 additional residential dwelling units; therefore, the proposed project would introduce some of the development envisioned for this area.
Based on the preceding, implementation of the proposed project would not conflict with the City’s General Plan. Therefore, no land use impacts would occur and no mitigation measures are necessary.

**Zoning Consistency**

The City’s zoning code (Title 17 of the Orange Municipal Code) establishes the basic zoning regulations under which land is developed and utilized and by which the City’s General Plan is systematically implemented. It is the method the City uses to implement control of land uses, in accordance with the City’s General Plan goals and policies.

Per the City’s zoning map, the zoning district of the project site is UMU. Zoning and development standards for the UMU are incorporated into Chapter 17.19 (Mixed Use Districts) of the City’s zoning code. The UMU zoning district is intended to provide urban, high-intensity, regionally oriented activity centers. This zoning district provides for integrated commercial retail, professional office, residential, and civic uses. Residential development is allowed, either as part of a mixed-use project or as a freestanding use. Convenient transit access, innovative housing options, and pedestrian-oriented design are key considerations. Similar to the General Plan land use designation, the UMU zoning district permits a residential density range of 30 to 60 du/ac and a nonresidential intensity range of 1.5 to 3.0 FAR.

Development of the proposed project would not require the approval of a zoning code amendment or zone change; nor would it require a variance from the City’s zoning standards. With exception of the maximum building height permitted for the three apartment buildings proposed (which require a CUP, as discussed below), the project as proposed would be implemented in accordance with the provisions of the City’s zoning code. Specifically, the proposed project has been designed consistent with the development standards outlined in Chapter 17.19 (Mixed Use Districts) of the City’s zoning code. The proposed project is consistent with the residential density and required setback standards outlined in Section 17.19.120 (Development Standards) of the City’s zoning code. As demonstrated in detail in Impact 3.1(c), the project has also been designed consistent with the provisions of Section’s 17.19.080 (Mixed Use Development) and 17.19.090 (Multi-family Development) of the City’s zoning code, which call for among other provisions the consistent use of architectural details and materials; the provision of design features at the street and upper levels; and design with neighborhood interface in mind. The uses that would be developed under the proposed project are also consistent with those permitted under the UMU zoning district.

**Conditional Use Permit**

Concerning the permitted building height standard, as proposed, project implementation requires City approval of a CUP. Specifically, a CUP is required for the increased building heights proposed for apartment buildings A, B, and C. Per Section 17.19.120 (Development Standards) of the Orange Municipal Code, the maximum permitted building height without discretionary approval (e.g., CUP) for the UMU zoning district is 45 feet or three stories, whichever is less. As also stated in Section 17.19.120, building heights may exceed the maximum allowed provided no
part of the building exceeds one-quarter of the horizontal distance, measured in feet, between the ground point of the building and the nearest single-family residential district boundary line.

As proposed, apartment buildings A, B, and C would exceed the allowable building height of three stories. Buildings A, B, and C are proposed to be podium style buildings of four stories constructed above garages. However, approval of the CUP would not result in a significant land use impact concerning zoning. As proposed, no part of the proposed apartment complex exceeds one-quarter of the horizontal distance, measured in feet, between the ground point of the buildings and the nearest single-family residential district boundary line. The nearest single-family residential district to the project site is to the west (existing single-family residential neighborhood), across South Lewis Street.

Additionally, as stated in the General Plan Consistency section, above, the project site is in an area eligible for high-rise development, per Figure LU-8 (Urban Mixed-Use Sites Eligible for High Rise Development) of the City’s General Plan (City of Orange 2010). The proposed apartment complex would be midrise, well within and complementary to the building heights permitted under the UMIX land use designation. The proposed building heights would also be compatible with those of the surrounding office, residential and commercial/retail uses, which include buildings that range in height from one to eight stories.

**Conclusion**

Based on the preceding information, implementation of the proposed project would not conflict with the City’s zoning code. Therefore, no land use impacts would occur and no mitigation measures are necessary.

**Significance Determination:** No impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** No impact.

c) **Conflict with any applicable habitat conservation plan or natural communities conservation plan?**

The project site is not located within the boundary of and does not contain undeveloped natural lands subject to an adopted HCP, NCCP, or other approved local, regional, or State HCP; therefore, the project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or State HCP. No impacts would occur.

**Significance Determination:** No impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** No impact.
11. MINERAL RESOURCES. Would the project:

<table>
<thead>
<tr>
<th>Impact Analysis</th>
<th>Impact Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>(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?</td>
<td>No impact.</td>
</tr>
<tr>
<td>(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?</td>
<td>No impact.</td>
</tr>
</tbody>
</table>

Impact Analysis

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?

A significant impact would occur if a project is located in an area used or available for extraction of a locally-important mineral resource and the project converted an existing or potential future locally-important mineral extraction use to another use or if the project affected access to a site in use or potentially available for locally-important mineral resource extraction. A significant impact may occur if the project site is located in an area used or available for extraction of a regionally-important mineral resource, or if the project would convert an existing or future regionally important mineral extraction for another use, or if the project would affect access to a site used or potentially available for regionally-important mineral resource extraction. According to the City’s Natural Resource Element mineral resource deposits can be found in and along the Santa Ana River and Santiago Creek. These mineral resources have mostly been exhausted from previous mining activity and urbanization. Santiago Creek is located approximately 0.7 miles away from the project site. No mineral resource areas that would be of value to the region exist on or near the project site. Additionally, no locally important mineral resource recovery sites are on or near the project site. The site is not permitted for mining use under the Urban Mixed-Use zoning district of the project site, which is in an urbanized area of the city. No impact would occur.

Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.

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?

No mineral resource areas that would be of value to the region exist on or near the project site. Additionally, no locally important mineral resource recovery sites are on or near the project site. The site is not permitted for mining use under the Urban Mixed-Use zoning district of the project site, which is in an urbanized area of the city. Because the project site lacks locally important mineral resource recovery sites, and is not permitted for mining use, there would be no impact. No impact would occur.
Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.
12. **NOISE.** *Would the project result in:*

<table>
<thead>
<tr>
<th>(a)</th>
<th>Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Potentially Significant Impact</strong></td>
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<th>(b)</th>
<th>Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?</th>
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<tbody>
<tr>
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<td><strong>Potentially Significant Impact</strong></td>
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<thead>
<tr>
<th>(c)</th>
<th>A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Potentially Significant Impact</strong></td>
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</tbody>
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<table>
<thead>
<tr>
<th>(d)</th>
<th>A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?</th>
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<tbody>
<tr>
<td></td>
<td><strong>Potentially Significant Impact</strong></td>
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<thead>
<tr>
<th>(e)</th>
<th>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 expose people residing or working in the project area to excessive noise levels?</th>
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</thead>
<tbody>
<tr>
<td></td>
<td><strong>Potentially Significant Impact</strong></td>
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<table>
<thead>
<tr>
<th>(f)</th>
<th>For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?</th>
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<tbody>
<tr>
<td></td>
<td><strong>Potentially Significant Impact</strong></td>
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**Environmental Setting**

This analysis is based on the Noise Impact Analysis report prepared by FCS dated August 22, 2018. The report is contained in Appendix I of this document.

**Impact Analysis**

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

**Construction Noise Impacts**

A significant impact would occur if project-related, noise producing construction activities would occur during hours other than those permitted by the City’s Code of Ordinances.

Noise impacts from construction activities associated with the project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

Two types of short-term noise impacts could occur during construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the project site. A characteristic of noise is that a doubling of sound sources with equal strength is required to result in a 3 A-weighted decibel (dBA) increase in noise level. Project-related construction trips would not result in a doubling of traffic volumes on any roadway segment in the project vicinity, therefore they would not result in even a 3 dBA increase in traffic noise levels compared
to levels that would exist without the project. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance, the effect on longer-term (hourly or daily) ambient noise levels would be small. Therefore, short-term construction-related impacts associated with worker commute and equipment transport to the project site would be less than significant and no mitigation is necessary.

The second type of short-term noise impact is related to noise generated during construction on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site 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. 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.

The demolition and construction that would take place during this project would likely require the use of scrapers, bulldozers, water trucks, haul trucks, and pickup trucks. The maximum noise level generated by each scraper is assumed to be 85 dBA $L_{max}$ at 50 feet from this equipment. Each bulldozer would also generate 85 dBA $L_{max}$ at 50 feet. The maximum noise level generated by graders is approximately 85 dBA $L_{max}$ at 50 feet. Each doubling of sound sources with equal strength increases the noise level by 3 dBA. Assuming that four of the loudest pieces of construction equipment all operate simultaneously at full power within 50 feet of a single point (the acoustic center of these various noise sources) would produce a reasonable worst-case combined noise level during the loudest phase of construction of up to 90 dBA $L_{max}$. Assuming that these multiple pieces of equipment would all operate simultaneously in those same locations for a full hour would result in a reasonable worst-case hourly average of 86 dBA $L_{eq}$. The acoustical center reference is used because construction equipment must operate at some distance from one another on a project site (they cannot all operate simultaneously at a single point), and the combined noise level as measured at a point equidistant from the sources (acoustic center) would be the worst-case maximum noise level.

Within the project site’s boundaries, there are existing residential and non-residential developments that would be potentially exposed to noise produced by construction activities associated with the new proposed developments. Proposed construction activities would take place on the east and west ends of the project site.

The closest off-site noise-sensitive receptor to the project’s proposed construction areas is an existing single-family residential home located east of South Lewis Avenue. This receptor would be located approximately 90 feet from the acoustic center of the nearest proposed construction area at the project site where multiple pieces of heavy construction equipment would operate simultaneously. At this distance, worst-case construction noise levels could range up to approximately 85 dBA $L_{max}$, intermittently, and could have an hourly average of up to 81 dBA $L_{eq}$, at the façade of this nearest existing single-family residential buildings.
The closest existing on-site apartment building to the project’s proposed construction areas would be located approximately 75 feet from the acoustic center of the nearest proposed construction area at the project site where multiple pieces of heavy construction equipment would operate simultaneously. At this distance, worst-case construction noise levels could range up to approximately 86 dBA $L_{\text{max}}$, intermittently, and could have an hourly average of up to 82 dBA $L_{\text{eq}}$, at the façade of this nearest existing single-family residential buildings.

Compliance with City’s ordinance for permissible construction hours would reduce the effects of noise produced by construction activities on longer-term (hourly or daily) ambient noise levels and it would reduce potential impacts that could result in annoyance or sleep disturbances at nearby sensitive receptors. The City’s ordinance for permissible construction hours limits noise producing construction activities to the hours between 7:00 a.m. and 8:00 p.m. on any day except for Sunday or a Federal holiday, or between the hours of 9:00 a.m. and 8:00 p.m. on Sunday or a Federal holiday. Restricting construction activities to these time-periods and implementing the best management noise reduction techniques and practices outlined in MM NOI-1, would ensure that construction noise levels would not expose persons to noise levels in excess of established standards. Therefore, potential short-term construction noise impacts to receptors in project vicinity would be reduced to a less than significant level with mitigation incorporated.

**Stationary Source Operational Noise Impacts**

A significant impact would occur if operational noise levels generated by stationary noise sources at the proposed project site would exceed the following levels at the outdoor activity area of any residential land use in the project vicinity:

- 55 dBA $L_{\text{eq}}$ or 70 dBA $L_{\text{max}}$ between the hours of 7:00 a.m. and 10:00 p.m.; or
- 45 dBA $L_{\text{eq}}$ or 65 dBA $L_{\text{max}}$ between the hours of 10:00 p.m. and 7:00 a.m.

According to the City’s noise ordinance, for multi-family residential or mixed use developments located within the General Plan’s urban mixed use, neighborhood mixed use, old town mixed use or medium density residential land use districts, the City’s exterior noise standards apply to common recreation areas only.

The proposed project would include new stationary noise sources such as parking lot activities, and mechanical ventilation system equipment. These would be potential point sources of noise that could affect noise-sensitive receptors in the project vicinity.

Typical parking lot activities include people conversing, doors shutting, or vehicles idling generate noise levels of approximately 60 dBA to 70 dBA $L_{\text{max}}$ at 50 feet. These activities are expected to occur sporadically throughout the day, as visitors and staff arrive and leave parking lot areas. The project’s site plan proposes to add 422 on-site parking spaces; 34 of these parking spaces would be located above-ground while the remaining spaces would be included in the project’s proposed underground parking structures. Noise levels produced by underground parking activities would not impact existing noise-sensitive land uses surrounding the project site.
The nearest noise-sensitive receptor to the proposed project’s above-ground parking areas is an existing multi-family residential building (Building 4) located west of City Boulevard West. Because this receptor is located within an Urban Mixed Use zoning district, the City’s exterior noise standard applies only to this receptor’s common recreation areas. This receptor’s common recreation area (pool) would be located approximately 125 feet from the nearest proposed parking area on the project site. Additionally, the intervening Club House building would block the line of site between the proposed parking lot and the nearest common recreation area providing, at minimum, 10 dBA in shielding reduction. At this distance and accounting for the attenuation provided by the intervening structure, noise levels from parking lot activities would attenuate to below 52 dBA $L_{\text{max}}$ at the outdoor activity area of the nearest existing residential receptor. Because parking lot activities would be expected to occur sporadically throughout the day, as customers and employees arrive and leave the parking lot areas, when averaged over a period of time, noise levels produced by these activities would not exceed the City’s maximum nighttime noise performance threshold for a receiving residential land use of 65 dBA $L_{\text{max}}$. Additionally, these noise levels would not exceed the City’s nighttime hourly threshold of 45 dBA $L_{\text{eq}}$. Therefore, the impact of parking lot activities to sensitive off-site receptors in the project vicinity would be less than significant.

Noise levels from typical mechanical ventilation equipment are anticipated to range up to approximately 60 dBA $L_{\text{eq}}$ at a distance of 25 feet. Proposed rooftop mechanical ventilation systems at the project site could be located as close as 60 feet from the nearest noise-sensitive receptor, which is the existing on-site apartment building. The equipment would be setback a minimum of 10 feet from the edge of the roof. Therefore, the edge of the roof and roof parapet on the proposed apartment building would block the line of sight from all rooftop equipment to this nearest receptor, providing shielding and additional noise reduction. At this distance and the shielding provided by the edge of the roof and roof parapet, noise levels generated by this equipment would attenuate to below 42 dBA $L_{\text{eq}}$ at the closest noise-sensitive receptor. These noise levels are below the City’s maximum nighttime noise performance threshold for a receiving residential land use of 65 dBA $L_{\text{max}}$. Additionally, these noise levels would not exceed the City’s nighttime hourly threshold of 45 dBA $L_{\text{eq}}$. Therefore, the impact of mechanical ventilation equipment operational noise levels to sensitive off-site receptors would be less than significant and no mitigation is necessary.

**Mobile Source Operational Noise Impacts**

A significant impact would occur if persons working or residing at the proposed project site would be exposed to traffic noise levels exceeding the City’s Maximum Allowable Noise Exposure threshold of 65 dBA community noise equivalent level (CNEL) for new multi-family, mixed-use developments located within an urban mixed-use zoning district.

The Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate existing and future traffic noise conditions in the vicinity of the project site. Traffic data used in the model was obtained from the traffic report for the project prepared by LLG (LLG 2018). The resultant noise levels were weighed and summed over a 24-
hour period in order to determine the CNEL values. Table 14 shows a summary of the traffic noise levels for existing traffic condition noise levels without and with the project as measured at 50 feet from the centerline of the outermost travel lane. Table 15 shows a summary of the traffic noise levels for year 2021 cumulative traffic condition noise levels without and with the project.

Table 14: Existing Traffic Noise Model Results Summary

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Existing No Project CNEL (dBA)</th>
<th>Existing Plus Project (dBA) CNEL</th>
<th>Increase over Existing No Project (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Lewis Street—Chapman Avenue to Project Driveway 1</td>
<td>66.8</td>
<td>66.9</td>
<td>0.1</td>
</tr>
<tr>
<td>South Lewis Street—Project Driveway 1 to Project Driveway 2</td>
<td>66.6</td>
<td>66.7</td>
<td>0.1</td>
</tr>
<tr>
<td>South Lewis Street—Project Driveway 2 to Lampson Avenue</td>
<td>66.6</td>
<td>66.6</td>
<td>0.0</td>
</tr>
<tr>
<td>City Boulevard West—Manchester Avenue to Project Driveway 3</td>
<td>49.6</td>
<td>49.9</td>
<td>0.3</td>
</tr>
<tr>
<td>City Boulevard West—Project Driveway 3 to The City Way</td>
<td>48.5</td>
<td>48.5</td>
<td>0.0</td>
</tr>
<tr>
<td>City Boulevard West—The City Way to City Parkway</td>
<td>54.9</td>
<td>54.9</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Note: Traffic noise levels as measured at 50 feet from the centerline of the outermost travel lane. Source: FCS 2018.

Table 15: Year 2021 Cumulative Traffic Noise Model Results Summary

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Cumulative No Project CNEL (dBA)</th>
<th>Cumulative Plus Project (dBA) CNEL</th>
<th>Increase over Cumulative No Project (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Lewis Street—Chapman Avenue to Project Driveway 1</td>
<td>67.4</td>
<td>67.4</td>
<td>0.0</td>
</tr>
<tr>
<td>South Lewis Street—Project Driveway 1 to Project Driveway 2</td>
<td>67.1</td>
<td>67.2</td>
<td>0.1</td>
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<tr>
<td>South Lewis Street—Project Driveway 2 to Lampson Avenue</td>
<td>67.2</td>
<td>67.2</td>
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<tr>
<td>City Boulevard West—Manchester Avenue to Project Driveway 3</td>
<td>49.7</td>
<td>50.1</td>
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<tr>
<td>City Boulevard West—Project Driveway 3 to The City Way</td>
<td>48.6</td>
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<tr>
<td>City Boulevard West—The City Way to City Parkway</td>
<td>55.2</td>
<td>55.3</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Note: Traffic noise levels as measured at 50 feet from the centerline of the outermost travel lane. Source: FCS 2018.

As shown in Table 15, projected traffic noise levels along City Boulevard West between The City Way and City Parkway adjacent to the east boundary of the project site would range up to approximately 55 dBA CNEL as measured at 50 feet from the centerline of the nearest travel lane under cumulative plus project conditions. The nearest façade of the proposed multi-family residential unit would be located approximately 50 feet from the centerline of City Boulevard West. At this distance, traffic noise levels from City Boulevard West would range up to
approximately 58 dBA L_{dn}. These noise levels are below the City’s Maximum Allowable Noise Exposure threshold of 65 dBA L_{dn} for new multi-family developments. Therefore, implementation of the proposed multi-family residential land use on the east side of the project site would not expose persons to traffic noise levels in excess of acceptable standards.

As shown in Table 15, projected traffic noise levels along South Lewis Street between Project Driveway 1 and Project Driveway 2 adjacent to the west boundary of the project site would range up to approximately 67 dBA C_{NE}L as measured at 50 feet from the centerline of the nearest travel lane under cumulative plus project conditions. The nearest façade of the proposed multi-family residential unit would be located approximately 100 feet from the centerline of South Lewis Street. At this distance, traffic noise levels from South Lewis Street would range up to approximately 64 dBA L_{dn}. These noise levels are below the City’s Maximum Allowable Noise Exposure threshold of 65 dBA L_{dn} for new multi-family developments. Therefore, implementation of the proposed multi-family residential land use on the west side of the project site would not expose persons to traffic noise levels in excess of acceptable standards. Impacts are considered less than significant and no mitigation is necessary.

**Significance Determination:** Less than significant with mitigation incorporated.

**Mitigation Measures:**

**MM NOI-1** Implementation of the following multi-part mitigation measure is required to reduce potential construction period noise impacts:

- The construction contractor shall ensure that all equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment.
- The construction contractor shall ensure that unnecessary idling of internal combustion engines (i.e., idling in excess of 5 minutes) is prohibited.
- The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists.
- At all times during project grading and construction, the construction contractor shall ensure that stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from adjacent residences.
- The construction contractor shall ensure that the construction staging areas shall be located to create the greatest feasible distance between the staging area and noise-sensitive receptors nearest the project site.
- The construction contractor shall ensure that all on-site demolition and construction activities, including deliveries and engine warm-up, shall be restricted to the hours between 7:00 a.m. and 8:00 p.m. on any day except for Sunday or a Federal holiday, or between the hours of 9:00 a.m. and 8:00 p.m. on Sunday or a Federal holiday.
- The construction contractor shall designate a noise disturbance coordinator who would be responsible for responding to any local complaints about construction
noise. The disturbance coordinator would determine the cause of the noise complaints (starting too early, bad muffler, etc.) and establishment reasonable measures necessary to correct the problem. The construction contractor shall visibly post a telephone number for the disturbance coordinator at the construction site.

Significance Determination After Mitigation: Less than significant.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

The City of Orange has not established its own vibration impact criteria. Therefore, for purposes of this analysis, the Federal Transit Administration’s (FTA) damage criteria was utilized to evaluate the potential impact of groundborne vibration levels, associated with project-related construction activities, on structures in the project vicinity. A significant impact would occur if structures in the project vicinity would be exposed to groundborne vibration levels in excess of the levels established by the FTA's Construction Vibration Impact Criteria.

Project-related construction and operational groundborne vibration impacts are analyzed separately below. Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings.

In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. Common sources of groundborne vibration include construction activities such as blasting, pile driving, and operating heavy earthmoving equipment.

Short-term Construction Vibration Impacts

Of the variety of equipment that would be used during construction, large vibratory rollers would produce the greatest groundborne vibration levels. Impact equipment such as pile drivers are not expected to be used during construction of this project. Large vibratory rollers produce groundborne vibration levels ranging up to 0.210 inch per second (in/sec) peak particle velocity (PPV) at 25 feet from the operating equipment.

The closest receptor to the project’s proposed construction areas is a single-family residential home located east of South Lewis Street, south of the project site. The façade of this structure would be located approximately 42 feet from the nearest proposed construction area where heavy construction equipment would potentially operate. At this distance, groundborne vibration levels could range up to 0.096 in/sec PPV from operation of a large vibratory roller. This is below the industry standard vibration damage criterion of 0.12 in/sec PPV for the most sensitive type of structure: Buildings Extremely Susceptible to Vibration Damage. Therefore, construction-related groundborne vibration impacts are considered less than significant and no mitigation is necessary.
Operational Vibration Impacts

Implementation of the project would not include any permanent sources that would expose persons in the project vicinity to groundborne vibration levels that could be perceptible without instruments at any existing sensitive land use in the project vicinity. In addition, there are no existing significant permanent sources of groundborne vibration in the project vicinity to which the proposed project would be exposed. Therefore, project operational groundborne vibration-level impacts are considered less than significant and no mitigation is necessary.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than significant impact. According to the Orange General Plan, the City considers permanent increases in ambient noise levels to be significant if a new development would result in an increase by any of the following levels as measured at the outdoor activity area of any noise-sensitive land use:

- +5 dBA CNEL where the existing ambient noise level is less than 65 dBA.
- +3 dBA CNEL where the existing ambient noise level is greater than 65 dBA.

This highest traffic noise level increase with implementation of the project would occur along City Boulevard West from Manchester Avenue to Project Driveway 3 under cumulative plus project conditions. The project would result in an increase of 0.4 dBA. This increase is below the level that is considered a perceptible change (a 3 dBA increase), and is well below a 5 dBA increase that would be considered a substantial permanent increase in noise levels compared with noise levels that would exist without the project. Therefore, project-related traffic noise impacts on off-site receptors are considered less than significant and no mitigation is necessary.

New stationary noise sources resulting from implementation of the project would not result in noise levels above existing ambient noise levels as measured at off-site sensitive receptors. The maximum noise level generated by project-related stationary noise sources would range up to 42 dBA $L_{eq}$ (from mechanical equipment operations) and 52 $L_{max}$ (from parking lot activities) as measured at the nearest sensitive receptor. The noise measurement results indicate that existing ambient noise levels at the project site have daytime hourly average noise levels up to 64.2 $L_{eq}$ and 94.2 dBA $L_{max}$. Therefore, project-related stationary sources would not result in the +3 dBA CNEL increase above existing ambient noise levels needed to cause a substantial permanent increase. Therefore, stationary noise level impacts to off-site receptors are considered less than significant and no mitigation is necessary.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Project-related construction activities could result in high intermittent noise levels of up to approximately 86 dBA Lmax at the closest noise-sensitive land uses. Although there would be a relatively high single event noise exposure potential causing intermittent noise nuisance, the effect on longer-term (hourly or daily) ambient noise levels would be small. In addition, the project would be required to comply with the City’s Code of Ordinances requirements including the permissible hours of construction activities. Therefore, implementation MM NOI-1 requiring compliance with the City’s permissible hours of construction and implementation of best management noise reduction techniques and practices would ensure that construction noise would not result in a substantial temporary increase in ambient noise levels. Impacts are considered less than significant.

Significance Determination: Less than significant impact with mitigation incorporated.
Mitigation Measures: MM NOI-1
Significance Determination After Mitigation: Less than significant.

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 expose people residing or working in the project area to excessive noise levels?

The nearest public use airports to the project site are John Wayne Airport and Fullerton Municipal Airport, approximately 7.01 miles south and 7.47 miles northwest of the project site, respectively. Because of the distance from and orientation of the airport runways, the project site is located well outside of the 60 dBA CNEL airport noise contours. Therefore, implementation of the project would not expose persons visiting or working at the project site to noise levels from airport activity that would exceed normally acceptable standards established by the City or in an airport land use plan. Impacts associated with public airport noise are considered less than significant and no mitigation is necessary.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The project site is not located within the vicinity of a private airstrip. Therefore, no impacts associated with private airstrip noise would occur.

Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.
13. POPULATION AND HOUSING Would the project:

<table>
<thead>
<tr>
<th>(a) Induce substantial 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)?</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant Impact</th>
<th>With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<th>(b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant Impact</th>
<th>With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<th>(c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant Impact</th>
<th>With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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**Impact Analysis**

**a) Induce substantial 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 would include the development of 167 dwelling units on 3.3 acres with a projected population increase of 513 persons based on the average household size of 3.07 persons in accordance with the California Department of Finance May 2018 numbers (Department of Finance 2018). The additional 513 residents would represent less than 1 percent of the City’s buildout population. Therefore, impacts would be less than significant. The proposed project would not construct or extend roads or other infrastructure that may indirectly induce population growth; rather, existing infrastructure would be upgraded and/or replaced in order to accommodate the new residential apartment units. Furthermore, the proposed project would not include the development of job growth-inducing commercial uses and thereby would not generate job-related population growth in the area. Therefore, the impact on population growth is considered less than significant and no mitigation is required.

**Significance Determination: Less than significant impact.**

**Mitigation Measures: No mitigation measures are required.**

**Significance Determination After Mitigation: Less than significant impact.**

**b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

The project proposes to redevelop an existing multi-family apartment community by constructing an additional 167 new residential apartment units to the existing 441 apartment units. Therefore, project development would not displace a substantial number of existing housing necessitating the construction of replacement housing elsewhere. The proposed project involves the construction of new housing in support of the City’s housing needs; therefore, no related impact would occur and no mitigation is necessary.

**Significance Determination: No impact.**

**Mitigation Measures: No mitigation measures are required.**

**Significance Determination After Mitigation: No impact.**
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

As mentioned above in Impact 13(b) the project site is currently a multi-family apartment community and the project proposes to redevelop the existing multi-family apartment community by constructing an additional 167 new residential apartment units to the existing 441 apartment units. Therefore, the proposed project would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. Furthermore, the proposed project involves the construction of new housing in support of the City’s housing needs. There would be no impact and no mitigation is necessary.

Significance Determination: No impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: No impact.
14. PUBLIC SERVICES. Would the project:

| (a) Would the project result in substantial adverse physical impacts associated with the provision of or 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 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?

A significant impact may occur if the OCFD could not adequately serve a project, and a new or physically altered fire station would be necessary. The OCFD provides fire protection and emergency medical services to the City of Orange, including the project site. The services provided by the fire department include fire prevention and suppression, paramedic, emergency medical, emergency preparedness, and hazardous materials management/environmental safety. The OCFD consists of three divisions: Fire Administration, Fire Prevention, and Training and Safety. The Operations Division staffs seven fire engines (pumpers), one fire truck (ladder truck), one quintuple combination pumper (quint) and four rescue ambulances in eight Fire Stations. According to the City of Orange Fire Department’s Annual Report (City of Orange 2017), the average response times in 2016 was 3 minutes 46 seconds.

The project could increase the demand for additional fire and paramedic service, as the project site would be more densely developed when compared to the existing uses. The closest station to the project site is Station No. 6, located at 345 The City Drive South, approximately 0.34 miles east from the project site. Depending on the nature, size, and location of the alarm, units from multiple stations may respond.

The project’s design is proposing an extensive fire protection plan. This plan would be subject to compliance with the requirements set forth in the 2016 California Fire Code (and all amendments), including the provision of fire sprinkler systems throughout building. The
development would also be subject to compliance with the fire provisions specified in the 2016 California Building Code and all incorporated amendments, and the 2016 International Fire Code. The project plans would be reviewed and approved by the Orange Building and Fire Departments, which would ensure adequate emergency access, fire hydrant availability, and compliance with all applicable codes and standards.

Additionally, the City of Orange Municipal Code Section 15.38 provides for a Fire Protection Facilities Fee Program. The program requires new residential developments to pay a fire protection facilities fee to aid in offsetting the increased demand for fire services created by residential projects. The fee is due on the date of final inspection or certificate of occupancy for each unit, whichever occurs first. The incorporation of the project’s design features for fire safety, and the payment of the fire protection facilities fee would help to reduce impacts resulting in a need for new or expanded fire protection facilities. Impacts are considered less than significant and no mitigation is necessary.

**Significance Determination:** Less than significant impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** Less than significant impact.

**ii) Police protection?**

A significant impact may occur if a project creates the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives. Police protection services are provided by the Orange Police Department services to the City, including the project site. The nearest police station is located approximately 2.45 miles from the project site. According the City’s General Plan Public Safety Element, to maintain the City’s ability to serve current residents and businesses, applicants will be required to provide for adequate services and equipment to serve residents and businesses of new developments. Land uses will be evaluated and modified, if necessary, to facilitate access to emergency services, meet service standards, and ensure land use compatibility. Therefore, it would be expected that emergency response would occur with acceptable response times.

The project involves construction of 167 new multi-family apartment units, which could result in an increase in the demand for police protection services. However, project implementation is not anticipated to increase Orange Police Department response times to the project site or surrounding vicinity. The project would pay its fair share of the Police Facility Development Fee to help finance police facilities required by new development in order to avoid adversely impacting existing police protection facilities, as required by the City of Orange Municipal Code Section 3.13. Additionally, the project plans would be reviewed and approved by the Orange Building and Police Departments, which would ensure that adequate safety and crime prevention measures are provided within the project’s design. For these reasons, the proposed project would not result in a need for new or expanded police protection facilities. Impacts are considered less than significant and no mitigation is required.
Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant impact.

iii) Schools?

A significant impact may occur if a project includes substantial employment or population growth, which could generate demand for additional school facilities. The project proposes to expand the existing multi-family apartment community; currently, there are 441 multi-family apartment units on-site and implementation of the project would redevelop the site to include three new subterranean parking structures and an additional 167 multi-family apartment units. The project site is served by the Orange Unified School District (OUSD) grades K-12. The schools located near the project site within OUSD are: Lampson Elementary School (0.38 mile), Portola Middle School (1.62 miles) and Orange High School (2.82 miles) with enrollments of 846 students, 735 students, and 1,927 students, respectively. According to the student generation rates used by OUSD to analyze impacts on schools as identified in the City of Orange General Plan, the project could be expected to add 25 elementary age students, 4 middle school age students, and 5 high school age students. The project does not propose new or physically altered school facilities (Great Schools 2018).

The increase in students as a result of the proposed project would be nominal, and would not significantly impact school services. Payment of the appropriate school fees would be required for all new development in accordance with AB 2926 and SB 50 to offset the impact to school services and is considered full mitigation. Impacts are considered less than significant and no additional mitigation is required.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant impact.

iv) Parks?

A significant impact to parks would occur if implementation of a project includes a new or physically altered park or creates the need for a new or physically altered park, the construction of which could cause substantial adverse physical impacts. The City of Orange Community Services Department oversees 24 parks (251 acres) and approximately 15 miles of equestrian, biking, and recreation trails that connect a large number of neighborhood and community parks. Parks and open space makes up 31.8 percent of the land use in the City. According to the City of Orange General Plan Update PEIR (City of Orange 2010), the City currently provides approximately 1.81 acres of parkland per 1,000 persons. The City anticipates developing approximately 43.5 acres of planned future parks. The City of Orange Municipal Code Section 16.60.050, Standards and Formula for Land Dedication, state that the City requires the payment of in-lieu fees for the dedication of parkland or the dedication of parkland based upon the cost of
three acres of parkland per 1,000 persons. The proposed project would pay the in-lieu fees, as well as provide recreation amenities on site. Impacts would be less than significant.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant impact.

v) Other public facilities?

A significant impact may occur if a project includes substantial employment or population growth that could generate a demand for other public facilities, such as libraries, which would exceed the capacity to service the project site. The City’s public libraries operate according to the Public Library Facilities Master Plan (2002–2020). This master plan outlines current and projected future demand based on City’s General Plan buildout. The document outlines a master plan intended to ensure that the California State Library’s recommended standard of 4 volumes and 0.7 square foot per capita is maintained, and that the City’s library service needs are met as future development occurs. The nearest library to the project site is located approximately 2.3 miles southeast. During the development phase of the project, the developer would be required to comply with the requirements of the Orange Municipal Code, including payment of the required library facilities fee, as outlined in Chapter 3.50 (Library Facilities Fees) of the Orange Municipal Code. The proposed project would result in a nominal increase in population in the area, and would not result in a significant impact to other public facilities in the area. Impacts are considered less than significant and no mitigation is necessary.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant impact.
15. RECREATION. Would the project:

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less than Significant Impact With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</thead>
<tbody>
<tr>
<td>(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?</td>
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<tr>
<td>(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?</td>
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</tbody>
</table>

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?

A significant impact may occur if a project would include substantial employment or population growth, which could generate an increased demand for public park facilities that exceeds the capacity of existing parks and causes premature deterioration of the park facilities. New residents may result in increased use of existing City and regional parks, other recreational facilities, and trails, which may cause or accelerate substantial physical deterioration of these facilities and/or require construction of new facilities. The project proposes to expand the existing apartment complex; currently, there are 441 multi-family units on-site and the project site would be redeveloped to include a new parking structure and an additional 167 multi-family units.

The City of Orange Community Services Department oversees 24 parks (251 acres) and approximately 15 miles of equestrian, biking, and recreation trails that connect a large number of neighborhood and community parks. Parks and open space makes up 31.8 percent of the land use in the City. According to the City of Orange General Plan Update PEIR (City of Orange 2010), the City currently provides approximately 1.81 acres of parkland per 1,000 persons. The City anticipates developing approximately 43.5 acres of planned future parks. The City of Orange Municipal Code Section 16.60.050, Standards and Formula for Land Dedication, state that the City requires the payment of in-lieu fees for the dedication of parkland or the dedication of parkland based upon the cost of 3 acres of parkland per 1,000 persons. The proposed project would pay the in-lieu fees, as well as provide recreation amenities on-site. Impacts would be less than significant.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant impact.
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

A significant impact may occur if a project includes the construction or expansion of recreation facilities and if such construction of these facilities would have a significant adverse effect on the environment. The project would provide a number of private recreational facilities to residents, including an outdoor kitchen with BBQ and lounge seating, a bocce ball court, and a 0.25 and 0.5-mile jogging loop.

The project proposes to expand the existing apartment complex; currently, there are 441 multi-family units on-site and the project site would be redeveloped to include a new parking structure and an additional 167 multi-family units. The proposed project would remove the existing tennis courts on-site and add the following recreational features (the letters below correspond to the recreational features on the Landscaping Plan (Figures 8A and 8B):

A) Tot lot with play structure (approximately 500 square feet)
B) Jogging path with exercise signage (1/3 mile)
C) Outdoor table games area (approximately 300 square feet)
D) Outdoor exercise area with fitness equipment (approximately 800 square feet)
E) Outdoor kitchen/dining area (approximately 500 square feet)
F) Pickleball court (approximately 1,300 square feet)
G) Tot lot with play structure (No. 2) (approximately 600 square feet)
H) Outdoor table games (No. 2) (approximately 300 square feet)
I) Tot lot with play structure (No. 3) (approximately 600 square feet)

Additionally, construction of the proposed project is not considered likely to result in a significant construction- or operational-related impact. Therefore, no significant impacts would occur as a result of the proposed project and no mitigation is necessary.

**Significance Determination: Less than significant impact.**
**Mitigation Measures: No mitigation measures are required.**
**Significance Determination After Mitigation: Less than significant impact.**
16. TRANSPORTATION/TRAFFIC. Would the project:

<table>
<thead>
<tr>
<th>Conflict Description</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant Impact With Mitigation Incorporated</th>
<th>Less than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?</td>
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<td>(b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?</td>
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<tr>
<td>(c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?</td>
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<td>(d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</td>
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<tr>
<td>(e) Result in inadequate emergency access?</td>
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<tr>
<td>(f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities supporting alternative transportation (e.g., bus turnouts, bicycle racks)?</td>
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Environmental Setting

A TIA was prepared for this project by LLG on August 7, 2018, and is included in this IS/MND as Appendix J.

The traffic analysis evaluates the existing weekday peak-hour operating conditions at 17 key study intersections and nine key roadway segments within the project vicinity, estimates the trip generation potential of the proposed project, and superimposes the project-related traffic volumes on the circulation system as it currently exists. In addition, the analysis forecasts future weekday operating conditions (based on approved and reasonably foreseeable cumulative projects) with and without the proposed project, and, if necessary, identifies appropriate intersection improvements/mitigation measures. The weekday peak-hours evaluated consist of one hour between 7:00 a.m. to 9:00 a.m. (referred to as the AM peak-hour) and one hour between 4:00 p.m. to 6:00 p.m. (referred to as the PM peak-hour). The traffic report is intended to satisfy the traffic impact requirements of the City of Orange and be consistent with the most current Orange County Congestion Management Program (CMP).

This traffic report analyzes existing and future weekday peak-hour traffic conditions for a future (Year 2021) traffic setting upon completion of the proposed project. Peak-hour traffic forecasts for the Year 2021 have been projected by increasing existing traffic volumes by an annual growth rate of 1 percent per year and adding traffic volumes generated by cumulative projects.
known to the City of Orange, City of Garden Grove, the City of Santa Ana, and the City of Anaheim at the time the study was prepared.

**Existing Conditions**
The following are existing conditions are discussed in the TIA, see Section 3.0, Appendix J.

- Existing Street System
- Existing Traffic Volumes
- Existing Intersection Conditions
- Intersection Capacity Utilization (ICU) Method of Analysis (Signalized Intersections)
- Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)
- Two-Way Stop-Controlled Intersections
- All-Way Stop-Controlled Intersections
- Volume to Capacity (V/C) Ratio Method of Analysis (Roadway Segments)

**Site Access**
The current and primary vehicular access point is through the main entrance along City Boulevard West. The other vehicular access point is along the western border at South Lewis Street with a two-lane entry and exit, and an additional exit point near Building 7 as shown previously on Figure 3. Internal streets will provide vehicular access within the project site. Emergency vehicle circulation would be provided from all site access areas.

**Study Area Intersections**
Table 16 lists the 17 key study intersections and Table 17 shows the nine key roadway segments evaluated in the report in accordance with the Scope of Work approved by the City of Orange. Existing AM and PM peak-hour operating conditions for the 17 key study intersections were evaluated using the ICU methodology and/or HCM methodology. The key study intersections and key roadway segments selected for evaluation were determined based on coordination with City of Orange Traffic Engineering staff and application of the “51 or more peak-hour trip threshold” criteria outlined in the City of Orange Traffic Impact Analysis Guidelines, dated August 15, 2007. The intersections and roadway segments listed below provide local access to the study area and define the extent of the boundaries for this traffic impact investigation. The jurisdiction where each key study intersection/roadway segment is located is also identified.

**Table 16: Study Area Intersections**

<table>
<thead>
<tr>
<th>No.</th>
<th>North-South Street</th>
<th>East-West Street</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>State College Boulevard</td>
<td>Anaheim Way/I-5 NB Ramps</td>
<td>Orange/Caltrans</td>
</tr>
<tr>
<td>2</td>
<td>State College Boulevard</td>
<td>I-5 SB Ramps</td>
<td>Orange/Caltrans</td>
</tr>
</tbody>
</table>
### Table 16 (cont.): Study Area Intersections

<table>
<thead>
<tr>
<th>No.</th>
<th>North-South Street</th>
<th>East-West Street</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>South Lewis Street</td>
<td>Chapman Avenue</td>
<td>Orange/Garden Grove</td>
</tr>
<tr>
<td>4</td>
<td>Manchester Avenue</td>
<td>Chapman Avenue</td>
<td>Orange</td>
</tr>
<tr>
<td>5</td>
<td>The City Drive</td>
<td>Chapman Avenue</td>
<td>Orange</td>
</tr>
<tr>
<td>6</td>
<td>I-5 Ramps</td>
<td>Chapman Avenue</td>
<td>Orange/Caltrans</td>
</tr>
<tr>
<td>7</td>
<td>Rampart Street</td>
<td>Chapman Avenue</td>
<td>Orange</td>
</tr>
<tr>
<td>8</td>
<td>Manchester Avenue</td>
<td>City Boulevard West</td>
<td>Orange</td>
</tr>
<tr>
<td>9</td>
<td>City Boulevard</td>
<td>City Boulevard West/The City Way</td>
<td>Orange</td>
</tr>
<tr>
<td>10</td>
<td>City Boulevard East</td>
<td>The City Way</td>
<td>Orange</td>
</tr>
<tr>
<td>11</td>
<td>The City Drive</td>
<td>The City Way/Dawn Way</td>
<td>Orange</td>
</tr>
<tr>
<td>12</td>
<td>South Lewis Street</td>
<td>Lampson Avenue/Metropolitan Drive</td>
<td>Orange/Garden Grove</td>
</tr>
<tr>
<td>13</td>
<td>Entertainment Drive</td>
<td>City Boulevard West</td>
<td>Orange</td>
</tr>
<tr>
<td>14</td>
<td>Entertainment Drive</td>
<td>Metropolitan Drive</td>
<td>Orange</td>
</tr>
<tr>
<td>15</td>
<td>Designer Drive/State Route 22 (SR-22) WB Ramps</td>
<td>Metropolitan Drive</td>
<td>Orange/Caltrans</td>
</tr>
<tr>
<td>16</td>
<td>The City Drive</td>
<td>Metropolitan Drive</td>
<td>Orange</td>
</tr>
<tr>
<td>17</td>
<td>The City Drive</td>
<td>SR-22 EB Ramps</td>
<td>Orange/Caltrans</td>
</tr>
</tbody>
</table>

**Notes:**
- NB = northbound, SB = southbound, EB = eastbound, WB = westbound

### Table 17: Study Area Roadway Segments

<table>
<thead>
<tr>
<th>No.</th>
<th>Key Roadway Segment</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>State College Boulevard between I-5 SB Ramps and Chapman Avenue</td>
<td>Orange</td>
</tr>
<tr>
<td>2</td>
<td>Chapman Avenue between South Lewis Street and Manchester Avenue</td>
<td>Orange</td>
</tr>
<tr>
<td>3</td>
<td>Chapman Avenue between Manchester Avenue and The City Drive</td>
<td>Orange</td>
</tr>
<tr>
<td>4</td>
<td>Chapman Avenue between The City Drive and I-5 SB Ramps</td>
<td>Orange</td>
</tr>
<tr>
<td>5</td>
<td>South Lewis Street between Chapman Avenue and Lampson Avenue</td>
<td>Orange/Garden Grove</td>
</tr>
<tr>
<td>6</td>
<td>The City Drive between Chapman Avenue and Dawn Way</td>
<td>Orange</td>
</tr>
<tr>
<td>7</td>
<td>The City Drive between Dawn Way and Metropolitan Drive</td>
<td>Orange</td>
</tr>
<tr>
<td>8</td>
<td>Metropolitan Drive between South Lewis Street and SR-22 WB Ramps</td>
<td>Orange</td>
</tr>
<tr>
<td>9</td>
<td>Metropolitan Drive between SR-22 WB Ramps and The City Drive</td>
<td>Orange</td>
</tr>
</tbody>
</table>
The TIA identified the key study intersections and key roadway segments are located in the jurisdictions of the City of Orange and City of Garden Grove; therefore, the following criteria is applied for the Level of Service (LOS) analysis.

**City of Orange LOS and Significance Criteria**

According to the City of Orange General Plan Circulation Element, LOS D is the minimum acceptable condition that should be maintained during the morning and evening peak commute hours on all intersections, and LOS D is the minimum acceptable condition that should be maintained on a daily basis on all roadway segments.

**City of Garden Grove LOS and Significance Criteria**

According to the City of Garden Grove, LOS D is the minimum acceptable condition that should be maintained during the morning and evening peak commute hours on all intersections and LOS D is the minimum acceptable condition that should be maintained on a daily basis on all roadway segments.

Table 18, below summarizes the performance criteria for the 17 study intersections and Table 19, below, summarizes the performance criteria for the nine roadway segments.

**Table 18: Study Intersection Performance Criteria**

<table>
<thead>
<tr>
<th>No.</th>
<th>North-South Street</th>
<th>East-West Street</th>
<th>Performance Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>State College Boulevard</td>
<td>Anaheim Way/I-5 NB Ramps</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>2</td>
<td>State College Boulevard</td>
<td>I-5 SB Ramps</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>3</td>
<td>South Lewis Street</td>
<td>Chapman Avenue</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>4</td>
<td>Manchester Avenue</td>
<td>Chapman Avenue</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>5</td>
<td>The City Drive</td>
<td>Chapman Avenue</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>6</td>
<td>I-5 Ramps</td>
<td>Chapman Avenue</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>7</td>
<td>Rampart Street</td>
<td>Chapman Avenue</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>8</td>
<td>Manchester Avenue</td>
<td>City Boulevard West</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>9</td>
<td>City Boulevard</td>
<td>City Boulevard West/The City Way</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>10</td>
<td>City Boulevard East</td>
<td>The City Way</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>11</td>
<td>The City Drive</td>
<td>The City Way/Dawn Way</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>12</td>
<td>South Lewis Street</td>
<td>Lampson Ave/Metropolitan Drive</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>13</td>
<td>Entertainment Drive</td>
<td>City Boulevard West</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>14</td>
<td>Entertainment Drive</td>
<td>Metropolitan Drive</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>15</td>
<td>Designer Drive/SR-22 WB Ramps</td>
<td>Metropolitan Drive</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>16</td>
<td>The City Drive</td>
<td>Metropolitan Drive</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>17</td>
<td>The City Drive</td>
<td>SR-22 EB Ramps</td>
<td>LOS D or better</td>
</tr>
</tbody>
</table>

Notes:

NB = northbound, SB = southbound, EB = eastbound, WB = westbound
Table 19: Study Roadway Segment Performance Criteria

<table>
<thead>
<tr>
<th>No.</th>
<th>Key Roadway Segment</th>
<th>Performance Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>State College Boulevard between I-5 SB Ramps and Chapman Avenue</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>2</td>
<td>Chapman Avenue between South Lewis Street and Manchester Avenue</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>3</td>
<td>Chapman Avenue between Manchester Avenue and The City Drive</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>4</td>
<td>Chapman Avenue between The City Drive and I-5 SB Ramps</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>5</td>
<td>South Lewis Street between Chapman Avenue and Lampson Avenue</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>6</td>
<td>The City Drive between Chapman Avenue and Dawn Way</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>7</td>
<td>The City Drive between Dawn Way and Metropolitan Drive</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>8</td>
<td>Metropolitan Drive between South Lewis Street and SR-22 WB Ramps</td>
<td>LOS D or better</td>
</tr>
<tr>
<td>9</td>
<td>Metropolitan Drive between SR-22 WB Ramps and The City Drive</td>
<td>LOS D or better</td>
</tr>
</tbody>
</table>

The City of Orange and the City of Garden Grove have established the following thresholds of significance to determine whether the addition of project-generated trips results in a significant impact, and thus requires mitigation:

- A significant impact occurs at a study intersection if the addition of project generated trips causes the intersection to change from an acceptable LOS to deficient LOS.

Table 20, below summarizes the existing peak-hour service level calculations for the 17 study area intersections based on existing traffic volumes and current street geometry. Review of Table 20 indicates that all of the 17 key study intersections currently operate at an acceptable level of service during the AM and PM peak-hours. Table 21, below summarizes the existing roadway segment level of service. Review of Table 21 indicates that all of the existing roadway segments currently operate at an acceptable level of service during the AM and PM peak-hours.

Table 20: Existing Peak-hour Levels of Service

<table>
<thead>
<tr>
<th>Key Intersection</th>
<th>Time Period</th>
<th>Jurisdiction</th>
<th>Minimum Acceptable LOS</th>
<th>Control Type</th>
<th>ICU/HCM</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 State College Boulevard at Anaheim Way/I-5 NB Ramps</td>
<td>AM PM</td>
<td>Orange/Caltrans</td>
<td>D</td>
<td>5 Phase Signal</td>
<td>0.362 0.615</td>
<td>A</td>
</tr>
<tr>
<td>2 State College Boulevard at I-5 SB Ramps</td>
<td>AM PM</td>
<td>Orange/Caltrans</td>
<td>D</td>
<td>2 Phase Signal</td>
<td>0.475 0.389</td>
<td>A</td>
</tr>
<tr>
<td>3 South Lewis Street at Chapman Avenue</td>
<td>AM PM</td>
<td>Orange/Garden Grove</td>
<td>D</td>
<td>8 Phase Signal</td>
<td>0.960 0.836</td>
<td>E</td>
</tr>
<tr>
<td>4 Manchester Avenue at Chapman Avenue</td>
<td>AM PM</td>
<td>Orange</td>
<td>D</td>
<td>6 Phase Signal</td>
<td>0.590 0.550</td>
<td>A</td>
</tr>
<tr>
<td>5 The City Drive at Chapman Avenue</td>
<td>AM PM</td>
<td>Orange</td>
<td>D</td>
<td>8 Phase Signal</td>
<td>0.738 0.749</td>
<td>C</td>
</tr>
</tbody>
</table>
Table 20 (cont.): Existing Peak-hour Levels of Service

<table>
<thead>
<tr>
<th>Key Intersection</th>
<th>Time Period</th>
<th>Jurisdiction</th>
<th>Minimum Acceptable LOS</th>
<th>Control Type</th>
<th>ICU/HCM</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6  I-5 Ramps at Chapman Avenue</td>
<td>AM PM</td>
<td>Orange/Caltrans</td>
<td>D</td>
<td>4 Phase Signal</td>
<td>0.563</td>
<td>0.569</td>
</tr>
<tr>
<td>7  Rampart Street at Chapman Avenue</td>
<td>AM PM</td>
<td>Orange</td>
<td>D</td>
<td>3 Phase Signal</td>
<td>0.357</td>
<td>0.453</td>
</tr>
<tr>
<td>8  Manchester Avenue at City Boulevard West</td>
<td>AM PM</td>
<td>Orange</td>
<td>D</td>
<td>All-Way Stop</td>
<td>9.1 s/v</td>
<td>10.4 s/v</td>
</tr>
<tr>
<td>9  City Boulevard at City Boulevard West/The City Way</td>
<td>AM PM</td>
<td>Orange</td>
<td>D</td>
<td>All-Way Stop</td>
<td>9.1 s/v</td>
<td>11.5 s/v</td>
</tr>
<tr>
<td>10 City Boulevard East at The City Way</td>
<td>AM PM</td>
<td>Orange</td>
<td>D</td>
<td>All-Way Stop</td>
<td>8.3 s/v</td>
<td>9.0 s/v</td>
</tr>
<tr>
<td>11 The City Drive at The City Way/Dawn Way</td>
<td>AM PM</td>
<td>Orange</td>
<td>D</td>
<td>6 Phase Signal</td>
<td>0.487</td>
<td>0.542</td>
</tr>
<tr>
<td>12 South Lewis Street at Lampson Ave/Metropolitan Drive</td>
<td>AM PM</td>
<td>Orange/Garden Grove</td>
<td>D</td>
<td>2 Phase Signal</td>
<td>0.717</td>
<td>0.701</td>
</tr>
<tr>
<td>13 Entertainment Drive at City Boulevard West</td>
<td>AM PM</td>
<td>Orange</td>
<td>D</td>
<td>All-Way Stop</td>
<td>8.7 s/v</td>
<td>10.2 s/v</td>
</tr>
<tr>
<td>14 Entertainment Drive at Metropolitan Drive</td>
<td>AM PM</td>
<td>Orange</td>
<td>D</td>
<td>All-Way Stop</td>
<td>13.9 s/v</td>
<td>25.2 s/v</td>
</tr>
<tr>
<td>15 Designer Drive/SR-22 WB Ramps at Metropolitan Drive</td>
<td>AM PM</td>
<td>Orange/Caltrans</td>
<td>D</td>
<td>4 Phase Signal</td>
<td>0.457</td>
<td>0.546</td>
</tr>
<tr>
<td>16 The City Drive at Metropolitan Drive</td>
<td>AM PM</td>
<td>Orange</td>
<td>D</td>
<td>3 Phase Signal</td>
<td>0.477</td>
<td>0.397</td>
</tr>
<tr>
<td>17 The City Drive at SR-22 EB Ramps</td>
<td>AM PM</td>
<td>Orange/Caltrans</td>
<td>D</td>
<td>6 Phase Signal</td>
<td>0.596</td>
<td>0.629</td>
</tr>
</tbody>
</table>

Notes:
s/v = seconds per vehicle (delay)
**BOLD ICU/LOS values indicate unacceptable service level**

Table 21: Existing Roadway Segment Level of Service Summary

<table>
<thead>
<tr>
<th>Key Roadway Segment</th>
<th>Jurisdiction</th>
<th>Min. Acc. LOS</th>
<th>(1) No. of Existing Lanes</th>
<th>(2) Arterial Classification</th>
<th>(3) Existing Capacity at LOS “E”</th>
<th>(4) Existing Traffic Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 State College Boulevard between I-5 SB Ramps and Chapman Avenue</td>
<td>Orange</td>
<td>D</td>
<td>8D</td>
<td>Principal</td>
<td>75,000</td>
<td>35,011</td>
</tr>
</tbody>
</table>
Table 21 (cont.): Existing Roadway Segment Level of Service Summary

<table>
<thead>
<tr>
<th>Key Roadway Segment</th>
<th>Jurisdiction</th>
<th>Min. Acc. LOS</th>
<th>(1) No. of Existing Lanes</th>
<th>(2) Arterial Classification</th>
<th>(3) Existing Capacity at LOS “E”</th>
<th>(4) Existing Traffic Conditions</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapman Avenue between South Lewis Street and Manchester Avenue</td>
<td>Orange</td>
<td>D</td>
<td>6D</td>
<td>Major</td>
<td>56,300</td>
<td>35,227</td>
<td>B</td>
</tr>
<tr>
<td>Chapman Avenue between Manchester Avenue and The City Drive</td>
<td>Orange</td>
<td>D</td>
<td>6D</td>
<td>Major</td>
<td>56,300</td>
<td>40,804</td>
<td>C</td>
</tr>
<tr>
<td>Chapman Avenue between The City Drive and I-5 SB Ramps</td>
<td>Orange</td>
<td>D</td>
<td>6D</td>
<td>Major</td>
<td>56,300</td>
<td>48,463</td>
<td>D</td>
</tr>
<tr>
<td>South Lewis Street between Chapman Avenue and Lampson Avenue</td>
<td>Orange/Garden Grove</td>
<td>D</td>
<td>4D</td>
<td>Secondary</td>
<td>24,000</td>
<td>18,293</td>
<td>C</td>
</tr>
<tr>
<td>The City Drive between Chapman Avenue and Dawn Way</td>
<td>Orange</td>
<td>D</td>
<td>8D</td>
<td>Principal</td>
<td>75,000</td>
<td>38,115</td>
<td>A</td>
</tr>
<tr>
<td>The City Drive between Dawn Way and Metropolitan Drive</td>
<td>Orange</td>
<td>D</td>
<td>8D</td>
<td>Principal</td>
<td>75,000</td>
<td>18,589</td>
<td>A</td>
</tr>
<tr>
<td>Metropolitan Drive between South Lewis Street and SR-22 WB Ramps</td>
<td>Orange</td>
<td>D</td>
<td>4D</td>
<td>Primary</td>
<td>37,500</td>
<td>10,078</td>
<td>A</td>
</tr>
<tr>
<td>Metropolitan Drive between SR-22 WB Ramps and The City Drive</td>
<td>Orange</td>
<td>D</td>
<td>4D</td>
<td>Primary</td>
<td>37,500</td>
<td>18,836</td>
<td>A</td>
</tr>
</tbody>
</table>

Project Traffic and Future Traffic Conditions

The following are discussed further in the TIA, Appendix J (see Section 4.0 to 6.0):

- Traffic Forecasting Methodology
- Project Traffic Characteristics
- Project Traffic Generation
- Project Traffic Distribution and Assignment
- Existing Plus Project Traffic Conditions
- Future Traffic Conditions
- Ambient Traffic Growth
- Cumulative Projects Traffic Characteristics
- Year 2021 Traffic Volumes
In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed project, the status of other known development projects (cumulative projects) in the vicinity of the proposed project has been researched at the City of Orange, the City of Garden Grove, the City of Santa Ana, and the City of Anaheim. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development.

Based on research by LLG, there are 14 cumulative projects in the City of Orange, three cumulative projects in the City of Garden Grove, six cumulative projects in the City of Santa Ana, and 25 cumulative projects in the City of Anaheim within the vicinity of the subject site that have either been built, but not yet fully occupied, or are being processed for approval. These 48 cumulative projects have been included as part of the cumulative background setting.

**LOS Methodology for Future Impacts**

The ICU methodology is used to assess the operation of the signalized study area intersections within the jurisdiction of the City of Orange. Study area intersections that are stop sign controlled have been analyzed using the HCM methodology. Additionally, signalized study area intersections that are in shared jurisdiction of the City of Orange, City of Garden Grove, City of Santa Ana, and Caltrans have been analyzed using the HCM methodology as well as the ICU methodology.

**Project Trip Generation**

Trip generation represents the amount of traffic that is attracted and produced by a development. The trip generation for the project is based upon the specific land uses that have been planned for the development. The project will consist of constructing three, 4-story apartment buildings, to an existing apartment community, with a total of 167 apartment units.

Trip generation rates for the proposed project are shown in Table 22 and are based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, 2017. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

Utilizing the ITE trip generation rates shown below in Table 22 summarizes the project traffic generation forecast of daily and peak-hour trip generation for the proposed project.

**Table 22: Project Traffic Generation Forecast**

<table>
<thead>
<tr>
<th>ITE Land Use Code/Project Description</th>
<th>Daily 2-Way</th>
<th>AM Peak-hour</th>
<th>PM Peak-hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Enter</td>
<td>Exit</td>
<td>Total</td>
</tr>
<tr>
<td><strong>Generation Factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>221: Multi-family Housing (Mid-Rise, 3-10 floors) (TE/DU)</td>
<td>5.44</td>
<td>0.09</td>
<td>0.27</td>
</tr>
<tr>
<td><strong>Generation Forecast</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sites A and B (96 Apartment DU)</td>
<td>522</td>
<td>9</td>
<td>26</td>
</tr>
</tbody>
</table>
Table 22 (cont.): Project Traffic Generation Forecast

<table>
<thead>
<tr>
<th>ITE Land Use Code/ Project Description</th>
<th>Daily 2-Way</th>
<th>AM Peak-hour</th>
<th>PM Peak-hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Enter</td>
<td>Exit</td>
<td>Total</td>
</tr>
<tr>
<td>Mode Split/Internal Capture Reduction (20 percent daily/15 percent AM/20 percent PM)(^1)</td>
<td>-104</td>
<td>-1</td>
<td>-4</td>
</tr>
<tr>
<td>Subtotal</td>
<td>418</td>
<td>8</td>
<td>22</td>
</tr>
<tr>
<td>Site C (71 Apartment DU)</td>
<td>386</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td>Mode Split/Internal Capture Reduction (20 percent daily/15 percent AM/20 percent PM)(^1)</td>
<td>-77</td>
<td>-1</td>
<td>-3</td>
</tr>
<tr>
<td>Subtotal</td>
<td>309</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Total Traffic Generation Forecast</td>
<td>727</td>
<td>14</td>
<td>38</td>
</tr>
</tbody>
</table>

Notes:
\(^1\) A 20 percent, 15 percent, and 20 percent mode split/internal capture reduction has been applied to the daily, AM peak-hour, and PM peak-hour project trip generation, respectively, to account for the numerous employment and entertainment/retail/restaurant opportunities located in the immediate vicinity of the proposed project site.

As shown in Table 22, the proposed project is forecast to generate 727 daily trips, with 52 trips (14 inbound and 38 outbound) produced in the AM peak-hour and 59 trips (36 inbound and 23 outbound) produced in the PM peak-hour on a “typical” weekday. The overall project trip generation includes adjustments for mode split/internal capture.

**Project Trip Distribution and Assignment**

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of residential, employment, and recreational opportunities, and the proximity to the regional freeway system. The directional orientation of traffic was determined by evaluating existing and proposed land uses, and highways within the community.

Trip distribution patterns for this study have been based upon near-term conditions from those highway facilities that are either in place or will be contemplated over the next few years, which represents the completion and occupancy for the proposed development.

The project trip distribution assumptions were provided to City of Orange staff for review and approval prior to preparation of the traffic study.

**Existing Plus Project Traffic Conditions**

Existing Plus Project peak-hour intersection turning movement volumes were obtained by adding project trip assignment to existing traffic volumes. Table 23 summarizes Existing Plus Project Conditions at AM peak-hour and PM peak-hour LOS at the 17 study intersections for existing
plus project traffic conditions. Column (1) of ICU/LOS and HCM/LOS values presents a summary of existing AM and PM peak-hour traffic conditions, and column (2) lists existing plus project traffic conditions.

**Table 23: Existing Plus Project Peak-hour Intersection Capacity Analysis**

<table>
<thead>
<tr>
<th>Key Intersections</th>
<th>Time Period</th>
<th>Minimum Acceptable LOS</th>
<th>(1) Existing Traffic Conditions</th>
<th>(2) Existing Plus Project Traffic Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>ICU/HCM</td>
<td>LOS</td>
</tr>
<tr>
<td>1 State College Boulevard at Anaheim Way/I-5 NB Ramps</td>
<td>AM</td>
<td>D</td>
<td>0.362</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.615</td>
<td>B</td>
</tr>
<tr>
<td>2 State College Boulevard at I-5 SB Ramps</td>
<td>AM</td>
<td>D</td>
<td>0.475</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.389</td>
<td>A</td>
</tr>
<tr>
<td>3 South Lewis Street at Chapman Avenue</td>
<td>AM</td>
<td>D</td>
<td>0.960</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.836</td>
<td>D</td>
</tr>
<tr>
<td>4 Manchester Avenue at Chapman Avenue</td>
<td>AM</td>
<td>D</td>
<td>0.590</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.550</td>
<td>A</td>
</tr>
<tr>
<td>5 The City Drive at Chapman Avenue</td>
<td>AM</td>
<td>D</td>
<td>0.738</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.749</td>
<td>C</td>
</tr>
<tr>
<td>6 I-5 Ramps at Chapman Avenue</td>
<td>AM</td>
<td>D</td>
<td>0.563</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.569</td>
<td>A</td>
</tr>
<tr>
<td>7 Rampart Street at Chapman Avenue</td>
<td>AM</td>
<td>D</td>
<td>0.357</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.453</td>
<td>A</td>
</tr>
<tr>
<td>8 Manchester Avenue at City Boulevard West</td>
<td>AM</td>
<td>D</td>
<td>9.1 s/v</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>10.4 s/v</td>
<td>B</td>
</tr>
<tr>
<td>9 City Boulevard at City Boulevard West/The City Way</td>
<td>AM</td>
<td>D</td>
<td>9.1 s/v</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>11.5 s/v</td>
<td>B</td>
</tr>
<tr>
<td>10 City Boulevard East at The City Way</td>
<td>AM</td>
<td>D</td>
<td>8.3 s/v</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>9.0 s/v</td>
<td>A</td>
</tr>
<tr>
<td>11 The City Drive at The City Way/Dawn Way</td>
<td>AM</td>
<td>D</td>
<td>0.487</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.542</td>
<td>A</td>
</tr>
<tr>
<td>12 South Lewis Street at Lampson Avenue/Metropolitan Drive</td>
<td>AM</td>
<td>D</td>
<td>0.717</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.701</td>
<td>C</td>
</tr>
<tr>
<td>13 Entertainment Drive at City Boulevard West</td>
<td>AM</td>
<td>D</td>
<td>8.7 s/v</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>10.2 s/v</td>
<td>B</td>
</tr>
</tbody>
</table>
Table 23 (cont.): Existing Plus Project Peak-hour Intersection Capacity Analysis

<table>
<thead>
<tr>
<th>Key Intersections</th>
<th>Time Period</th>
<th>Minimum Acceptable LOS</th>
<th>(1) Existing Traffic Conditions</th>
<th>(2) Existing Plus Project Traffic Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU/HCM</td>
<td>LOS</td>
<td>ICU/HCM</td>
<td>LOS</td>
<td>ICU/HCM</td>
</tr>
<tr>
<td>14 Entertainment Drive at Metropolitan Drive</td>
<td>AM</td>
<td>D</td>
<td>13.9 s/v</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>25.2 s/v</td>
<td>D</td>
</tr>
<tr>
<td>15 Designer Drive/SR-22 WB Ramps at Metropolitan Drive</td>
<td>AM</td>
<td>D</td>
<td>0.457</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.546</td>
<td>A</td>
</tr>
<tr>
<td>16 The City Drive at Metropolitan Drive</td>
<td>AM</td>
<td>D</td>
<td>0.477</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.397</td>
<td>A</td>
</tr>
<tr>
<td>17 The City Drive at SR-22 EB Ramps</td>
<td>AM</td>
<td>D</td>
<td>0.596</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.629</td>
<td>B</td>
</tr>
</tbody>
</table>

Notes:
s/v = seconds per vehicle (delay)
**BOLD ICU/LOS** values indicate unacceptable service level

Table 24 summarizes the roadway segment level of service results at the nine key roadway segments for existing plus project traffic conditions. Column (2) lists existing plus project daily traffic conditions. Column (2) also shows the increase in V/C ratio value due to the added daily project trips, and indicates whether the traffic associated with the project will have a significant impact based on the LOS standards and significant impact criteria defined in this report.

Table 24: Existing Plus Project Roadway Segment Level of Service Summary

<table>
<thead>
<tr>
<th>Key Roadway Segment</th>
<th>Min. Acc. LOS</th>
<th>Daily Volume</th>
<th>V/C Ratio</th>
<th>LOS</th>
<th>Inc.</th>
<th>Adverse (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 State College Boulevard between I-5 SB Ramps and Chapman Avenue</td>
<td>D</td>
<td>35,215</td>
<td>0.470</td>
<td>A</td>
<td>0.003</td>
<td>No</td>
</tr>
<tr>
<td>2 Chapman Avenue between South Lewis Street and Manchester Avenue</td>
<td>D</td>
<td>35,464</td>
<td>0.630</td>
<td>B</td>
<td>0.004</td>
<td>No</td>
</tr>
<tr>
<td>3 Chapman Avenue between Manchester Avenue and The City Drive</td>
<td>D</td>
<td>41,313</td>
<td>0.734</td>
<td>C</td>
<td>0.009</td>
<td>No</td>
</tr>
<tr>
<td>4 Chapman Avenue between The City Drive and I-5 SB Ramps</td>
<td>D</td>
<td>48,769</td>
<td>0.866</td>
<td>D</td>
<td>0.005</td>
<td>No</td>
</tr>
<tr>
<td>Key Roadway Segment</td>
<td>Min. Acc. LOS</td>
<td>Daily Volume</td>
<td>V/C Ratio</td>
<td>LOS</td>
<td>Inc.</td>
<td>Adverse (Yes/No)</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>-----------</td>
<td>-----</td>
<td>------</td>
<td>-----------------</td>
</tr>
<tr>
<td>5 South Lewis Street between Chapman Avenue and Lampson Avenue</td>
<td>D</td>
<td>18,602</td>
<td>0.775</td>
<td>C</td>
<td>0.013</td>
<td>No</td>
</tr>
<tr>
<td>6 The City Drive between Chapman Avenue and Dawn Way</td>
<td>D</td>
<td>38,115</td>
<td>0.508</td>
<td>A</td>
<td>0.000</td>
<td>No</td>
</tr>
<tr>
<td>7 The City Drive between Dawn Way and Metropolitan Drive</td>
<td>D</td>
<td>18,641</td>
<td>0.249</td>
<td>A</td>
<td>0.001</td>
<td>No</td>
</tr>
<tr>
<td>8 Metropolitan Drive between South Lewis Street and SR-22 WB Ramps</td>
<td>D</td>
<td>10,161</td>
<td>0.271</td>
<td>A</td>
<td>0.002</td>
<td>No</td>
</tr>
<tr>
<td>9 Metropolitan Drive between SR-22 WB Ramps and The City Drive</td>
<td>D</td>
<td>18,875</td>
<td>0.503</td>
<td>A</td>
<td>0.001</td>
<td>No</td>
</tr>
</tbody>
</table>

**Project Completion (Year 2021) With Project Conditions Traffic Conditions**

Project traffic has been added to background traffic volumes on surrounding roadways, traffic from cumulative projects, and area-wide growth to derive Project Completion (Year 2021) With Project Conditions traffic volumes. Table 25 and Table 26 summarize the Project Completion Year (2021) With Project Conditions AM peak-hour and PM peak-hour LOS of the study intersections.

Table 26 indicates that traffic associated with the proposed project would not significantly impact any of the 17 key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Column (1) lists projected cumulative traffic conditions (existing plus ambient traffic plus cumulative project traffic) based on existing intersection geometry, but without any traffic generated from the proposed project. Column (2) presents forecast Year 2021 near-term traffic conditions with the addition of project traffic.
<table>
<thead>
<tr>
<th>Key Intersections</th>
<th>Time Period</th>
<th>Minimum Acceptable LOS</th>
<th>(1) Existing Traffic Conditions</th>
<th>(2) Year 2021 Cumulative Traffic Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>ICU/HCM</td>
<td>LOS</td>
</tr>
<tr>
<td>1 State College Boulevard at Anaheim Way/I-5 NB Ramps</td>
<td>AM</td>
<td>D</td>
<td>0.362</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.615</td>
<td>B</td>
</tr>
<tr>
<td>2 State College Boulevard at I-5 SB Ramps</td>
<td>AM</td>
<td>D</td>
<td>0.475</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.389</td>
<td>A</td>
</tr>
<tr>
<td>3 South Lewis Street at Chapman Avenue</td>
<td>AM</td>
<td>D</td>
<td>0.960</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.836</td>
<td>D</td>
</tr>
<tr>
<td>4 Manchester Avenue at Chapman Avenue</td>
<td>AM</td>
<td>D</td>
<td>0.590</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.550</td>
<td>A</td>
</tr>
<tr>
<td>5 The City Drive at Chapman Avenue</td>
<td>AM</td>
<td>D</td>
<td>0.738</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.749</td>
<td>C</td>
</tr>
<tr>
<td>6 I-5 Ramps at Chapman Avenue</td>
<td>AM</td>
<td>D</td>
<td>0.563</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.569</td>
<td>A</td>
</tr>
<tr>
<td>7 Rampart Street at Chapman Avenue</td>
<td>AM</td>
<td>D</td>
<td>0.357</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.453</td>
<td>A</td>
</tr>
<tr>
<td>8 Manchester Avenue at City Boulevard West</td>
<td>AM</td>
<td>D</td>
<td>9.1 s/v</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>10.4 s/v</td>
<td>B</td>
</tr>
<tr>
<td>9 City Boulevard at City Boulevard West/The City Way</td>
<td>AM</td>
<td>D</td>
<td>9.1 s/v</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>11.5 s/v</td>
<td>B</td>
</tr>
<tr>
<td>10 City Boulevard East at The City Way</td>
<td>AM</td>
<td>D</td>
<td>8.3 s/v</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>9.0 s/v</td>
<td>A</td>
</tr>
<tr>
<td>11 The City Drive at The City Way/The City Way</td>
<td>AM</td>
<td>D</td>
<td>0.487</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.542</td>
<td>A</td>
</tr>
<tr>
<td>12 South Lewis Street at Lampson Avenue/Metropolitan Drive</td>
<td>AM</td>
<td>D</td>
<td>0.717</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.701</td>
<td>C</td>
</tr>
<tr>
<td>13 Entertainment Drive at City Boulevard West</td>
<td>AM</td>
<td>D</td>
<td>8.7 s/v</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>10.2 s/v</td>
<td>B</td>
</tr>
<tr>
<td>14 Entertainment Drive at Metropolitan Drive</td>
<td>AM</td>
<td>D</td>
<td>13.9 s/v</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>25.2 s/v</td>
<td>D</td>
</tr>
<tr>
<td>15 Designer Drive/SR-22 WB Ramps at Metropolitan Drive</td>
<td>AM</td>
<td>D</td>
<td>0.457</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.546</td>
<td>A</td>
</tr>
</tbody>
</table>
Table 25 (cont.): Year 2021 Peak-hour Intersection Capacity Analysis

<table>
<thead>
<tr>
<th>Key Intersections</th>
<th>Time Period</th>
<th>Minimum Acceptable LOS</th>
<th>(1) Existing Traffic Conditions</th>
<th>(2) Year 2021 Cumulative Traffic Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>ICU/HCM</td>
<td>LOS</td>
</tr>
<tr>
<td>16 The City Drive at Metropolitan Drive</td>
<td>AM</td>
<td>D</td>
<td>0.477 A</td>
<td>0.541 A</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.397 A</td>
<td>0.456 A</td>
</tr>
<tr>
<td>17 The City Drive at SR-22 EB Ramps</td>
<td>AM</td>
<td>D</td>
<td>0.596 A</td>
<td>0.682 B</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>0.629 B</td>
<td>0.725 C</td>
</tr>
</tbody>
</table>

Notes:
1. The LOS calculations for this intersection include improvements assumed as part of the City Plaza cumulative project. Refer to Section 12.1 (planned improvements).
2. s/v = seconds per vehicle (delay)
3. **BOLD ICU/LOS** values indicate unacceptable service level

Table 26 summarizes the roadway segment level of service results at the nine key roadway segments for Year 2021 traffic conditions. Column (2) presents a summary of projected Year 2021 cumulative daily traffic conditions. Column (3) lists Year 2021 plus project daily traffic conditions Column (3) additionally shows the increase in V/C ratio value due to the added daily project trips and indicates whether the traffic associated with the project will have a significant impact based on the LOS standards and significant impact criteria defined in this report.

Table 26: Year 2021 Roadway Segment Level of Service Summary

<table>
<thead>
<tr>
<th>Key Roadway Segment</th>
<th>Min. Acc. LOS</th>
<th>(2) Year 2021 Cumulative Traffic Conditions</th>
<th>(3) Year 2021 Cumulative Plus Project Traffic Conditions</th>
<th>Adverse (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A State College Boulevard between I-5 SB Ramps and Chapman Avenue</td>
<td>D 49,092</td>
<td>0.655 B 49,296</td>
<td>0.657 B 0.002 No</td>
<td>No</td>
</tr>
<tr>
<td>B Chapman Avenue between South Lewis Street and Manchester Avenue</td>
<td>D 45,962</td>
<td>0.816 D 46,199</td>
<td>0.821 D 0.005 No</td>
<td>No</td>
</tr>
<tr>
<td>C Chapman Avenue between Manchester Avenue and The City Drive</td>
<td>D 52,154</td>
<td>0.926 E 52,663</td>
<td>0.935 E 0.009 No</td>
<td>No</td>
</tr>
<tr>
<td>D Chapman Avenue between The City Drive and I-5 SB Ramps</td>
<td>D 57,389</td>
<td>1.019 F 57,695</td>
<td>1.025 F 0.006 No</td>
<td>No</td>
</tr>
<tr>
<td>E South Lewis Street between Chapman Avenue and Lampson Avenue</td>
<td>D 21,136</td>
<td>0.881 D 21,445</td>
<td>0.894 D 0.013 No</td>
<td>No</td>
</tr>
</tbody>
</table>
Table 26 (cont.): Year 2021 Roadway Segment Level of Service Summary

<table>
<thead>
<tr>
<th>Key Roadway Segment</th>
<th>Min. Acc.</th>
<th>LOS</th>
<th>Daily Volume</th>
<th>V/C Ratio</th>
<th>LOS</th>
<th>Daily Volume</th>
<th>V/C Ratio</th>
<th>LOS</th>
<th>Inc.</th>
<th>Adverse (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F The City Drive between Chapman Avenue and Dawn Way</td>
<td>D</td>
<td></td>
<td>47,806</td>
<td>0.637</td>
<td>B</td>
<td>47,806</td>
<td>0.637</td>
<td>B</td>
<td>0.000</td>
<td>No</td>
</tr>
<tr>
<td>G The City Drive between Dawn Way and Metropolitan Drive</td>
<td>D</td>
<td></td>
<td>26,407</td>
<td>0.352</td>
<td>A</td>
<td>26,459</td>
<td>0.353</td>
<td>A</td>
<td>0.001</td>
<td>No</td>
</tr>
<tr>
<td>H Metropolitan Drive between South Lewis Street and SR-22 WB Ramps</td>
<td>D</td>
<td></td>
<td>11,690</td>
<td>0.312</td>
<td>A</td>
<td>11,773</td>
<td>0.314</td>
<td>A</td>
<td>0.002</td>
<td>No</td>
</tr>
<tr>
<td>I Metropolitan Drive between SR-22 WB Ramps and The City Drive</td>
<td>D</td>
<td></td>
<td>22,367</td>
<td>0.596</td>
<td>A</td>
<td>22,406</td>
<td>0.597</td>
<td>A</td>
<td>0.001</td>
<td>No</td>
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Impact Analysis

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

A significant impact may occur if roadways and intersections that would carry project-generated traffic would exceed adopted City of Orange thresholds of significance. As stated in the TIA (Appendix J) the project is not anticipated to result in a significant impact on the study area intersections under existing and future traffic conditions, based on the City of Orange and the City of Garden Grove’s Significance Criteria. One of the 17 key study intersections evaluated for this project currently operates at an unacceptable level of service during the AM peak-hour. The intersection of South Lewis Street at Chapman Avenue currently operates at unacceptable LOS E during the AM peak-hour. The remaining 16 key study intersections currently operate at acceptable LOS D or better during the AM and PM peak-hours. All nine key roadway segments currently operate at acceptable LOS D or better on a daily basis.

Existing Plus Project Traffic Conditions, Key Intersections and Key Roadways

The proposed project would not significantly affect any of the 17 key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of South Lewis Street at Chapman Avenue is forecast to operate at an unacceptable LOS E during the AM peak-hour with the addition of project traffic, the proposed
project is expected to add less than the allowable threshold to the ICU value. The remaining 16 key study intersections currently operate and are forecast to continue to operate at an acceptable LOS D or better during the AM and PM peak-hours with the addition of project generated traffic to existing traffic.

The proposed project would not significantly impact any of the nine key roadway segments when compared to the LOS standards and significant impact criteria specified in this report. The nine key roadway segments currently operate and are forecast to continue to operate at an acceptable service level on a daily basis with the addition of project-generated traffic to existing traffic.

**Year 2021 Plus Project Traffic Conditions, Key Intersections and Key Roadways**

The proposed project would not significantly affect any of the 17 key study intersections, when compared to the LOS standards and significant impact criteria specified in the TIA. Although the intersection of South Lewis Street at Chapman Avenue is forecast to operate at an unacceptable LOS E or F during the AM and/or PM peak-hours with the addition of project traffic, the proposed project is expected to add less than the allowable threshold to the ICU value. The remaining 16 key study intersections currently operate and are forecast to continue to operate at an acceptable LOS D or better during the AM and PM peak-hours with the addition of project-generated traffic to Year 2021 cumulative traffic.

The project would not conflict with any applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Thus, the project would result in less than significant impacts on traffic/circulation and the surrounding roadway network, and no mitigation is required.

**Significance Determination: Less than significant impact.**

**Mitigation Measures: No mitigation measures are required.**

**Significance Determination After Mitigation: Less than significant.**

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

A significant impact may occur if the adopted OCTA thresholds for a significant project impact would be exceeded. The Orange County CMP requires review of substantial individual projects, which might on their own impact the CMP transportation system. Specifically, the Orange County CMP TIA measures impacts of a project on the CMP Highway System. According to engineers from LLG, the TIA of the project is consistent with requirements and procedures outlined in the current Orange County CMP. The CMP requires that a TIA be conducted for any project generating 2,400 or more daily trips, or 1,600 or more daily trips for projects that directly access the CMP Highway System. Per the CMP guidelines, this number is based on the desire to
analyze any impacts that will be 3 percent or more of the existing CMP highway system facilities’ capacity.

The proposed project is expected to generate 727 daily trips, and thus does not meet the criteria required for a CMP traffic analysis. Therefore, the proposed project would have less than significant traffic impacts on the CMP Highway System.

**Significance Determination:** Less than significant impact.  
**Mitigation Measures:** No mitigation measures are required.  
**Significance Determination After Mitigation:** Less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

This question would apply to the project only if it were an aviation-related use. The project site is neither located within an airport land use plan, nor within two miles of a public airport. The nearest public use airports to the project site are John Wayne Airport and Fullerton Municipal Airport, approximately 7.01 miles south and 7.47 miles northwest of the project site, respectively. The project site is located outside the most commonly used take-off and landing patterns of the airport. No impact would occur.

**Significance Determination:** No impact.  
**Mitigation Measures:** No mitigation measures are required.  
**Significance Determination After Mitigation:** No impact.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

A significant impact may occur if a project were to include a new roadway design, introduce a new land use or project features into an area with specific transportation requirements and characteristics that have not been previously experienced in that area, or if project access or other features were designed in such a way as to create hazardous conditions. Based on the project’s traffic analysis, the project driveways are forecast to operate at acceptable LOS C or better during the AM and PM peak-hours for Year 2021 traffic conditions. As such, project access would be adequate. According to the TIA, motorists entering and exiting the project site will be able to do so comfortably, safely, and without undue congestion.

The on-site circulation layout of the proposed project on an overall basis is adequate. Curb return radii have been confirmed by LLG to be generally adequate for small service/delivery (FedEx, UPS) trucks and trash trucks.

Furthermore, all drive aisles and access points would be required to conform with design standards and would be reviewed by the City of Orange as part of the development review process. Wherever necessary, roadways adjacent to the project, site access points and site-adjacent intersections would be constructed to be consistent with the identified roadway
classifications and respective cross-sections in the City of Orange General Plan Circulation Element.

On-site traffic signing and striping would be implemented in conjunction with detailed construction plans for the project site.

Sight distance at each project access point should be reviewed with respect to standard Caltrans and City of Orange sight distance standards at the time of preparation of final grading, landscape and street improvement plans.

Therefore, impacts to design features and incompatible uses would be less than significant.

**Significance Determination: Less than significant impact.**  
**Mitigation Measures: No mitigation measures are required.**  
**Significance Determination After Mitigation: Less than significant.**

e) **Result in inadequate emergency access?**

A significant impact may occur if a project design would not provide emergency access meeting the requirements of the OCFD, or in any other way threatened the ability of emergency vehicles to access and serve the project site. Emergency access would be provided via City Boulevard West and along South Lewis Street. Internal streets would also provide vehicular access to the project site. Additionally, the project plans would be reviewed and approved by the City of Orange Building and Fire Departments, which would ensure adequate emergency access, fire hydrant availability, and compliance with all applicable codes and standards. All internal drive aisles would be subject to California Fire Code requirements, including provisions associated with minimum width and prohibition on parking (where necessary). As such, adequate emergency access would be provided and impacts would be less than significant and no mitigation is necessary.

**Significance Determination: Less than significant impact.**  
**Mitigation Measures: No mitigation measures are required.**  
**Significance Determination After Mitigation: Less than significant.**

f) **Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?**

A significant impact may occur if a project would conflict with adopted policies or involve modification of existing alternative transportation facilities located on- or off-site. The OCTA currently provides public transit services within the City of Orange. OCTA Routes 47, 54, and 57 are located less than a 0.5-mile radius from the project site. There are no bus stops located directly in front of the project site on City Boulevard West or South Lewis Street. The OCTA routes within a 0.5-mile radius of the project site run along Chapman Avenue, The City Drive, and Metropolitan Drive.
The project would not alter any sidewalks or bike lanes. Existing pedestrian facilities, such as sidewalks, are currently provided along South Lewis Street, City Boulevard West, and The City Way in addition to the existing internal sidewalks.

There are no existing designated bicycle facilities within the project site. There are two Class II bike lanes along Chapman Avenue and Lampson Avenue, and a Class I bike path along the Santa Ana River Trail within a 0.5-mile radius of the project site. As shown in Figure 3, the overall project has a pedestrian-oriented design and improves the pedestrian circulation system and experience over existing conditions. The proposed project would not alter or remove any pedestrian or bicycle facility within vicinity of the project site. Impacts are considered less than significant and no mitigation is necessary.

**Significance Determination**: Less than significant impact.
**Mitigation Measures**: No mitigation measures are required.
**Significance Determination After Mitigation**: Less than significant.
17. TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

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<tr>
<th>Impact Level</th>
<th>Potentially Significant Impact</th>
<th>Less than Significant With Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tbody>
<tr>
<td>(a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).</td>
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<tr>
<td>(b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.</td>
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Environmental Setting

This section describes the potential effects from project implementation on the project site and its surrounding area. Descriptions and analysis in this section are based on information provided by the NAHC, SCCIC, and California State University, Fullerton, California. To identify any historic properties or resources, the current inventories of the NRHR, the CRHR, the CHL, the CPHI list, the HRI for Orange County, and the University of California Museum of Paleontology Paleontological Database, as well as a site visit. Supporting information is provided in Appendix D.

Tribal Cultural Resources

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

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or

A significant impact would occur if the Project would result in a substantial adverse change in the significance of a tribal cultural resource including, but not limited to: sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe and that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).

On August 15, 2017, FCS sent a letter to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File within the project area. A response from the NAHC was received on August 23, 2017, indicating that the Sacred Lands File search indicated a negative
result for Native American cultural resources in the immediate project area, and that tribal representatives should be contacted for additional information. The NAHC included a list of local tribal representatives available for consultation. To ensure that all Native American knowledge and potential prehistoric concerns about the project are addressed, a letter containing project information and requesting any additional information was sent to each tribal representative. No responses have been received to date, and no TCRs have been identified as having the potential to be adversely affected by the project. Accordingly, this would be a potentially significant impact. Should undiscovered TCRs such as Native American artifacts or burials be encountered during project construction, implementation of MM CUL-1, MM CUL-3, and MM TRIBAL-1 (requiring compliance with Public Resources Code Section 5097.98 for the designation of most likely descendant), would help to ensure that impacts to tribal cultural resources are reduced to a less-than-significant level. Impacts would be less than significant with the implementation of mitigation.

Significance Determination: Less than significant impact with mitigation incorporated.
Mitigation Measures: MM CUL-1, MM CUL-3, and MM TRIBAL-1

MM TRIBAL-1 The NAHC shall be responsible for designating the most likely descendant, who shall be responsible for the ultimate disposition of the remains, as required by Public Resources Code Section 5097.98. The most likely descendant shall make their recommendations within 48 hours of having been notified by the NAHC.

Significance Determination After Mitigation: Less than significant.

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

A significant impact would occur if the project would result in a substantial adverse change in the significance of a tribal cultural resource including, but not limited to: sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe. AB 52 established a formal consultation process for California Native American tribes to identify potential significant impacts to Tribal Cultural Resources, as defined in Public Resources Code Section 21074, as part of CEQA. As specified in AB 52, lead agencies must provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a project if the tribe has submitted a written request to be notified.

AB 52 requires meaningful consultation with California Native American Tribes on potential impacts to TCRs, as defined in Public Resources Code Section 21074. TCRs are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either eligible or listed in the California Register of Historical Resources or local register of historical resources (CNRA 2016).
As part of the AB 52 process, Native American tribes must submit a written request to the relevant lead agency (in this case, the City of Orange) if it wishes to be notified of projects within 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 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 within 30 days of receipt of the notification if it wishes to engage in consultation on the project. 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 significant effect, if one exists, on a TCR, 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 Public Resources Code Section 21082.3(C).

To date, two tribes (Gabrieleño/Tongva Band of Mission Indians and Juaneño Band of Mission Indians Acjachemen Nation) have requested to be included on the City’s AB 52 consultation list, which is a list of potential tribes the City maintains for consultation purposes for mitigating potential impacts to TCRs under CEQA. A letter was sent to each of the tribes on September 14, 2017, which requested comments and responses from the tribes. To date, one response from the Gabrieleño Band of Mission Indians was received regarding the City’s AB 52 consultation letter on September 25, 2017 (See Appendix B.3: Native American Information Request Letter Responses included in Appendix D: Cultural Resources Assessment).

Additionally, as shown in Figure CR-1 (Designated Historic Resources) of the City’s General Plan Cultural Resources and Historic Preservation Element, there are no listed or designated historic resources on-site or within the vicinity of the project site; most of the resources identified are in the Old Towne Historic District and Plaza Historic District in the eastern part of the City. The project site has not been selected as a site recommended for historic designation, as shown in Figure CR-2 (Resources Recommended for Designation) of the City’s General Plan Cultural Resources and Historic Preservation Element. Furthermore, the project site and existing office buildings are not identified on any of the historic resource lists/databases—the NRHR and the California State Historical Landmarks, CPHI list, and Register of Historic Places.

Finally, no sites were documented in the NAHC’s sacred lands file search conducted for the USGS quadrangle that encompasses the project site. There are also no resources on-site determined by the City to be significant pursuant to criteria set forth in subdivision (c) of the Public Resources Code 5024.1. However, while unlikely, the inadvertent find of tribal cultural resources during project construction activities is possible. Accordingly, the inadvertent find of a tribal cultural resource would be a potentially significant impact. Should undiscovered TCRs such as Native American artifacts or burials be encountered during project construction, implementation of MM CUL-1, MM CUL-3, and MM TRIBAL-1 (requiring compliance with Public Resources Code Section 5097.98 for the designation of most likely descendant), would
help to ensure that impacts to tribal cultural resources are reduced to a less-than-significant level. Impacts would be less than significant with the implementation of mitigation.

**Significance Determination:** Less than significant impact with mitigation incorporated.  
**Mitigation Measures:** MM CUL-1, MM CUL-3, and MM TRIBAL-1  
**Significance Determination After Mitigation:** Less than significant.
18. UTILITIES/SERVICE SYSTEMS

Would the project:

<table>
<thead>
<tr>
<th>(a)</th>
<th>Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?</th>
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<tbody>
<tr>
<td>(b)</td>
<td>Require or result in the construction of new water or wastewater treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</td>
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<td>(c)</td>
<td>Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</td>
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<td>(d)</td>
<td>Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?</td>
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<td>(e)</td>
<td>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?</td>
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<td>(f)</td>
<td>Be served by a landfill with insufficient permitted capacity to accommodate the project’s solid waste disposal needs?</td>
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<tr>
<td>(g)</td>
<td>Comply with federal, State, and local statutes and regulations related to solid wastes?</td>
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<td>(h)</td>
<td>Have significant effects on energy resources as described in Appendix F of the CEQA Guidelines?</td>
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<th>Potentially Significant Impact</th>
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facilities, Reclamation Plant No. 1 in the City of Fountain Valley and Treatment Plant No. 2 in the City of Huntington Beach, would receive wastewater generated from the apartment complex of the proposed project (OCSD 2018). Both plants provide a mix of advanced primary and secondary treatment. OCSD is required by federal and State law to meet applicable standards of treatment plant discharge requirements. Specifically, the OCSD wastewater treatment system is subject to NPDES Permit No. CA0110604 issued by the Santa Ana RWQCB in 2012 under Order No. R8-2012-0035 (Santa Ana RWQCB 2012). The NPDES permit regulates the amount and type of pollutants that the system can discharge into receiving waters. OCSD’s wastewater treatment system is operating in compliance with and would continue to operate subject to State waste discharge requirements and federal NPDES permit requirements, as set forth in the NPDES permit and order.

The wastewater (quantity and type) that would be generated by the proposed project and treated by OCSD would not impede OCSD’s ability to continue to meet its wastewater treatment requirements. Impacts on OCSD’s wastewater treatment requirements are considered less than significant and no mitigation measures are necessary.

**Significance Determination:** Less than significant impact.

**Mitigation Measures:** No mitigation measures are required.

**Significance Determination After Mitigation:** Less than significant.

**b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

A significant impact may occur if a project would increase water consumption or wastewater generation to such a degree that the capacity of facilities currently serving the project site would be exceeded. The proposed project would be served by the OCSD, which has adequate treatment capacity to serve the project’s effluent. The proposed project would also be served by the City’s Public Works Water Division, which provided potable water service from two main sources: about 70 percent of its water supply from the Orange County Groundwater Basin, which is managed by the OCWD, and about 30 percent of its water supply from imported water from the Metropolitan Water District of Southern California (MWD) through the Municipal Water District of Orange County (MWDOC).

Based on the City’s 2015 Urban Water Management Plan (UWMP), a baseline water use of 224 gallons per capita per day (GPCD) was reported. There would be an estimated 513 new residents on the project site as a result of the proposed project. Using this new resident number, water demand for the proposed project would be approximately 114,912 gallons per day, or approximately 128.72 acre-feet per year (AFY) (City of Orange 2015). Under normal conditions, the 2015 UWMP predicts a total Citywide water demand of 28,000 AFY in 2020, and 29,500 AFY in 2030 (City of Orange 2015).
Water Treatment System

The City of Orange Public Works Water Division provides potable water service (which includes imported water, groundwater, and surface water) to land uses within the City and would provide potable water for the uses under the proposed project. Water imported by the MWD is treated at the Robert Diemer Filtration Plant in the City of Yorba Linda, which has capacity of 520 million gallons per day (MWD 2018). Water treatment facilities filter and/or disinfect water before it is delivered to customers. Once treated, the water is supplied to the City’s Public Works Water Division through eight imported water connections (City of Orange 2015).

Part of the potable water supplied to the project site would come from MWD’s imported water, which would be required to be treated at the Robert Diemer Filtration Plant before being delivered to the City’s Public Works Water Division and eventually to the project site. Based on the capacity of the Robert Diemer Filtration Plant noted above, there is adequate water treatment capacity in the region for the proposed project’s forecast water demand. Therefore, project development would not require the construction of new or expanded water treatment facilities. No significant impacts would occur and no mitigation measures are necessary.

Wastewater Treatment System

The OCSD provides wastewater treatment for the City of Orange via two reclamation plants: Reclamation Plant No. 1 in Fountain Valley and Treatment Plant No. 2 in Huntington Beach. Reclamation Plant No. 1 has a capacity of 204 million gallons per day (mgd) for advanced primary and secondary treatment; the plant treats an average of 97 mgd, and the remaining capacity at this plant is approximately 107 mgd (OCSD 2013). Current capacity for Treatment Plant No. 2 is 168 mgd of primary treated wastewater and 150 mgd of secondary treated wastewater. The current average flow of primary treated wastewater is 103 mgd; therefore, remaining capacity at this plant is approximately 67 mgd (OCSD 2013).

Furthermore, the estimated water demand for the proposed project does not take into account the water-saving measures that the City would require in order to achieve a water reduction target required by the State Water Control Resources Board for the City in response to California’s current drought condition. Therefore, the proposed project would not require or result in the construction or expansion of water facilities and impacts are considered less than significant.

Significance Determination: Less than significant impact.
Mitigation Measures: No mitigation measures are required.
Significance Determination After Mitigation: Less than significant.
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

A significant impact may occur if the volume of stormwater runoff increases to a level exceeding the capacity of the storm drain system serving the project site or if a project would substantially increase the probability that polluted runoff would reach the storm drain system.

The project site is relatively flat and allows stormwater runoff to sheet flow away from the existing, three-story, above grade apartments over landscape and hardscape. The single-level subterranean parking lots under each new apartment building would incorporate a trench drain at the bottom of the driveway to drain any runoff that sheet flows over driveways. Generally, the northerly portion of the project is at a slightly higher elevation, and the southerly portion of the project is at a slightly lower elevation, creating overland flow in a north to south direction (Appendix G). This existing condition allows runoff to occur over asphalt pavement, concrete walks, landscape areas, and other common areas such as tennis court areas towards on-site area drains that discharge to an on-site storm drain facility owned by the City of Orange illustrated in Appendix C, Basemap of Drainage Facilities in Orange County, Map 21. The City-owned, on-site storm drain facility begins as a 24-inch diameter pipe at the northernmost portion and leaves the site as a 33-inch diameter pipe along an 8-foot easement due west towards South Lewis Street. The off-site receiving waters include the City-owned 45-inch diameter pipe along South Lewis Street, which conveys stormwater due south towards the Lewis Storm Channel, or Channel 5 (C05SII), and the downstream East Garden Grove Wintersburg Channel, both owned and maintained by the Orange County Flood Control District. The on-site, north-south drive aisle currently allows runoff to discharge off-site at the southerly face of the drive aisle via an existing curb and gutter. The runoff continues south towards a curb inlet adjacent to City Parkway West and discharges into the Lewis Storm Channel at an upstream location further east.

Both the City and the County are responsible for managing the storm drain and flood control facilities in the City. Currently, there are storm drainage facilities on the project site, which are sufficient to capture stormwater. The post-development drainage conditions at the surface would mostly mimic those of the existing conditions. Development of the project would result in an 8 percent increase in impervious surfaces due to the removal of pervious landscaping to provide for impervious building structures. At the surface level, the site would drain away from existing and proposed buildings towards site gutters and catch basins. As part of the proposed project, stormwater runoff from the new project features would be conveyed into hydrodynamic separation devices as pretreatment measures and then to shallow, perforated corrugated metal pipes for treatment via below-grade infiltration. Overflow from these areas would be diverted into the existing, on-site storm drain system via an overflow pipe. The proposed treatment system would be independent of the existing on-site storm drain system, and overflow would build up within the new treatment system and create a “bubbler” condition at the proposed catch basins. The on-site curb and gutters would allow the overflow runoff to travel downstream and...
off-site to mimic the existing condition. The proposed storm drain infrastructure improvements are described in detail in Appendix H.

The construction of new, or the expansion of these existing storm drain features as the result of the proposed project is not anticipated. Impacts would be less than significant.

**Significance Determination:** Less than significant impact.  
**Mitigation Measures:** No mitigation measures are required.  
**Significance Determination After Mitigation:** Less than significant.

d) Have sufficient water supplies available to serve the Project (including large-scale developments as defined by Public Resources Code Section 21151.9 and described in Question No. 20 of the Environmental Information Form) from existing entitlements and resources, or are new or expanded entitlements needed?

A significant impact may occur if a project were to increase water consumption to such a degree that new water sources would need to be identified, or that existing resources would be consumed at a pace greater than planned for by purveyors, distributors, and service providers. The City of Orange Public Works Water Division provides potable water service to land uses within the City and would provide potable water for the uses under the proposed project. As seen in Table 27, the City’s main sources of water supply are groundwater from the Lower Santa Ana River Groundwater Basin, which is managed by the OCWD, and imported water from MWD through the MWDOC.

| Table 27: City of Orange Water Supplies and Demands (Acre-Feet) |
|------------------|------------------|------------------|------------------|------------------|------------------|
| Year             | 2020             | 2025             | 2030             | 2035             | 2040             |
| Groundwater      | 19,600           | 20,650           | 20,650           | 20,650           | 20,650           |
| Imported         | 7,200            | 7,650            | 7,650            | 7,650            | 7,650            |
| Surface Water    | 1,200            | 1,200            | 1,200            | 1,200            | 1,200            |
| Total Citywide Water Demand | 28,000 | 29,500 | 29,500 | 29,500 | 29,500 |

Notes:  
Numbers are in Acre Feet. Table adapted from Figure 3-1: Water Supply Sources in the City (AF) from the 2015 UWMP, available: https://www.cityoforange.org/494/Water-Services

A forecast of the City of Orange water supplies and water demands in normal, dry, and multiple dry year conditions from 2020 through 2040 are listed in Table 3-14, Projected Normal Water Supply and Demand; Table 3-15, Projected Single-Dry Year Water Supply and Demand; and Table 3-16, Projected Multiple Dry Year Period Supply and Demand, of the City’s most current UWMP 2015 (UWMP 2015).

Based on the City’s 2015 UWMP Section 10b Land Use and Planning, a baseline water use of 224 GPCD was reported. Using the estimated 513 new residents projected for the site, water demand
for the proposed project is approximately 114,912 GPCD, or approximately 128.72 AFY (City of Orange 2015).

Therefore, the City’s current and future water demands outlined in the 2015 UWMP took into consideration future development of the project site with residential uses and its associated population increase.

The estimated water demand for the proposed project does not take into account the water-saving measures that the City would require in order to achieve a water reduction target required by the SWPPP for the City in response to California’s current drought condition. Therefore, as demonstrated above, there are adequate water supplies to meet the water demands of the proposed project, and development the proposed project would not require the City of Orange Water Division to obtain new or expanded water supplies. As such, impacts on water supplies as a result of project development would be less than significant and no mitigation measures are necessary.

**Significance Determination:** Less than significant impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** Less than significant.

**e) 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?**

A significant impact may occur if a project would increase wastewater generation to such a degree that the capacity of facilities currently serving the project site would be exceeded. The project would have a negligible demand on OCSD facilities. Impacts are considered less than significant and no mitigation measures are necessary.

**Significance Determination:** Less than significant impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** Less than significant.

**f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?**

A significant impact may occur if a project were to increase solid waste generation to a degree that existing and projected landfill capacity would be insufficient to accommodate the additional solid waste. Trash, recyclables, and green waste within the City are collected by CR&R Waste and Recycling Services. The waste is disposed at any of the three facilities in Orange County: Olinda Alpha Landfill in Brea, Frank R. Bowerman Landfill in Irvine, and Prima Deshecha Landfill in San Juan Capistrano. According to the City of Orange General Plan Program EIR, the solid waste generation factor for multi-family residential uses is 8 pounds per dwelling unit per day (City of
The project’s 167 units would generate approximately 5,816 pounds (2.9 tons) of solid waste per day.

The total amount of solid waste (2.9 tons) is only 0.036 percent the Olinda Alpha landfill’s permitted daily maximum of 8,000 tons of waste per day (Orange County, 2019). Additional waste diversion and public education programs can potentially reduce the amount of solid waste at the source before making it to landfills. Although the project would increase demand for solid waste services by generating additional solid waste, the existing landfills have sufficient capacity and impacts would therefore be less than significant.

**Significance Determination:** Less than significant impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** Less than significant.

**g) Comply with federal, State, and local statutes and regulations related to solid waste?**

A significant impact may occur if a project would generate solid waste that was not disposed of in accordance with applicable regulations. The proposed project would be served with recycling and green waste services provided by the City of Orange. As such, the project would comply with applicable statutes associated with solid waste. Impacts are considered less than significant and no mitigation is necessary.

**Significance Determination:** Less than significant impact.
**Mitigation Measures:** No mitigation measures are required.
**Significance Determination After Mitigation:** Less than significant.
19. **MANDATORY FINDINGS OF SIGNIFICANCE.**

<table>
<thead>
<tr>
<th>Potential Significantly With Mitigation</th>
<th>Less Than Significant Impact</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Does the project have the potential to 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, 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?</td>
<td>☐</td>
<td>☒</td>
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</tr>
<tr>
<td>(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?)</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>(c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Impact Analysis**

a) Does the project have the potential to 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, 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?

A significant impact may occur if a project would have an identified potentially significant impact for any of the above issues. As previously described, the proposed project is the redevelopment of an existing multi-family apartment community located in an urbanized area of the City, and the project site is not within or adjacent to—and would not conflict with—the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan. However, the project site has the potential to support birds that are protected by the MBTA as well as to support nesting of several raptor species. Incorporation of MM BIO-1 would ensure that the proposed project would not violate the provisions of the MBTA.

**Significance Determination:** Less than significant impact with mitigation incorporated.  
**Mitigation Measures:** MM BIO-1, CUL-1, CUL-2, and CUL-3.  
**Significance Determination After Mitigation:** Less than significant.
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

A significant impact may occur if a project, in conjunction with other related projects in the area of the project site, would result in impacts that are less than significant when viewed separately, but would be significant when viewed together. The proposed project would result in potentially significant project-specific impacts to air quality; biological resources; cultural and tribal cultural resources; geological; hydrology; noise; and traffic impacts. However, mitigation measures have been identified that would reduce these impacts to less than significant levels. Furthermore, the Air Quality and Transportation/Traffic analyses presented herein have considered cumulative impacts and determined that cumulative air and traffic impacts are considered less than significant with the implementation of mitigation measures. No additional mitigation measures would be required to reduce cumulative impacts to less than significant levels.

**Significance Determination: Less than significant impact with mitigation incorporated.**
**Mitigation Measures:** MM AIR-1, MM AIR-2, MM BIO-1, MM CUL-1, MM CUL-2, MM CUL-3, MM GEO-1, MM NOI-1, and MM TRIBAL-1.
**Significance Determination After Mitigation:** Less than significant.

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

A significant impact may occur if a project has the potential to result in significant impacts, as discussed in the preceding sections of this IS/MND. All potential impacts of the proposed project have been identified, and mitigation measures have been provided, where applicable, to reduce potential impacts to less than significant levels. Upon implementation of mitigation measures, the proposed project would not have the potential to result in substantial adverse impacts on human beings either directly or indirectly. No additional mitigation measures would be required.

**Significance Determination: Less than significant impact with mitigation incorporated.**
**Mitigation Measures:** MM AIR-1, MM AIR-2, MM BIO-1, MM CUL-1, MM CUL-2, MM CUL-3, MM GEO-1, MM NOI-1, and MM TRIBAL-1.
**Significance Determination After Mitigation:** Less than significant.
20. References


California Register of Historical Resources CNRA). 2016. AB 52 Regulatory Update. Website: http://resources.ca.gov/ceqa/.


