

AVIARA APARTMENTS PROJECT

Draft Environmental Impact Report

Prepared for
City of Carlsbad

June 2020



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CHAPTER 1

Introduction

1.1 Purpose of This EIR

The City of Carlsbad (city), as the lead agency, has prepared this Draft Environmental Impact Report (EIR) to provide the public, trustee agencies, and responsible agencies with information about the potential effects on the environment associated with the implementation of the Aviara Apartments Project (proposed project).

1.2 Intended Use of This EIR

This EIR is an informational document that is intended to inform public agency decision makers and the public of the environmental effects of the proposed project and potential mitigation measures and alternatives that could reduce those effects. This EIR analyzes the environmental effects of the proposed project at a project level. In addition, this EIR describes a reasonable range of alternatives to the proposed project. As described in the California Environmental Quality Act (CEQA) Guidelines Section 15161, a project-specific EIR examines the environmental impacts of a specific development project and focuses primarily on the changes in the environment that would result from the development project. In addition, a project-specific EIR should analyze all phases of the project, including planning, construction, and operation.

1.3 CEQA Environmental Review Process

1.3.1 CEQA Process Overview

This EIR has been prepared in compliance with CEQA (as amended), codified as California Public Resources Code Section 21000 et seq. and the CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. The basic purposes of CEQA are to: (1) inform decision makers and the public about the potential, significant environmental effects of proposed activities, (2) identify the ways that environmental effects can be avoided or significantly reduced, (3) prevent significant, avoidable environmental effects by requiring changes in projects through the use of alternatives or mitigation measures when feasible, and (4) disclose to the public the reasons an implementing agency may approve a project even if significant unavoidable environmental effects are involved.

An EIR uses a multidisciplinary approach, applying social and natural sciences to make a qualitative and quantitative analysis of all the foreseeable environmental impacts that a proposed project would exert on the surrounding area. As stated in CEQA Guidelines Section 15151:

“An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible.”

As described in Section 15121(a) of the CEQA Guidelines, this EIR is intended to serve as an informational document for public agency decision makers and the public. Accordingly, this EIR has been prepared to identify and disclose the significant environmental effects of the proposed project, identify mitigation measures to minimize significant effects, and consider reasonable project alternatives. The environmental impact analyses in this EIR are based on a variety of sources, including agency consultation, technical studies, and field surveys. The city will consider the information presented in this EIR, public comments received on the Draft EIR, and other factors, prior to approving the proposed project.

1.3.2 Notice of Preparation and Public Scoping

Pursuant to Section 15082 of the CEQA Guidelines, the lead agency is required to send a Notice of Preparation (NOP) stating that an EIR will be prepared to the State Office of Planning and Research, responsible and trustee agencies, and federal agencies involved in funding or approving the proposed project, and file it with the appropriate county clerk. The NOP must provide sufficient information for responsible agencies to make a meaningful response. At a minimum, the NOP must include a description of the proposed project, location of the proposed project, and probable environmental effects of the proposed project (CEQA Guidelines Section 15082(a)(1)). Within 30 days after receiving the NOP, responsible and trustee agencies and the State Office of Planning and Research shall provide the lead agency with specific detail about the scope and content of the environmental information related to that agency’s area of statutory responsibility that must be included in the EIR (CEQA Guidelines Section 15082(b)).

On January 18, 2019, in accordance with Sections 15063 and 15082 of the CEQA Guidelines, the city published an NOP for the EIR (**Appendix A.1**) and circulated it to governmental agencies, organizations, and persons who may be interested in the proposed project, including nearby landowners, homeowners, and tenants. The NOP requested comments on the scope of the EIR and asked interested parties regarding the effect this project might have on the environment and for their suggestions regarding ways the project could be revised to reduce or avoid any significant environmental impacts. The 30-day comment period extended through February 18, 2019. The NOP provided a general description of the proposed project, a description of the project area, and a preliminary list of potential environmental effects. Copies of the NOP were made available for public review on the city’s website:

www.carlsbadca.gov/services/depts/planning/agendas.asp

While not required, the city hosted a public meeting to obtain comments from interested parties on the scope of the EIR. The purpose of the meeting was to present the proposed project to the public and to explain the CEQA process. City staff and members of the local community attended the scoping meeting. Comments received from the NOP comment period and public meeting are

included in their entirety in **Appendix A.2** to this EIR, and are summarized below in **Table 1-1, Summary of NOP Comments**, below.

**TABLE 1-1
SUMMARY OF NOP COMMENTS**

Organization or Affiliation	Name	Comment Summary	EIR Section(s) Addressing Comment
California Department of Transportation (Caltrans) District 11	Melina Pereira	Requests applicant conduct a traffic impact study to include a vehicle miles traveled (VMT) analysis, methodology, and Caltrans approvals.	4.14, Transportation
U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife	Karen A. Goebel, Assistant Field Supervisor, U.S. Fish and Wildlife Service Gail K. Sevens, Environmental Program Manager	Offers comments and recommendations to assist the city in avoiding, minimizing, and adequately mitigating Project-related impacts to biological resources, and to ensure that the Project is consistent with all applicable requirements of the approved Habitat Management Plan (HMP).	4.3, Biological Resources
County of San Diego Department of Public Works, County Airports	Roger Griffiths, Director of Airports	Suggests the EIR discuss the proximity of the proposed project to the Palomar Airport and its relationship to the Airport Land Use Compatibility Plan (ALUCP), concerned about existing airport noise on future residents, and suggest submittal of FAA notice.	4.8, Hazards and Hazardous Materials 4.11, Noise and Vibration
Resident	Amy Livingston	Concerned with traffic and parking impacts and consistency with city density and height restrictions. Concerned about whether or not the area can sustain a loosening of density restrictions, and mentions Pacific Rim Elementary school capacity.	4.14, Transportation 4.10, Land Use and Planning
Resident	Daniel Livingston	Concerned with population impacts, traffic impacts, and consistency with city density and height restrictions.	4.12, Population and Housing; 4.14, Transportation 4.10, Land Use and Planning
Resident	Linda Sauer	Concerned with impacts to existing views, traffic impacts, and consistency with city density and height restrictions.	4.1, Aesthetics 4.14, Transportation 4.10, Land Use and Planning
Resident	Mary De Bont	Concerned with traffic and parking impacts, zoning impacts, and consistency with city density and height restrictions.	4.1, Aesthetics 4.14, Transportation 4.10, Land Use and Planning

1.3.3 Draft EIR

The Draft EIR has been prepared pursuant to the requirements of CEQA Guidelines Section 15126. The environmental issues addressed in this EIR were established through review of environmental documentation developed for the proposed project, applicable planning documents, and public and agency responses to the NOP. This EIR provides an analysis of reasonably foreseeable impacts associated with the construction and operation of the proposed project. The environmental baseline for determining potential impacts is the date of publication of the NOP for the proposed project (CEQA Guidelines Section 15125(a)). The impact analysis is

based on changes to existing conditions that would result from implementation of the proposed project.

In accordance with CEQA Guidelines Section 15126, this EIR describes the proposed project and the existing environmental and regulatory setting, identifies environmental impacts associated with project implementation, identifies mitigation measures for potentially significant impacts, and provides an analysis of alternatives. Thresholds of significance have been developed for each environmental resource analyzed in this EIR. The thresholds of significance are defined within each impact analysis section.

1.3.4 Public Review

In accordance with CEQA Guidelines Section 15105, this Draft EIR is being circulated and made available for review and comment during the 45-day public review period. All written comments should be directed to:

City of Carlsbad, Planning Division
Attn: Chris Garcia, Associate Planner
1635 Faraday Avenue
Carlsbad, California 92008
chris.garcia@carlsbadca.gov

Comments on the Draft EIR must be received by close of business on the last day of the 45-day review period unless the city grants an extension.

1.3.5 Final EIR Publication and Certification

Written and oral comments received in response to the Draft EIR will be addressed in a Response to Comments document that, together with the Draft EIR, will constitute the Final EIR. The city will then consider EIR certification (CEQA Guidelines 15090). If the EIR is certified, the city may consider approval of the proposed project. Prior to approving the proposed project, the city must make written findings with respect to each significant environmental effect identified in the EIR in accordance with Section 15091 of the CEQA Guidelines. Pursuant to Section 15094 of the CEQA Guidelines, the city will file a Notice of Determination with the State Clearinghouse and San Diego County Clerk within 5 working days after approval of the proposed project.

1.3.6 Mitigation Monitoring and Reporting Program

CEQA requires lead agencies to “adopt a reporting and mitigation monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment” (CEQA Guidelines Section 15097). The mitigation monitoring program will be available to the public at the same time as the Final EIR.

1.4 Organization of the Draft EIR

This Draft EIR is organized into the following chapters and appendices:

1. **Introduction.** The introduction includes the purpose of an EIR and procedural information.
2. **Summary.** The summary provides a synopsis of the proposed project's potential impacts. It identifies, in an overview fashion, the proposed project under consideration and its objectives; presents a summary of areas of controversy and issues to be resolved; and summarizes the proposed project's impacts and mitigation measures. This section also contains a summary analysis of the alternatives to the proposed project, as well as a summary of environmental impacts in table format.
3. **Project Description.** This chapter includes information about the project location, the existing setting, the project site history, project objectives, project characteristics, and project construction. The chapter also includes a summary of the necessary permits and approvals for the proposed project.
4. **Environmental Impact Analysis.** This chapter describes the environmental setting and identifies impacts of the proposed project for each of the following environmental resource areas: Aesthetics; Air Quality; Biological Resources, Cultural Resources; Energy; Geology and Soils; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Noise and Vibration; Population and Housing; Public Services; Transportation; Utilities and Service Systems; and Wildfire. Mitigation measures to reduce significant impacts of the proposed project to the lowest level feasible are presented, where applicable. Additionally, cumulative impacts are discussed at the end of each topical section.
5. **Alternatives Analysis.** This chapter presents an overview of the alternatives development process and describes and analyzes the alternatives to the proposed project, including the No Project Alternative.
6. **Other CEQA Considerations.** This chapter provides an analysis of growth-inducing impacts, significant irreversible environmental changes, unavoidable significant environmental impacts, and effects found not to be significant.
7. **List of Preparers.** This chapter provides a list of individuals who contributed to the preparation of the EIR.
8. **References.** This chapter provides a list of the resources referenced in the EIR.
9. **Appendices.** The appendices contain important information used to support the analyses and conclusions made in the EIR. Appendices are provided documenting the scoping process, air emissions modeling results, biological resources assessment, cultural and tribal cultural resources assessment, greenhouse gas emissions estimate, noise and vibration assessment, traffic modeling results, fuel modification plan, Phase I and II Environmental Site Assessments, drainage and water quality, and energy consumption modeling results.

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CHAPTER 2

Summary

2.1 Introduction

In accordance with California Environmental Quality Act (CEQA) Guidelines Section 15123, this section of this Draft Environmental Impact Report (EIR) contains a summary of the Aviara Apartments Project (proposed project) and its environmental effects. More detailed information regarding the proposed project and its potential environmental effects is provided in the following sections of this EIR. The City of Carlsbad (city) is the lead agency for the proposed project. Included in this summary is an overview of the project description, setting, and location; a brief discussion of the project background; a description of the project objectives and characteristics; an overview of the project alternatives; a general description of areas of known controversy; a description of issues to be resolved; and a table providing a summary of the project's impacts and proposed mitigation measures.

2.2 Project Location and Setting

The project site is located in the city along the northern coast of San Diego County, in the City of Carlsbad. Carlsbad is bordered by the city of Oceanside to the north, the city of Encinitas to the south, and by the cities of Vista and San Marcos and San Diego County to the east. The city is approximately 40 square miles and includes industrial, commercial, and residential development, and also contains three lagoons, limited agricultural areas, and large tracts of preserved open space. The project site is located 1 mile east of Interstate 5 (I-5), 2 miles west of El Camino Real, and just south of Palomar Airport Road. The project site is bisected by Aviara Parkway, which runs north into Palomar Airport Road. The site's Assessor Parcel Number is 212-040-56-00. The approximately 9.5-acre project site includes two parcels: (1) the East Parcel, which is approximately 2.31 acres; and (2) the West Parcel, which is approximately 7.19 acres. The East Parcel is currently undeveloped vacant land with existing native and non-native vegetation, but the site has previously been graded. The West Parcel currently supports an active flower and flower-supply packaging and wholesale operation.

To the north of the project site is a 50-foot buffer zone designated as open space and the Encinas Creek Corridor, which maintain a Hardline designation under the city's Habitat Management Plan (HMP), meaning the buffer zone and Encinas Creek Corridor have previously been identified and designated as open space (City of Carlsbad, 2004). The McClellan-Palomar Airport is located approximately 1 mile northeast of the project site. According to the McClellan-Palomar Airport Land Use Compatibility Plan, the project site is located in Airport Influence Review Area 1,

Safety Zone 6 (Traffic Pattern Zones), the Airport Land Use Compatibility Plan's Airport Overflight Notification Area, , and the 60-65 community noise equivalent level noise contours of the Airport Land Use Compatibility Plan (San Diego County Regional Airport Authority, 2010). Additionally, the project site is also located within the Federal Aviation Administration Height Notification Boundary and is subject to the Part 77 Safe Efficient Use, and Preservation of the Navigable Airspace regulations (San Diego County Regional Airport Authority, 2010). In addition, the project site is located within the coastal zone of the city, generally defined as the area between the Pacific Ocean and El Camino Real. The city's Local Coastal Program includes six planning areas or segments, with the project site located within the Mello II Segment (City of Carlsbad, 2017b).

2.3 Project Objectives

The following are the objectives for the proposed project:

1. Provide a high-density multi-family residential community in compliance with the goals and policies of the Housing Element of the city's General Plan.
2. Use the site's unique elevation and surrounding geography to develop a project that is aesthetically pleasing and is compatible with and complementary to adjacent land uses.
3. Develop a high-density for-rent apartment project that is in compliance with the General Plan and Zoning Code, Local Coastal Program, Climate Action Plan, Habitat Management Plan, and the Zone 5 Local Facilities Management Plan.
4. Increase the city's inventory of housing diversity and accommodate increasing growth in the region by providing market rate and maximizing the amount of affordable for-rent apartments on an underutilized site that is in close proximity to existing employment and commercial opportunities as well as to recreational, public services, and transit options, consistent with city policies related to the development of housing for a range of income levels.
5. Provide affordable rental housing to a wide range of income levels, including extremely-low (30 percent average median income), low (60 percent average median income) and moderate (90 percent average median income), in a location that is adjacent to an existing affordable housing community to create the potential for shared educational opportunities and services that could benefit both communities.
6. Foster development patterns that promote orderly growth and prevent urban sprawl with the intent to reduce greenhouse gas emissions consistent with policies in the Climate Action Plan.
7. Develop a project that minimizes impacts to sensitive biological resources, to the greatest extent feasible, by redeveloping a previously developed and disturbed site.
8. Restore and contribute hardline preserve area to the Encinas Creek Preserve adjacent to the project site and include an adequate buffer between the proposed development and resources in the Encinas Creek Preserve, consistent with the Habitat Management Plan.

2.4 Project Characteristics Summary

The proposed project proposes to develop a multi-family apartment community on a centrally located parcel in the City of Carlsbad. The project applicant is SummerHill Apartment Communities and the city is the lead agency for the purpose of the environmental review under CEQA. Site improvements would include the construction of market-rate and affordable residential units, parking, common open space, resident amenities, landscaping and utilities/roadway improvements, and the dedication of open space. The proposed project would develop a total of 329 residential units of various sizes on the project site, which includes both the East Parcel and West Parcel due to the bisection of Aviara Parkway through the project site. The East Parcel would include 70 affordable housing units in an approximately 83,223-square-foot building while the West Parcel would include 259 housing units, 12 of which are affordable units, in an approximately 477,000-square-foot building. The proposed project would provide affordable units in excess of requirements set forth by Planning Commission Resolution No. 7114 and Carlsbad Municipal Code (CMC) Chapter 21.85, and, as such, the project applicant is requesting an allocation of additional units from the city's Excess Dwelling Unit Bank, along with other modified development standards and waivers from the CMC, which are further discussed in Chapter 3, *Project Description*.

Amenities, parking, and open space would also be provided throughout the project site. Residential amenities included as part of the proposed project would consist of multipurpose/club rooms, a fitness facility, a Wi-Fi café, and a leasing office. The East Parcel would provide 105 parking spaces at the ground level in parking garages, in addition to surface-level parking. The four-level parking structure on the West Parcel would provide 428 parking spaces. The project site would include street trees, and open space areas would be landscaped with native plants. Additionally, a 50-foot buffer area would be established along the project site's northern border with Encinas Creek Preserve, where native habitat does not currently exist. The proposed project would include all necessary circulation and utility improvements, such as sewer service, a photovoltaic system, and a water system.

2.5 Project Approvals

The following are the discretionary actions and approvals required by the city for the proposed project:

- **Tentative Map (CT 2018-0002).** The applicant is requesting approval of a tentative tract map required for development of the project site. A tentative tract map is required by the California Subdivision Map Act (Government Code Section 66426 et seq.)
- **Site Development Plan (SDP 2018-0002).** A Site Development Plan is required for the approval of a multi-family residential development having more than four dwelling units and required for waivers from the CMC, as further described below.
- **Coastal Development Permit (CDP 2018-0005).** A Coastal Development Permit is required to construct the proposed project. This permit is necessary as the project site is located in the coastal zone within the Mello II Segment of the Local Coastal Program, and is within the appeal jurisdiction of the California Coastal Commission.

- **Hillside Development Permit (HDP 2018-0001).** Grading of the proposed project site is subject to the city’s Hillside Development Ordinance as project areas contain hillside conditions that are defined as slopes greater than 15 feet in height and 15% in slope. The purpose of the Hillside Development Permit is to regulate grading per the city’s Hillside Development Ordinance (CMC Chapter 21.95) standards and policies.
- **Habitat Management Plan (HMP 2018-0001).** A Habitat Management Plan Permit is required for projects that impact sensitive biological resources as defined pursuant to the HMP.
- **Final EIR Certification (EIR 2018-0001).** After the required public review of the Draft EIR, the city will respond to comments, edit the document, and produce a Final EIR to be certified by the city decision-maker as complete and providing accurate information concerning the environmental impacts from the implementation of the proposed project.

As described in further detail in Chapter 3, *Project Description*, the proposed project includes the application of modified development standards pursuant to allowances in CMC Section 21.53.120. Modifications to the standard development regulations are proposed to accommodate the proposed residential density described below as permitted by the SDP process contained in CMC Section 21.53.120(B)(1):

- Increase residential density from 23–30 dwelling units per acre as permitted in the R-30 Residential General Plan land use designation to 40 dwelling units per acre.
- Increase residential building heights from the 35-foot height maximum as required per RD-M zoning designation to 60-foot height maximum.
- Reduce side yard setback requirements contained in CMC Section 21.24 from 5 feet to 3.5 feet to the carports on the East Parcel’s north side.
- Reduce the parking requirements found in CMC Section 21.44.020 from 631 spaces required to 533 spaces.
- Request a 3.63-foot reduction in parking lot perimeter landscape border width from the 8 feet minimum contained in the city’s Landscape Manual to the proposed 4.37 feet minimum on the south side the East Parcel.
- Request a 5.5-foot reduction in parking lot perimeter landscape border width from the 8 feet minimum contained in the city’s Landscape Manual to the proposed 2.5 feet minimum on the north side the East Parcel.
- Request a standards modification from CMC 21.46.130 to allow walls and fences to exceed the 6-foot maximum height within the required side and rear yard setback areas.

2.6 Overview of Project Alternatives

In addition to the proposed project, this EIR evaluates the potential environmental impacts resulting from implementation of alternatives to the proposed project at a qualitative level of detail. The alternatives are summarized below. A detailed discussion of the alternatives is provided in Chapter 5, *Alternatives*, of this EIR.

- **No Project, No Development Alternative.** This alternative assumes that the project site would not be developed with the proposed project, and the project site would remain in its current condition with its current uses.
- **No Project, General Plan Allocation Alternative.** This alternative assumes construction of the 224 residential units allocated to the project site in the General Plan update. The project would be required to comply with the Inclusionary Housing Ordinance and Planning Commission Resolution No. 7114 by providing 20% affordable housing units equating to 45 units. This alternative assumes there would be some modifications to the development regulations; however, residential development would occur only on the West Parcel.
- **Density Bonus Alternative.** This alternative would use a different methodology for determining how many residential units could be developed on the project site, provided that affordable housing is incorporated into the project. In comparison to the proposed density increase approach, wherein additional units above and beyond the units allocated by the General Plan to the project site are transferred from the Excess Dwelling Unit Bank (CMC Chapter 21.54.120), this alternative would involve using a density bonus approach, which would increase the number of residential units on-site as permitted in the CMC (Chapter 21.86). In general, the density bonus provisions in the CMC allow for a 35% increase in maximum allowable unit count under the General Plan if a project constructs affordable housing. The Density Bonus Alternative would result in up to 333 residential units on the project site, 67 of which would be classified as affordable in accordance with City Council Policy 43 and Planning Commission Resolution No. 7114.

2.6.1 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(a) states that an EIR shall describe a range of reasonable alternatives. As evaluated in Chapter 4 of this EIR, the significant impacts of the proposed project would affect air quality; biological resources; cultural resources; geology and soils; noise and vibration; and transportation. As it would substantially lessen impacts to each of these issue topics to a less-than-significant level, the No Project, No Development Alternative would be the environmentally superior alternative.

CEQA Guidelines Section 15126.6(e)(2) requires that if the environmentally superior alternative is the “no project” alternative, the EIR shall identify an environmentally superior alternative from among the other alternatives. The No Project, General Plan Allocation Alternative would be the environmentally superior alternative from the remaining alternatives, as it would reduce the severity of the significant traffic impacts associated with the proposed project and lessen project impacts to biological resources, cultural resources, geology and soils, and noise and vibration through avoidance of development on the East Parcel. Although the No Project, General Plan Allocation Alternative would be the environmentally superior alternative, it would fail to meet four of the eight project objectives, as detailed in Chapter 5, *Alternatives*. This alternative would also result in a vacant parcel that is residentially designated but does not have any units allocated from the General Plan, which conflicts with city housing policies.

2.7 Areas of Controversy and Issues to Be Resolved

2.7.1 Areas of Controversy

Section 15123(b)(2) of the CEQA Guidelines requires that an EIR identify areas of controversy known to the lead agency, including issues raised by other agencies and the public. While significant issues of controversy have not been raised during the EIR preparation process, the main comments submitted on the Notice of Preparation (NOP) during the public review and comment period are summarized below in **Table 2-1**, Summary of NOP Comments.

**TABLE 2-1
SUMMARY OF NOP COMMENTS**

Commenter	Comment Topic	EIR Section(s) Addressing Comment
California Department of Transportation (Caltrans) District 11	Traffic impact study methodology	4.14, Transportation
U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife	Biological impact mitigation and HMP consistency	4.3, Biological Resources
County of San Diego Department of Public Works, County Airports	Relationship of the project to the Airport Land Use Compatibility Plan Noise	4.8, Hazards and Hazardous Materials 4.11, Noise and Vibration
Resident	Traffic and parking Density and height	4.14, Transportation 4.10, Land Use and Planning
Resident	Population impacts Traffic Density and height	4.12, Population and Housing 4.14, Transportation 4.10, Land Use and Planning
Resident	Aesthetics Traffic Density and height	4.1, Aesthetics 4.14, Transportation 4.10, Land Use and Planning
Resident	Traffic and Parking Zoning Density and height	4.1, Aesthetics 4.14, Transportation 4.10, Land Use and Planning

2.7.2 Issues to Be Resolved

CEQA Guidelines Section 15123(b)(3) also requires a discussion of issues to be resolved, including a choice of alternatives and whether or how to mitigate the significant effects. Based on all information included in the record of proceedings, the lead agency must decide whether or not

the EIR was prepared in compliance with CEQA (Public Resources Code Section 21000 et seq.) and Guidelines for Implementation of CEQA (California Code of Regulations Section 15000 et seq.).

There are no significant environmental issues to be resolved related to the proposed project. However, the city will need to consider whether to adopt the mitigation measures recommended by this EIR and whether any other modifications should be required of the project, including consideration of the alternatives analyzed in Chapter 5, *Alternatives*, of this EIR.

2.8 Summary of Significant Environmental Impacts and Mitigation Measures that Reduce or Avoid the Significant Impacts

This section provides a summary of impacts, mitigation measures, and level of impact after implementation of mitigation measures associated with the proposed project. Detailed analyses of these topics are included within each corresponding section contained within this document. The summary is provided by environmental issue area below in **Table 2-2, *Summary of Environmental Impacts and Mitigation Measures***.

**TABLE 2-2
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
Aesthetics			
No significant aesthetic impacts have been identified.	Less than significant	No mitigation measures would be required.	N/A
Air Quality			
<p>Impact 4.2-3: Would the proposed project expose sensitive receptors to substantial pollutant concentrations?</p> <p>Construction of the proposed project would emit diesel particulate matter emit carcinogenic materials or toxic air contaminants (TACs) that exceed the maximum incremental increase in cancer risk of ten in one million or an acute or chronic hazard index of 1.0 from the use of off-road and on-road equipment and stationary sources. The proposed project could result in an increased health risk for offsite residential receptors within 1,000 feet of the project and could expose sensitive receptors to substantial pollutant concentrations.</p>	Potentially significant	<p>Mitigation Measure AQ-1: Reduction of Dust Particulate Matter Emissions During Construction. Off-road diesel equipment greater than 50 horsepower used for the project shall meet EPA Tier 4 final off-road emission standards or equivalent. Such equipment shall be outfitted with Best Available Control Technology for Toxics (T-BACT) devices including a California Air Resources Board certified Level 3 Diesel Particulate Filter or equivalent. This mitigation measure addresses the impact identified under Impact 4.2-3 of the EIR.</p>	Less than significant
Biological Resources			
<p>Impact 4.3-1: Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?</p> <p>Construction and operation of the proposed project could result in adverse edge effects such as dust which could disrupt plant vitality in the short-term or construction-related soil erosion and water runoff, and could result in indirect impacts to two special-status plant species, southwestern spiny rush and San Diego marsh-elder.</p> <p>Although no coastal California gnatcatcher and least Bell's vireo were observed at the project site, they are known to occur adjacent to the project site: if either of the special-status wildlife species moves onto or adjacent to the site in the future during construction or operation, impacts could occur.</p> <p>Implementation of the proposed project could result in significant impacts to the yellow-breasted chat, observed on site during 2017 surveys, and the yellow warbler, determined to have a low potential to occur within the Encinas Creek open space areas. Both species are not federally- or State-listed, but are California</p>	Potentially significant	<p>Mitigation Measure BIO-1: Temporary Construction Fencing and Grading. Temporary construction fencing (with silt barriers) shall be installed at the limits of project-related impacts (including construction staging areas and access routes) to prevent sensitive habitat impacts and to prevent the spread of silt from the construction zone into adjacent habitats to be avoided. Fencing shall be installed in a manner that does not impact habitats to be avoided. The applicant shall submit final construction plans to the City for approval at least 30 days prior to initiating any clearing, grubbing, grading, or other construction activities. These final plans shall include the type and location of fencing, including permanent fencing along any urban/wildlands interface to deter unauthorized access (if deemed necessary by the City) and/or temporary fencing to delineate the construction footprint, impact zones within the footprint, protected areas, and no-construction buffer zones.</p> <p>Employees shall strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas within the fenced project</p>	Less than significant

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Species of Special Concern. Potential direct impacts on the species would be avoided because no construction is proposed within the Encinas Creek open space areas. However, construction activities during breeding season could result in impacts.</p> <p>The project site contains trees, shrubs, and other vegetation that provide suitable nesting habitat for common birds, including sensitive birds and raptors, protected under the Migratory Bird Treaty Act (MBTA) and CDFG Code. Construction of the proposed project could result in the removal or trimming of trees and other vegetation during the general bird nesting season (January 15 through September 15) and, therefore, could result in impacts to nesting birds in violation of the MBTA and CDFG Code. Direct impacts could occur as a result of removal of vegetation supporting an active nest.</p>		<p>impact limits. These designated areas shall be located in previously compacted and disturbed areas to the maximum extent practicable so as to prevent any runoff from entering adjacent open space and shall be shown on the construction plans. Fueling of equipment shall take place within existing paved areas greater than 100 feet from Encinas Creek. The contract shall check equipment for leaks prior to operation and repair, as necessary. "No-fueling zones" shall be designated on construction plans. Fugitive dust will be avoided and minimized through watering and other appropriate measures.</p> <p>A biological monitor shall be present during all vegetation clearing activities to help ensure that habitat is not cleared beyond established limits and that no native species are harmed.</p> <p>If work occurs beyond the fenced or demarcated limits of impact, all work shall cease until the problem has been remedied to the satisfaction of the City. Any riparian/wetland or upland habitat impacts that occur beyond the approved fence shall be mitigated in accordance with ratios specified in the Carlsbad HMP or as otherwise determined by the City, U.S. Fish and Wildlife Service, U.S. Army Corp of Engineers, Regional Water Quality Control Board, and/or California Department of Fish and Wildlife. Temporary construction fencing shall be removed upon project completion.</p> <p>Grading activity shall be prohibited during the rainy season (October 1 – April 1). All graded areas shall be landscaped prior to October 1st of each year with either temporary or permanent landscaping materials to reduce erosion potential. Such landscaping shall be maintained and replanted if not well-established by December 1st following the initial planting.</p> <p>The October 1st grading season deadline may be extended with the approval of the City Engineer subject to implementation by October 1st of special erosion control measures designed to prohibit discharge of sediments off-site during and after the grading operation. Extensions beyond November 15th may be allowed with the approval of the City Engineer in areas of very low risk of impact to sensitive coastal resources and may be approved either as part of the original coastal development permit or as an amendment to an existing coastal development permit.</p>	

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>If any of the responsible resource agencies prohibit grading operations during the summer grading period in order to protect endangered or rare species or sensitive environmental resources, then grading activities may be allowed during the winter by a coastal development permit or permit amendment, provided that appropriate best management practices are adopted, which may include, but are not limited to: silt fencing, gravel bag barriers, fiber rolls, construction road stabilization, dust control, concrete wash out areas, and covering and secondary containment for temporary storage areas and stockpiles. This mitigation measure addresses the impacts identified under Impacts 4.3-1 and 4.3-3 of the EIR.</p> <p>Mitigation Measure BIO-2: Preservation and Management of Open Space. The project applicant shall record two types of easements: an open space easement that will be recorded on the final map, and a conservation easement or restrictive covenant that will be recorded by the County of San Diego. The easements shall be recorded over those portions of the property identified as proposed on-site preserve on Figure 9 of the approved Biological Resources Letter Report (Appendix C.1 of the EIR).</p> <p>Prior to recordation of the final map, issuance of a grading permit or clearing of any habitat or vegetation, whichever occurs first, the following items shall be submitted to the city and approved as final by the City Planner or designee: Recordation of Conservation Easement, Restoration Plan, Preserve Management Plan (PMP)/Property Analysis Record (PAR), long-term management funding, and a management agreement (contract) with qualified preserve manager.</p> <p>Prior to issuance of a grading permit or clearing of vegetation, the project applicant shall prepare a Restoration Plan for the revegetation of the temporary impact areas and proposed creation/substantial restoration areas within the preserve with coastal sage scrub for review and approval by the city or appointed designee. The Restoration Plan shall include five years of maintenance and monitoring to ensure the restoration effort is successful.</p> <p>The project applicant shall prepare a perpetual management, maintenance, and monitoring plan (PMP) according to the standards contained in Section F.2 of the Habitat Management Plan, Volume 2 and 3 of the Multiple Habitat Conservation Program and the citywide open space</p>	

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>management plan for the on-site biological conservation easement or restrictive covenant areas for review and approval by the city or appointed designee. The PMP shall include area specific management directives for treatment of non-native invasive plant species within the project site's open space, in addition to those required to meet HMP adjacency standards. The initial treatment of non-native invasive plant species shall occur within the first year following issuance of grading permit, and periodically thereafter, according to a schedule approved by the City and as funding allows.</p> <p>The applicant shall also establish a non-wasting endowment for an amount approved by the City based on a Property Analysis Record (PAR; Center for Natural Lands Management, 2008) or similar cost estimation method to secure the ongoing funding for the perpetual management, maintenance, and monitoring of the biological conservation easement area by an agency, non-profit organization, or other entity approved by the City. Upon approval of the draft PMP, the applicant shall submit the final PMP and a contract with the approved land manager to the city or appointed designee, as well as transfer the funds for the non-wasting endowment to a non-profit conservation entity.</p> <p>The project applicant shall install appropriate permanent fencing, such as three-strand smooth-wire fencing, along the boundary of the open space to discourage human access and allow wildlife to move through unobstructed. The project applicant shall also install signage on the fence to educate and inform the public about the open space and to prohibit access. The fencing and signs shall be shown on all final project plans. This mitigation measure addresses the impact identified under Impact 4.3-1 of the EIR.</p> <p>Mitigation Measure BIO-3: Coastal California Gnatcatcher Protection. No clearing, grubbing, grading, or other construction activities shall occur within Diegan coastal sage scrub during the breeding season of the coastal California gnatcatcher (February 15 to August 31). All grading permits, improvement plans, and the final map shall state the same. If clearing, grubbing, grading, or other construction activities would occur during the breeding season for the gnatcatcher, a pre-construction survey shall be conducted to determine whether gnatcatchers occur within the impact area(s). The pre-construction survey shall consist of one clearance survey</p>	

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>by a permitted biologist no more than three days prior to the beginning of clearing, grubbing, grading, or other construction activities. If there are no gnatcatchers nesting (includes nest building or other breeding/nesting behavior) within that area, clearing, grubbing, grading, or other construction activities shall be allowed to proceed. If, however, any gnatcatchers are observed, but no nesting or breeding behaviors are noted, additional surveys for breeding/nesting behaviors shall be conducted weekly. If any gnatcatchers are observed nesting or displaying breeding/nesting behavior during the pre-construction survey or additional weekly surveys within the area, a no-work buffer shall be placed on clearing, grubbing, grading, or other construction activities within 500 feet of the nest location at which birds have been observed. The no-work buffer shall remain in place until all nesting behavior has ceased and all young have successfully fledged the nest, as determined by the qualified biologist, or until August 31, whichever happens first. This mitigation measure addresses the impact identified under Impact 4.3-1 of the EIR.</p> <p>Mitigation Measure BIO-4: Nesting Bird and Raptor Avoidance. If construction activities requiring earthwork, clearing, and grubbing of vegetation must occur during the general bird breeding season for migratory birds and raptors (January 15 to September 15), the project applicant shall retain a qualified biologist to perform a pre-construction survey of potential nesting habitat to confirm the absence of active nests belonging to migratory birds, including raptors and non-listed sensitive birds (e.g., yellow-breasted chat), afforded protection under the Migratory Bird Treaty Act and California Fish and Game Code. The pre-construction survey shall be performed no more than three days prior to the commencement of the activities. If the qualified biologist determines that no active migratory bird or raptor nests occur, the activities shall be allowed to proceed without any further requirements. If the qualified biologist determines that an active migratory bird or raptor nest is present, a no-work buffer shall be placed on construction activities within 500 feet of any active nest at which birds have been observed. The no-work buffer shall remain in place until the young have fledged the nest and the nest is confirmed to no longer be active, as determined by the qualified biologist. This mitigation measure addresses the impact identified under Impact 4.3-1 of the EIR.</p>	

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Impact 4.3-2: Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?</p> <p>Implementation of the proposed project would result in permanent direct impacts to Carlsbad HMP Habitat Groups A-F.</p> <p>Direct impacts to special-status vegetation communities include 0.1 acre of Diegan coastal sage scrub (unoccupied; Habitat Group D).</p> <p>Indirect impacts to special-status upland vegetation communities could result primarily from adverse edge effects. During construction activities, edge effects may include dust, which could disrupt plant vitality in the short-term, or construction related soil erosion and water runoff.</p>	<p>Potentially significant</p>	<p>Mitigation Measure BIO-5: Diegan Coastal Sage Scrub Mitigation. The project applicant shall compensate for the unavoidable impacts to 0.1 acre of unoccupied Diegan coastal sage scrub at a ratio of 2:1 to include substantial restoration and/or creation on-site within the project site's open space. Any mitigation must also be approved by the California Coastal Commission.</p> <p>The project applicant will submit final habitat restoration plans to the City for review and approval at least 30 days prior to initiating project impacts. The Restoration Plan shall be prepared and implemented consistent with MHCP Volume II, Appendix C (Revegetation Guidelines, pages C-1 to C-2), and Volume III; HMP pp. F-8 to F-11; and Open Space Management Plan Section 3.1.5. The Restoration Plan shall, at a minimum, include an evaluation of restoration suitability specific to proposed habitat types, soil and plant material salvage/translocation, planting and seeding lists, discussion of irrigation, maintenance and monitoring program, and success criteria. All areas shall be monitored for a minimum of 5 years to ensure establishment of intended plant communities. This mitigation measure addresses the impact identified under Impact 4.3-2 of the EIR.</p>	<p>Less than significant</p>
<p>Impact 4.3-3: Would the proposed project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</p> <p>The project site is an upland area that does not support potential jurisdictional waters or wetlands, including federally-protected wetlands. However, indirect impacts could occur if storm water runoff is not controlled at the site and sediment, toxics, and/or other material is inadvertently discharged into potentially jurisdictional waters or wetlands within the adjacent open space.</p>	<p>Potentially significant</p>	<p>Implementation of Mitigation Measure BIO-1 would be required.</p>	<p>Less than significant</p>

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Impact 4.3-4: Would the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?</p> <p>Lighting from operation of the proposed project could result in adverse indirect impacts on wildlife movement if not appropriately shielded and directed downward and away from the Existing HMP Hardline preserve and open space areas. Additionally, the function of the Encinas Creek corridor could degrade over time and during operation of the proposed project if encroachment and other disturbances are not prohibited.</p>	<p>Potentially significant</p>	<p>Mitigation Measure BIO-6: Project Lighting. All exterior lighting adjacent to Existing Hardline and open space associated with Encinas Creek shall be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from preserved habitat to the maximum extent practicable. Any lighting that faces preserved open space shall use low wattage, long wavelength bulbs (560 nanometers or longer; amber to red). The lighting shall be shown on all final project plans and approved by the City. This mitigation measure addresses the impact identified under Impact 4.3-4 of the EIR.</p>	<p>Less than significant</p>
Cultural and Tribal Cultural Resources			
<p>Impact 4.4-1: Would the proposed project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?</p> <p>Since there are 41 previously recorded cultural resources within one-mile radius of the project site, there is a potential for subsurface cultural material to be discovered at the project site during ground-disturbing activities.</p>	<p>Potentially significant</p>	<p>Mitigation Measure CUL-1: Cultural Resources Monitoring and Recovery Program. Based on the potential for subsurface cultural resources, a cultural resources monitoring program, including participation of Native American groups with interest in the project site, shall be implemented for initial grading and other ground-disturbing activities, including removal of pavement and structural foundations associated with the warehouse within the project site. The following measures are required for the project, consistent with the Tribal, Cultural, and Paleontological Guidelines (City of Calisbad, 2017a: pp 75-77):</p> <p>a. Prior to the commencement of ground disturbing activities, the project developer shall contract with a qualified professional archaeologist and shall enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with the San Luis Rey Band of Mission Indians, or another Traditionally and Culturally Affiliated Native American tribe (“TCA Tribe”) for monitoring during ground disturbing activities. The agreement will contain provisions to address the proper treatment of any tribal cultural resources and/or Luiseño Native American human remains inadvertently discovered during the course of the project. The agreement will outline the roles and powers of the Luiseño Native American monitors and the archaeologist and shall include the provisions below. A copy of said archaeological contract and Tribal Monitoring agreement shall be provided to the</p>	<p>Less than significant</p>

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>City of Carlsbad prior to the issuance of a grading permit.</p> <p>b. A Luiseño Native American monitor shall be present during all ground disturbing activities. Ground disturbing activities may include, but are not be limited to, archaeological studies, geotechnical investigations, clearing, grubbing, trenching, excavation, preparation for utilities and other infrastructure, and grading activities.</p> <p>c. The landowner shall relinquish ownership of all cultural resources collected during ground disturbing activities and from any previous archaeological studies or excavations on the project site to the contracted TCA Tribe referenced in CR-1(a) for proper treatment and disposition per the Cultural Resources Treatment and Monitoring Agreement for Reburial and treated in accordance with the TCA Tribe's cultural and spiritual traditions within an appropriate protected location determined in consultation with the TCA Tribe and protected by open space or easement, etc., where the cultural items will not be disturbed in the future, and shall not be curated, unless ordered to do so by a federal agency or a court of competent jurisdiction. When tribal cultural resources are discovered during the project, if the archaeologist collects such resources, a Luiseño Native American monitor must be present during any testing or cataloging of those resources.</p> <p>d. All historical cultural resources uncovered by the archaeologist will be collected and treated following the guidelines and regulations set forth under 36 CFR 79, federal regulations for collection of cultural materials.</p> <p>e. The archaeologist and Luiseño Native American monitor shall be present at the project's on-site preconstruction meeting to consult with grading and excavation contractors concerning excavation schedules and safety issues, as well as to consult with the principal archaeologist concerning the proposed archaeologist techniques and/or strategies for the project.</p> <p>f. Luiseño Native American monitors and archaeological monitors shall have joint authority to temporarily divert and/or halt construction activities within the immediate</p>	

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>vicinity of a find. If archaeological artifact deposits, cultural features or tribal cultural resources are discovered during construction, all earth-moving activity within 100 feet, or otherwise determined as appropriate and necessary by the archaeologist and Luiseño Native American monitor, around the immediate discovery area must be diverted until the Luiseño Native American monitor and the archaeologist can assess the nature and significance of the find.</p> <p>g. If a significant tribal cultural resource(s) and/or unique archaeological resource(s) are discovered during ground-disturbing activities for this project, the San Luis Rey Band of Mission Indians and the Rincon Band of Luiseño Indians shall be notified and consulted with by the city regarding the significance of the resources and the respectful and dignified treatment of those resources. All sacred sites, significant tribal cultural resources and/or unique archaeological resources encountered within the project area shall be avoided and preserved as the preferred mitigation, if feasible. If, however, a data recovery plan is authorized by the City as the Lead Agency under CEQA, San Luis Rey Band of Mission Indians, Rincon Band of Luiseño Indians, and the contracted TCA Tribe referenced in CR-1(a) shall be notified and consulted regarding the drafting of any such recovery plan. The recovery plan shall be finalized with the TCA Tribe. For significant artifact deposits or cultural features that are part of a data recovery plan, an adequate artifact sample to address research avenues previously identified for sites in the area will be collected using professional archaeological collection methods. If the Qualified Archaeologist collects such resources, the Luiseño Native American monitor must be present during any testing or cataloging of those resources. Moreover, if the Qualified Archaeologist does not collect the cultural resources that are unearthed during the ground disturbing activities, the Luiseño Native American monitor may at their discretion, collect said resources and provide them to the contracted TCA Tribe referenced in CR-1(a) for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions.</p> <p>h. If suspected Native American human remains are encountered, California Health and Safety Code</p>	

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>Section 7050.5(b) states that no further disturbance shall occur until the San Diego County Medical Examiner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b) remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. Suspected Native American remains shall be examined in the field and kept in a secure location at the site. A Luiseño Native American monitor shall be present during the examination of the remains. If the San Diego County Medical Examiner determines the remains to be Native American, the Native American Heritage Commission (NAHC) must be contacted by the Medical Examiner within 24 hours. The NAHC must then immediately notify the "Most Likely Descendant" about the discovery. The Most Likely Descendant shall then make recommendations within 48 hours and engage in consultation concerning treatment of remains as provided in Public Resources Code 5097.98.</p> <p>i. In the event that fill material is imported into the project area, the fill shall be clean of tribal cultural resources and documented as such. Commercial sources of fill material are already permitted as appropriate and will be culturally sterile. If fill material is to be utilized and/or exported from areas within the project site, then that fill material shall be analyzed and confirmed by an archeologist and Luiseño Native American monitor that such fill material does not contain tribal cultural resources.</p> <p>j. No testing, invasive or non-invasive, shall be permitted on any recovered tribal cultural resources without the written permission of the contracted TCA Tribe referenced in CR-1(a).</p> <p>k. Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusions of the monitoring program shall be submitted by the archaeologist, along with the Luiseño Native American monitor's notes and comments, to the City of Carlsbad for approval. Said report shall be subject to confidentiality as an exception to the Public Records Act and will not be available for public distribution.</p>	

2. Summary

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Impact 4.4-2: Would the proposed project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?</p> <p>One archaeological resource (CA-SDI-11022), has been previously recorded within the project site; but is since believed to be destroyed and no additional materials were identified within the project site during survey. However, since there are 41 previously recorded cultural resources within one-mile radius of the project site, there is a potential for historic-period features or cultural material to be discovered at the project site during ground-disturbing activities.</p>	<p>Potentially significant</p>	<p>This mitigation measure addresses the impacts identified under Impacts 4.4-1, 4.4-2, 4.4-3, and 4.4-4 of the EIR. Implementation of Mitigation Measure CUL-1 would be required.</p>	<p>Less than significant</p>
<p>Impact 4.4-3: Would the proposed project disturb any human remains, including those interred outside of formal cemeteries? Although, the project would not disturb any known human remains, grading and excavation associated with the proposed project would extend into previously undisturbed subsurface areas or other locations where there is some possibility to encounter buried human remains.</p>	<p>Potentially significant</p>	<p>Implementation of Mitigation Measure CUL-1 would be required.</p>	<p>Less than significant</p>
<p>Impact 4.4-4: Would the proposed 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:</p> <ul style="list-style-type: none"> i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)? ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe? (Potentially Significant) 	<p>Potentially significant</p>	<p>Implementation of Mitigation Measure CUL-1 would be required.</p>	<p>Less than significant</p>

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Since there are 41 previously recorded cultural resources within one-mile radius of the project site, there is a potential for previously unknown archaeological resources to be identified during ground disturbing activities which could be determined by the Tribes to be a potential Tribal cultural resource. If not treated properly, ground disturbing activities therefore could cause a substantial adverse change in the significance of a known Tribal cultural resource.</p>			
Energy			
<p>No significant energy impacts have been identified.</p>	<p>Less than significant</p>	<p>No mitigation measures would be required.</p>	<p>N/A</p>
Geology and Soils			
<p>Impact 4.6-9: Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? Implementation of the proposed project would result in a potentially significant paleontological resource impact in association with grading/excavation in previously undisturbed areas of the Santiago Formation (high paleontological potential).</p>	<p>Potentially significant</p>	<p>Mitigation Measure GEO-1: Paleontological Resources – Monitoring, Recovery and Treatment Program. Prior to the commencement of construction, a qualified Principal Paleontologist shall be retained to oversee the mitigation program. The City defines a Principal Paleontologist as a person with a graduate degree in paleontology, geology, or related field, and who has at least one year of prior experience as a principal investigator. In addition, a regional fossil repository shall be designated to receive any discovered fossils. Because the proposed project is in San Diego County, the recommended repository is the San Diego Natural History Museum.</p> <p>The Principal Paleontologist shall attend the pre-construction meeting to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. As well, the Principal Paleontologist shall conduct a paleontological resource contractor awareness training workshop to be attended by earth excavation personnel.</p> <p>The Principal Paleontologist shall oversee the implementation of required monitoring, recovery, and treatment of resources within both the West Parcel and East Parcel. A paleontological monitor (working under the direction of the Principal Paleontologist) shall be onsite on a full-time basis during all original cutting of previously undisturbed deposits of the Santiago Formation (high paleontological potential) to inspect exposures for unearthed fossils. Site conditions differ slightly between the parcels.</p> <p>Monitoring is required during earthwork within the following areas:</p>	<p>Less than significant</p>

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> • West Parcel: Earthwork that is 3 feet below existing grade or more and any work with any grade changes to the existing slopes in the southwestern corner of the parcel. • East Parcel: Earthwork that is 17 feet below existing grade or more. <p>If fossils are discovered, the Principal Paleontologist (or paleontological monitor) shall recover them. Bulk sedimentary matrix samples may also be collected for stratigraphic horizons that appear likely to contain microvertebrate fossils. In most cases, this fossil salvage can be completed in a short period of time. However, some fossil specimens (e.g., a bone bed or a complete large mammal skeleton) may require an extended salvage period. In these instances, the Principal Paleontologist (or paleontological monitor) has the authority to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner.</p> <p>Fossil remains collected during monitoring and salvage shall be prepared (including washing of sediments to recover microvertebrate fossils), repaired, sorted, and cataloged as part of the mitigation program. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be deposited (as a donation) in the designated fossil repository. Donation of the fossils shall be accompanied by financial support for initial specimen storage.</p> <p>A final summary paleontological mitigation report shall be completed that outlines the results of the mitigation program. This report shall include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, inventory lists of catalogued fossils, and significance of recovered fossils. The final paleontological mitigation report shall be submitted to the city or an appointed designee for review and approval prior to the release of the grading bond. This mitigation measure addresses the impact identified under Impact 4.6-9 of the EIR.</p>	

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
Greenhouse Gas Emissions			
No significant greenhouse gas emissions impacts have been identified.	Less than significant	No mitigation measures would be required.	N/A
Hazards and Hazardous Materials			
<p>Impact 4.8-4: Would the proposed project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?</p> <p>The project site was previously listed as having detections of petroleum hydrocarbons in five areas, likely associated with three former aboveground storage tanks (ASTs) used for fuel storage. The ASTs were removed, and although confirmation soil sampling at the time indicated that no petroleum hydrocarbons remained in the soil above the laboratory detection limit. The Phase II Environmental Site Assessment indicated that recent soil sampling at the site found low levels of TPH in the heavy oil range at the site. Therefore, the possibility remains for previously unidentified contamination to be encountered.</p>	Potentially significant	<p>Mitigation Measure HAZ-1: Soil Management Plan. The project applicant shall submit and obtain approval of a Soil Management Plan from the San Diego County DEH HMD prior to initiating any earthwork activities on the project site. The Soil Management Plan shall be prepared for the proposed project by a qualified environmental consultant based on the findings of the Phase I and II Environmental Site Assessments prepared by Arcadis and included in Appendices to this DEIR, and approved by the HMD. During construction, the contractor shall implement the Soil Management Plan and cease any earthwork activities upon discovery of any suspect soils or groundwater (e.g., petroleum odor and/or discoloration). The contractor shall notify the HMD upon discovery of suspect soils or groundwater and retain a qualified environmental firm to collect soil samples to confirm the level of contamination that may be present.</p> <p>If contamination is found to be present onsite, any further proposed groundbreaking activities within areas of identified or suspected contamination shall be conducted according to a site specific health and safety plan, prepared by a California state licensed professional consistent with Cal OSHA and Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) requirements. The contractor shall follow all procedural direction given by HMD in accordance with the Soil Management Plan prepared for the site to ensure that suspect soils are isolated, protected from runoff, and disposed of in accordance with transportation laws and the requirements of the licensed receiving facility.</p> <p>If contaminated soil or groundwater is encountered and identified constituents exceed human health risk levels, the project applicant shall submit documentation to the City to verify that the contamination has been delineated, removed, and disposed of off-site in compliance with the receiving facilities' requirements prior to any ground-disturbing activity on the relevant portion of the project site. This mitigation measure addresses the impact identified under Impact 4.8-4 of the EIR.</p>	Less than significant

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
Hydrology and Water Quality			
No significant hydrology and water impacts have been identified.	Less than significant	No mitigation measures would be required.	N/A
Land Use and Planning			
No significant environmental impacts related to land use and planning have been identified.	Less than significant	No mitigation measures would be required.	N/A
Noise and Vibration			
<p>Impact 4.11-1: Would the proposed project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</p> <p>During construction of the proposed project, construction noise would impact the closest noise-sensitive land uses, which are residences located to the south and west of the project site, approximately 60 feet and 250 feet away, respectively.</p>	Potentially significant	<p>Mitigation Measure NOI-1: Construction-measures to Reduce Noise Impacts. The following field techniques shall be implemented by the project construction contractor to reduce construction-related noise:</p> <ul style="list-style-type: none"> a. The applicant shall coordinate with contractors and sub-contractors to require that equipment and trucks use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds). The installation of improved mufflers would provide at least 10 dBA noise reduction at all off-site sensitive receptor locations (FHWA, 2017). b. Internal combustion engine driven equipment shall be equipped with intake and exhaust mufflers that are in good condition. Engines shall be turned off when not in use. Idling shall be limited to no more than 5 minutes at a time. c. Impact tools used for this project shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. d. Impact tools shall use external jackets to reduce noise generation. e. Vehicle staging and stockpiling shall be located as far as practical from nearby residences, such as in the northern half of the East Parcel or the northern half or central portions of the West Parcel. <p>This mitigation measure addresses the impact identified under Impact 4.11-1 of the EIR.</p>	Less than significant

Impacts	Significance Before Mitigation	Mitigation Measures	Significance after Mitigation
Population and Housing			
No significant environmental impacts related to population and housing impacts have been identified.	Less than significant	No mitigation measures would be required.	N/A
Public Services			
No significant environmental impacts related to public services impacts have been identified.	Less than significant	No mitigation measures would be required.	N/A
Transportation			
No significant environmental impacts related to transportation impacts have been identified.	Less than significant	No mitigation measures would be required.	N/A
Utilities and Service Systems			
No significant environmental impacts related to utilities and service systems have been identified.	Less than significant	No mitigation measures would be required.	N/A
Wildfire			
No significant wildfire impacts have been identified.	Less than significant	No mitigation measures would be required.	N/A

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CHAPTER 3

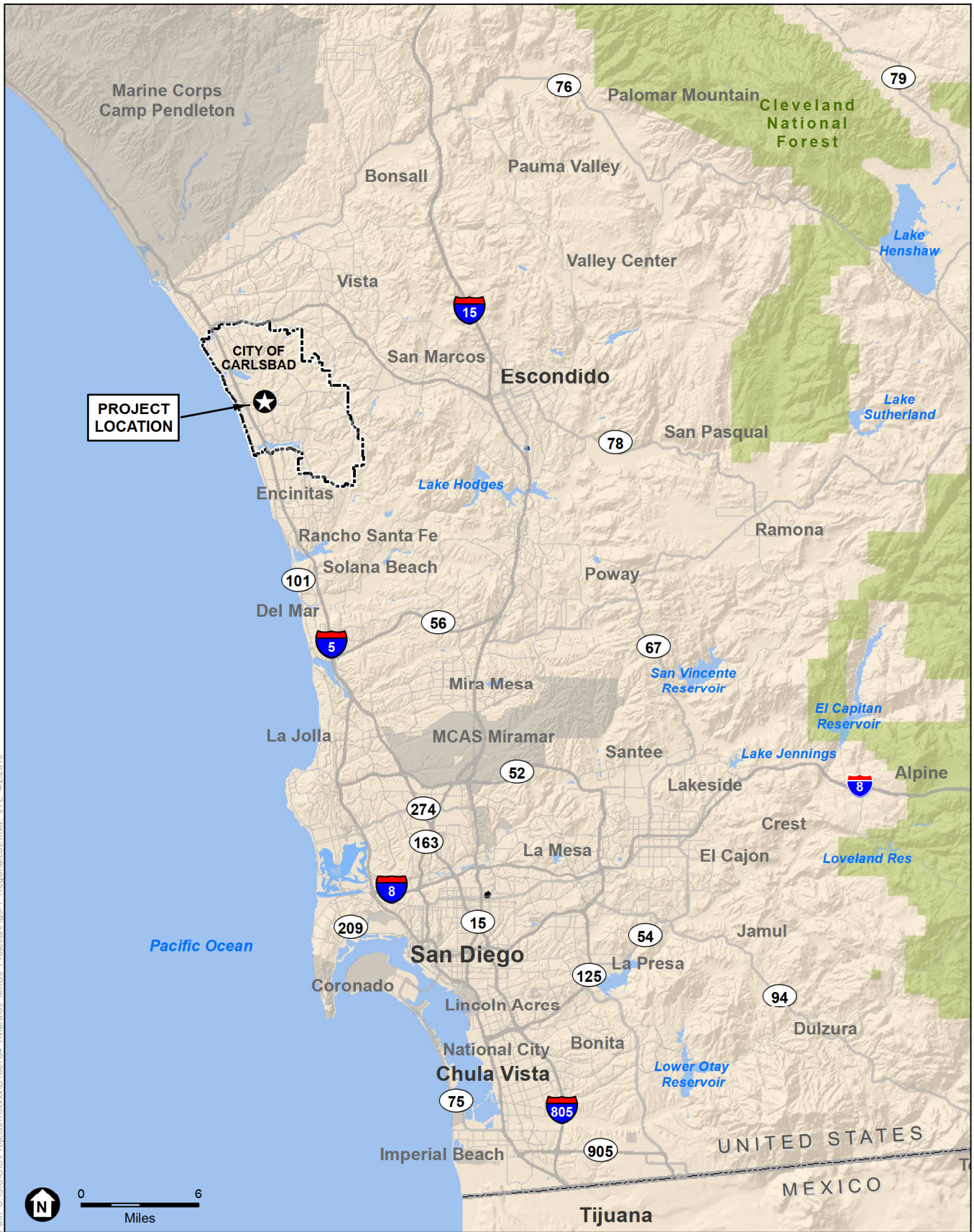
Project Description

The Aviara Apartments Project (proposed project) proposes to develop a multi-family apartment community on a centrally located parcel in the City of Carlsbad (city). The project applicant is SummerHill Apartment Communities and the city is the lead agency for the purpose of the environmental review under the California Environmental Quality Act (CEQA). The proposed project would develop a total of 329 residential units of various sizes on the project site, which includes an East Parcel and West Parcel due to the bisection of Aviara Parkway through the project site. The East Parcel would include a total of 70 affordable housing units in an approximately 83,123-square-foot building, while the West Parcel would include a total of 259 housing units, which includes 12 affordable units, in an approximately 477,000-square-foot building. Amenities and parking would also be provided with each residential complex.

3.1 Project Location

The project site is located in the city along the northern coast of San Diego County, as shown in **Figure 3-1, Regional Location**. Carlsbad is bordered by the city of Oceanside to the north, the city of Encinitas to the south, and by the cities of Vista and San Marcos and San Diego County to the east. The city is approximately 40 square miles and comprises industrial, commercial, and residential development, including the Carlsbad Premium Outlets, an auto-retail center, a large industrial park area, the Legoland California Educational/Recreational Park, and a regional airport. The city also contains three lagoons, limited agricultural areas, and large tracts of preserved open space.

Specifically, the approximately 9.5-acre project site is located 1 mile east of Interstate 5 (I-5), 2 miles west of El Camino Real, and 0.1-mile south of Palomar Airport Road. The project site is bisected by Aviara Parkway, which runs north into Palomar Airport Road. Regional access to the project site is provided by I-5. Local access to the project site is provided by Aviara Parkway, which can be accessed from Palomar Airport Road to the north or from Poinsettia Lane to the south. The bisection of the project site by Aviara Parkway results in an approximately 7.19-acre West Parcel and an approximately 2.31-acre East Parcel. The site's Assessor Parcel Number is 212-040-56-00. **Figure 3-2, Project Site and Vicinity**, shows the boundaries of the project site, the area surrounding the project site, and the assessor parcel number associated with the project site.



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SOURCE: ESRI 2018

Avira Apartments Project

Figure 3-1
Regional Location





SOURCE: SanGIS 2018

Aviara Apartments Project

Figure 3-2
Project Site and Vicinity



3.2 Existing Setting

3.2.1 Project Site Setting

The project site includes two parcels: (1) the East Parcel, which is approximately 2.31 acres, and (2) the West Parcel, which is approximately 7.19 acres. The natural topography of the project site was previously altered with development and the construction of Aviara Parkway and Laurel Tree Lane. Both Aviara Parkway and the portion of Laurel Tree Lane closest to Aviara Parkway are elevated above the two parcels that comprise the project site and relatively steep slopes are adjacent to the roadways. The West Parcel is at the base of an incline that flanks the southwest and southeast corner of the project site. Across the entire project site, approximately 7.33 acres have a maximum slope of 15%, 0.52 acre has a slope of 15% to 25%, 0.57 acre has a slope of 25% to 40%, and 0.65 acre has a slope of greater than 40% (REC Consulting Inc., 2017). As further discussed in Section 4.6, *Geology and Soils*, material underlying the site include artificial fill, artificial fill roadway materials, quaternary alluvium, and silty sandstone deposits consistent with the Santiago Formation (GeoSoils, Inc., 2019).

The East Parcel is currently undeveloped vacant land with existing native and non-native vegetation, but the site has previously been graded. Elevations on the East Parcel range between 94 and 111 feet above mean sea level, a total relief of approximately 17 feet, and the site slopes to the northwest at a gentle gradient (GeoSoils, Inc., 2019).

The West Parcel currently supports an active flower and flower-supply packaging and wholesale operation, which includes a 38,000-square-foot warehouse, a 10,000-square-foot loading dock with a 350-square-foot shed, a 50,000 square-foot concrete parking area and approximately 85,000 square feet of gravel roads and parking area (Arcadis, 2016). The West Parcel is bordered on the east, south, and west sides by existing slopes. Elevations on the West Parcel range from approximately 82 feet to 144 feet above, a total relief of approximately 62 feet (GeoSoils, Inc., 2019). Project areas on the West Parcel and East Parcel contain hillside conditions that are defined as slopes greater than 15 feet in height and 15% in slope (REC, 2017).

Surrounding land uses primarily consist of commercial and residential uses and designated open space. To the north of the project site is a 50-foot buffer zone designated as open space and Encinas Creek, which maintains a Hardline designation under the city's Habitat Management Plan (City of Carlsbad, 2004). Beyond the open space to the north are commercial developments and associated parking adjacent to Palomar Airport Road. To the east of the project site is an existing gym and an undeveloped hillside. To the south of the West Parcel is an undeveloped hillside and residential uses located on the top of the hillside. To the south of the East Parcel is Laurel Tree Lane and multi-family residential developments. To the west of the project site are undeveloped hillsides designated as open space with single-family residences on top of the undeveloped hillside.

The McClellan-Palomar Airport is located approximately 1-mile northeast of the project site. According to the McClellan-Palomar Airport Land Use Compatibility Plan, the project site is located in Airport Influence Review Area 1, Safety Zone 6 (Traffic Pattern Zones), the Airport Land Use Compatibility Plan's Airport Overflight Notification Area, and the 60 to 65 community noise equivalent level (CNEL) noise contours of the Airport Land Use Compatibility Plan (San

Diego County Regional Airport Authority, 2010). Additionally, the project site is also located within the Federal Aviation Administration (FAA) Height Notification Boundary and is subject to the Part 77 Safe Efficient Use, and Preservation of the Navigable Airspace regulations (San Diego County Regional Airport Authority, 2010).

3.2.2 Existing General Plan and Local Coastal Program Land Use Designations

The project site has a General Plan land use designation of R-30, Residential, as shown in **Figure 3-3**, *General Plan Land Use Map*. The land use designation R-30 allows for residential uses of a density between 23 and 30 dwelling units per acre (City of Carlsbad, 2015).

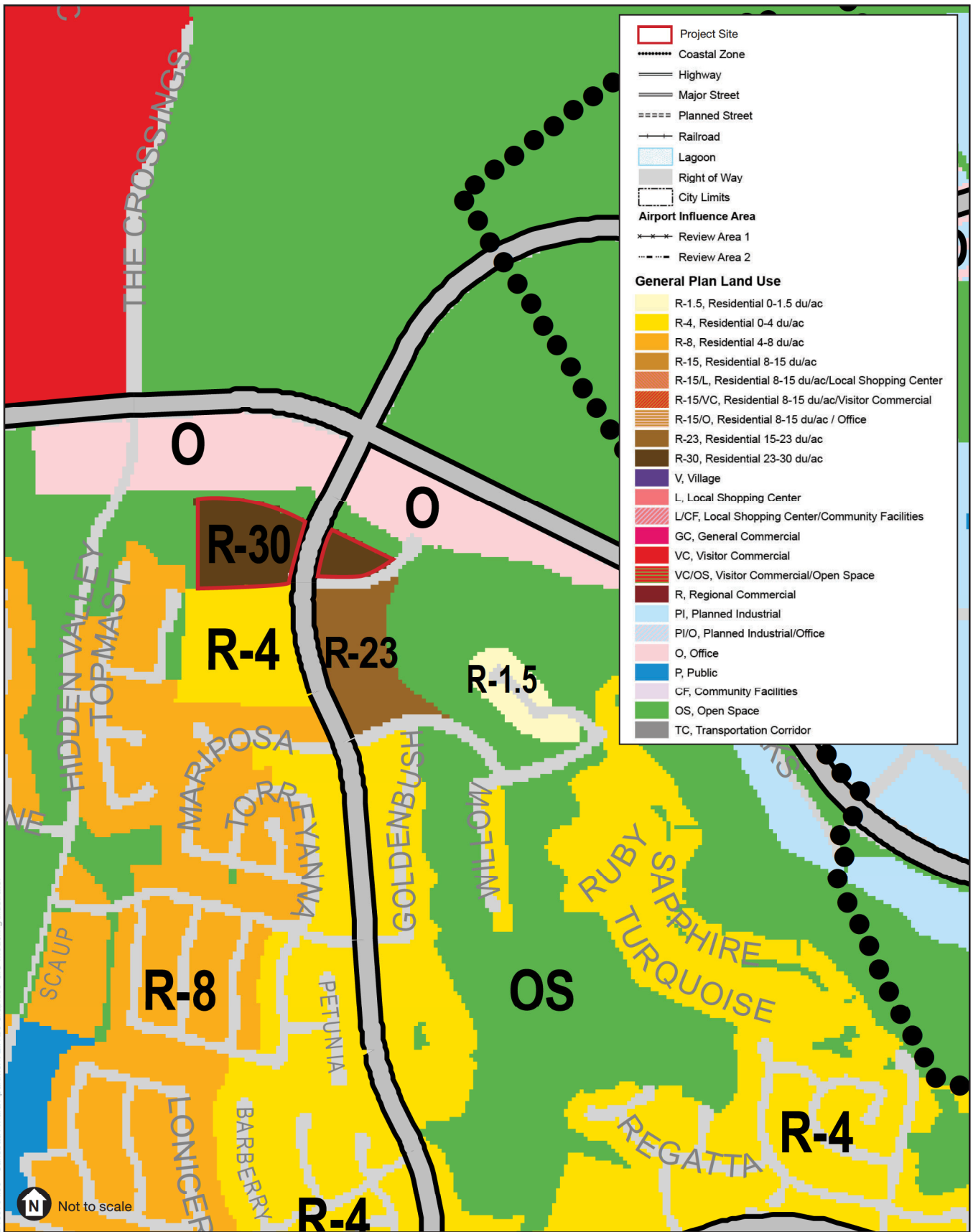
In addition, the project site is located within the coastal zone of the city, generally defined as the area between the Pacific Ocean and El Camino Real, as shown in **Figure 3-4**, *Coastal Zone Location*. The California Coastal Act (Public Resources Code Section 30000 et seq.) authorizes the State of California to regulate development within the Coastal Zone and requires that individual jurisdictions adopt Local Coastal Programs (LCPs) to implement the Coastal Act. The city's LCP, adopted in 1996, consists of the LCP's land use plan, which contains the policies and standards applicable specifically within the Coastal Zone, and the implementation plan, which contains the Coastal Zone zoning ordinance. The city's LCP includes six planning areas or segments, with the project site located within the Mello II Segment of the city's LCP (City of Carlsbad, 2017).

3.2.3 Existing Zoning Designations

The project site is zoned as Residential Density-Multiple (RD-M), which allows for medium- to high-density residential development, as shown in **Figure 3-5**, *Zoning Map*. Permitted uses within the RD-M zoning designation include single- and multi-family residential uses, mobile homes, residential care facilities, supportive housing, and transitional housing. A variety of other uses are allowed under this zoning ordinance with a Conditional Use Permit in accordance with Section 21.24.020 of the Carlsbad Municipal Code (CMC). Under the RD-M zoning designation, the allowable maximum building height is 35 feet and the maximum lot coverage is 60% (City of Carlsbad, 2003).

Chapter 21.90 of the CMC enacts the city's Growth Management Program (GMP), which guides balanced growth and development within the city by ensuring adequate housing, utilities, and public services and facilities.¹ Pursuant to the GMP and Chapter 21.90 of the CMC, the city is organized into 25 zones, and each zone has a Local Facilities Management Plan, which provides an analysis and establishes a plan for supplying the public facilities that will be needed in order to accommodate development within that zone. The project site is located within Local Facilities Management Plan Zone 5 of the city's GMP.

¹ Under the city's GMP, the city uses a three-phase approach to plan for facilities to match future demand: (1) The "City Facilities and Improvement Plan" establishes 11 public facility performance standards and establishes principles for capital financing plans. (2) Local Facility Management Plans are established for 25 sub-areas of the city. (3) Development is reviewed for compliance with the Citywide Plan and the appropriate LFMP. Special conditions, phasing, and other requirements may apply.



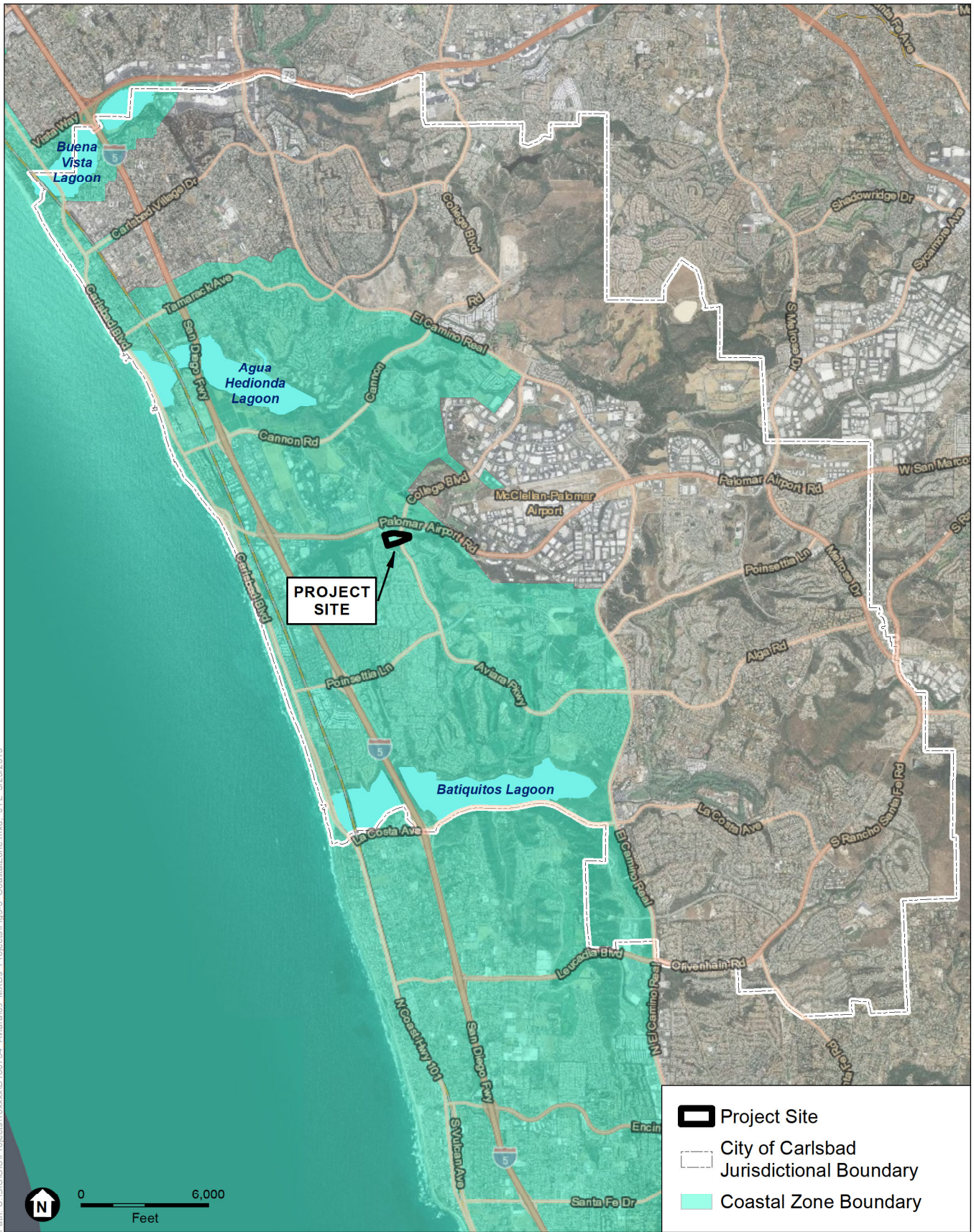
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SOURCE: City of Carlsbad, 2017

Aviara Apartments Project

Figure 3-3
General Plan Land Use Map





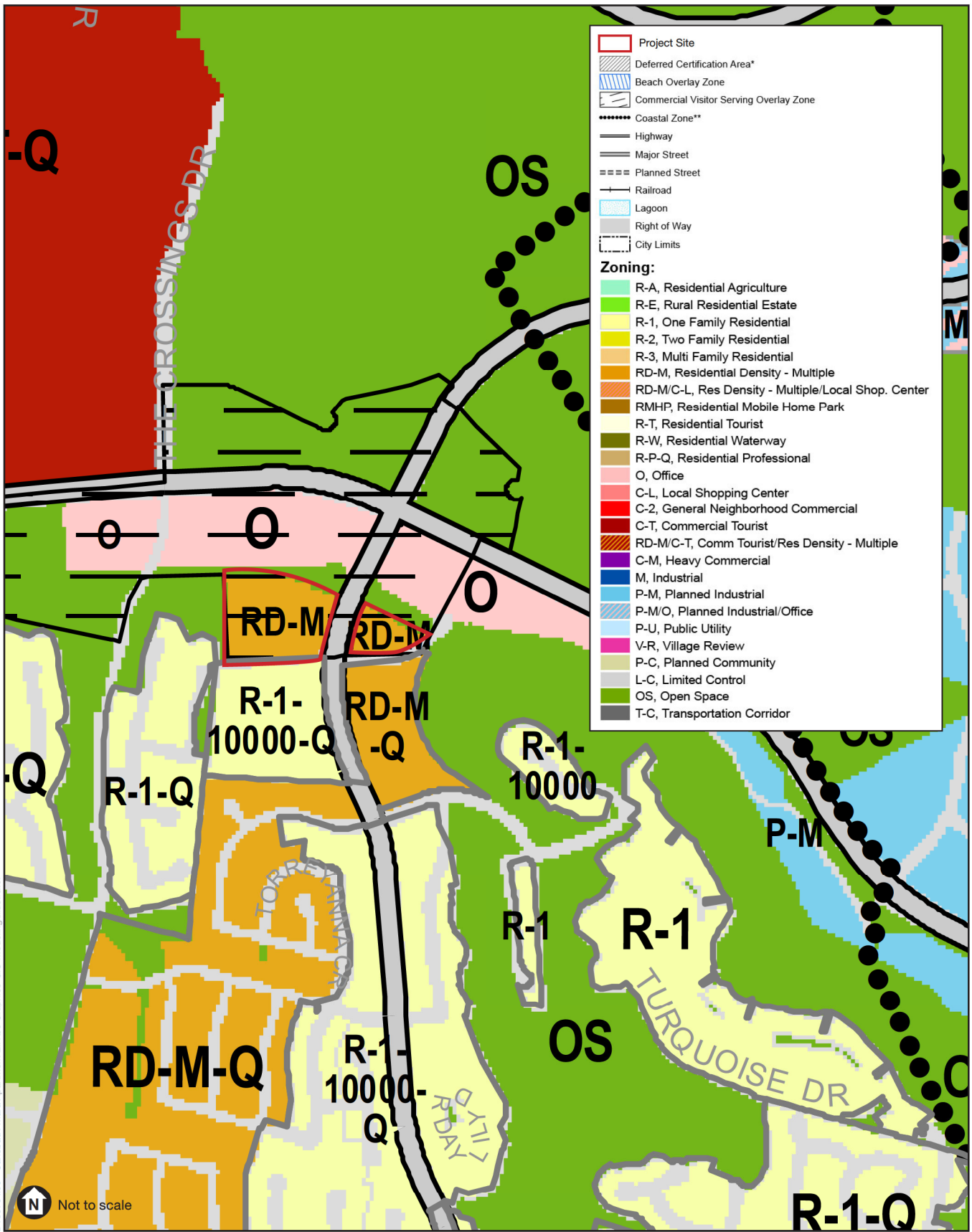
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SOURCE: SanGIS 2018

Avira Apartments Project

Figure 3-4
Coastal Zone Location





SOURCE: City of Carlsbad, 2017

Aviara Apartments Project

Figure 3-5
Zoning Map

3.3 Project Site History

As part of a Phase I Environmental Site Assessment, the project site's history was researched using a series of topographic maps, dating as far back as 1893. The 1893 through 1901 maps depict the project site as undeveloped land south of Canyon de las Encinas and the unnamed Encinas Creek. A tributary of Encinas Creek bisected the project site in a northwest to southeast direction. The surrounding area is depicted as undeveloped land of varying topography. Railroad tracks are shown farther west of the project site near the Pacific Ocean. Unpaved roads are also shown in the surrounding area. The 1948 and 1949 maps depict the project site as undeveloped land; however, an unpaved road appears to cross the northern end of the project site in an east-west direction. The 1968 map depicts the project site with the current building. The building is shown in an L-shape indicating the current warehouse and extended loading dock. The 1975 map depicts the present-day building on-site. No other features are shown on-site. The 1997 map shows the on-site building to be larger than the earlier maps. Aviara Parkway is shown transecting the project site in a north/south direction (Arcadis, 2016).

3.4 Project Objectives

Section 15124(b) of the CEQA Guidelines (14 Cal. Code Regulations Section 15000 et seq.) requires an EIR to include a statement of objectives for the proposed project that outlines the purpose of the project and allows for the development of feasible project alternatives. The project objectives provide the decision makers with a way to evaluate the proposed project against the alternatives and assist in the preparation of findings and overriding considerations, if necessary. The following are the objectives for the proposed project:

1. Provide a high-density multi-family residential community in compliance with the goals and policies of the Housing Element of the city's General Plan.
2. Use the site's unique elevation and surrounding geography to develop a project that is aesthetically pleasing and is compatible with and complementary to adjacent land uses.
3. Develop a high-density for-rent apartment project that is in compliance with the General Plan and Zoning Code, Local Coastal Program, Climate Action Plan, Habitat Management Plan, and the Zone 5 Local Facilities Management Plan.
4. Increase the city's inventory of housing diversity and accommodate increasing growth in the region by providing market rate and maximizing the amount of affordable for-rent apartments on an underutilized site that is in close proximity to existing employment and commercial opportunities as well as to recreational, public services, and transit options, consistent with city policies related to the development of housing for a range of income levels.
5. Provide affordable rental housing to a wide range of income levels, including extremely-low (30 percent average median income), low (60 percent average median income) and moderate (90 percent average median income), in a location that is adjacent to an existing affordable housing community to create the potential for shared educational opportunities and services that could benefit both communities.
6. Foster development patterns that promote orderly growth and prevent urban sprawl with the intent to reduce greenhouse gas emissions consistent with policies in the Climate Action Plan.

7. Develop a project that minimizes impacts to sensitive biological resources, to the greatest extent feasible, by redeveloping a previously developed and disturbed site.
8. Restore and contribute hardline preserve area to the Encinas Creek Preserve adjacent to the project site and include an adequate buffer between the proposed development and resources in the Encinas Creek Preserve, consistent with the Habitat Management Plan.

3.5 Project Characteristics

The approximately 9.5-acre project site, which is divided into West and East Parcels, would be developed with a multi-family residential community. Site improvements would include the construction of market-rate and affordable residential units, parking, common open space, resident amenities, landscaping and utilities/roadway improvements, and the dedication of open space. **Figure 3-6**, *Site Plan*, depicts the proposed site plan for the entire project site. **Figure 3-7**, *Proposed Development on the West Parcel*, and **Figure 3-8**, *Proposed Development on the East Parcel*, both show the proposed project features at a greater level of detail. **Figure 3-9**, *Conceptual Depiction of Project Site Upon Buildout*, illustrates the appearance of the project site once developed.

3.5.1 Total Allowed Units

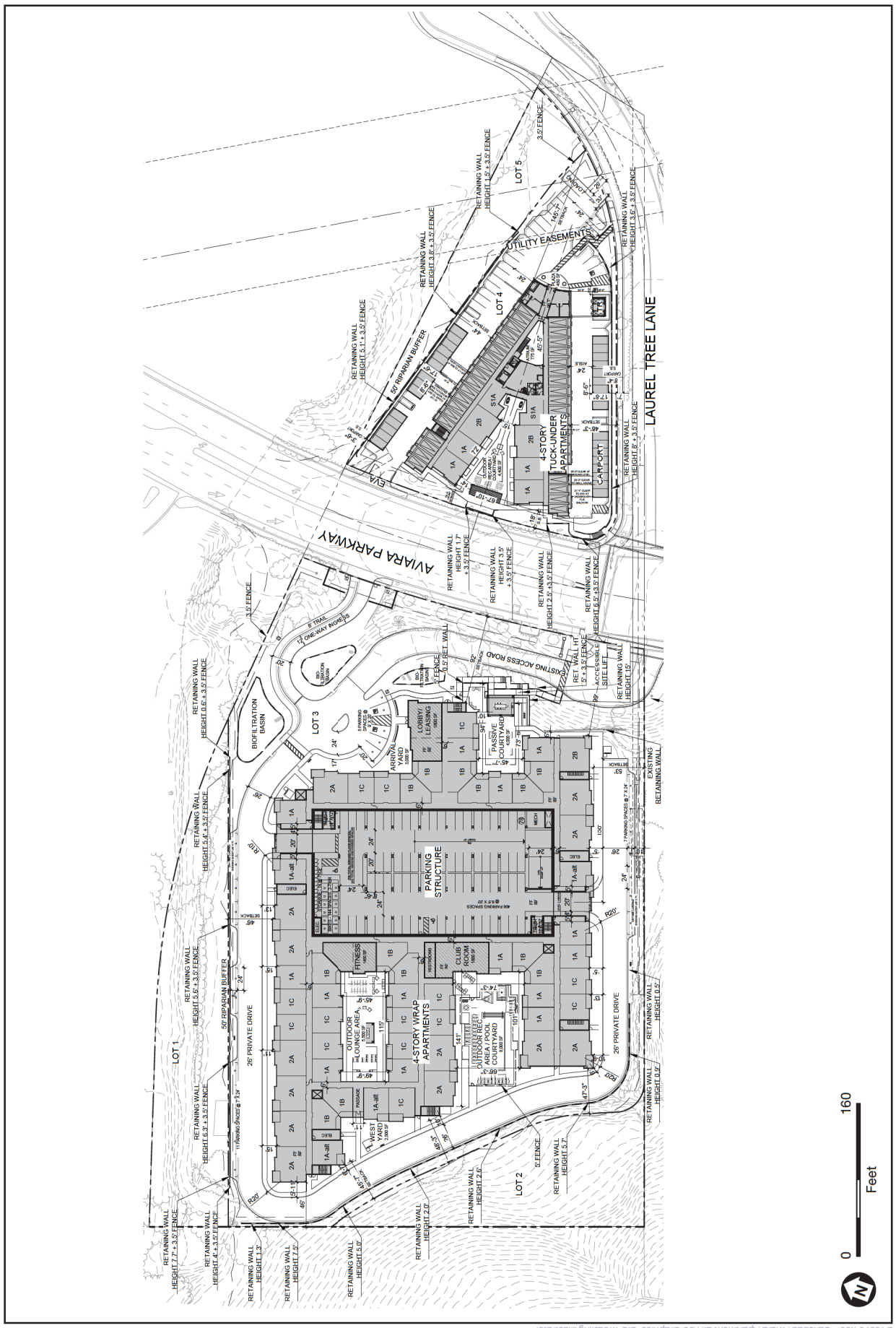
General Plan

Each of the city's residential land use designations specifies a density range that includes a minimum density, maximum density, as well as a Growth Management Control Point (GMCP) density (the GMCP density, which is discussed immediately below, ensures residential development does not exceed the number of dwellings permitted in the city's Growth Management Plan).

As previously mentioned, the project site has a General Plan land use designation of R-30, Residential. The land use designation R-30 allows for residential uses of a density between 23 and 30 dwelling units per acre with a GMCP of 25 dwelling units per acre (City of Carlsbad, 2015). Based solely on the project site's General Plan designation of R-30, and the project site's size of approximately 9.5 acres, the project site would be permitted to build up to 285 dwelling units. Using the GMCP would result in 238 dwelling units. However, as discussed below, only 224 residential units were allocated to the site in the city's last General Plan update.

Planning Commission Resolution No. 7114 and Excess Dwelling Units

City Council Policy 43 is the established policy for the number and allocation of Proposition E (Growth Management) "excess" dwelling units. Policy 43 establishes the city's policy regarding the number and the criteria for allocation of "excess" dwelling units which have become available as a result of residential projects being approved and constructed with less dwelling units than would have been allowed by the density control points of the GMP as approved by the voters as Proposition E on November 4, 1986.

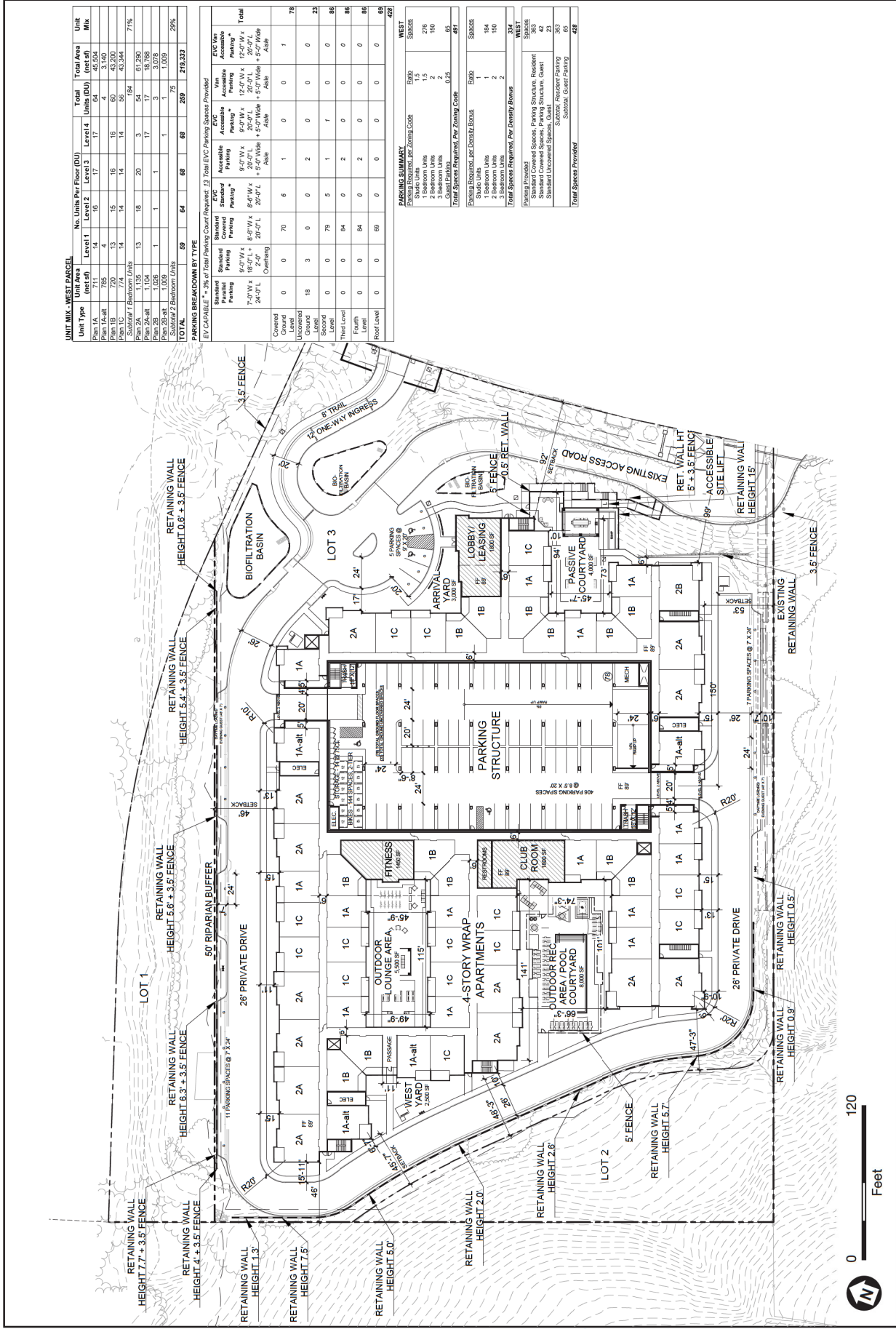


Avira Apartments Project
Figure 3-6
 Site Plan

SOURCE: KTG, 2019



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UNIT MIX - WEST PARCEL

Unit Type	Unit Area (SF)	No. Units Per Floor (DU)					Total Area (SF)	Total Units (DU)	Unit Mix
		Level 1	Level 2	Level 3	Level 4	Level 5			
Plan 1A	785	4	17	11	4	3,440	4	3,440	
Plan 1B	720	13	15	16	16	43,200	60	43,200	
Standard Bedroom Units	14	14	14	14	14	56	56	56	
Plan 2A	1,135	13	16	20	3	61,280	54	61,280	
Plan 2A-alt	1,104	1	1	1	1	17	17	17	
Plan 2B-alt	1,009	1	1	1	1	3	3	3	
Standard 2 Bedroom Units		59	64	68	68	259	259	259	
TOTAL								219,833	

PARKING BREAKDOWN BY TYPE

Standard Parking	Standard Parking	Standard Parking	Standard Parking	Total E.V.C. Parking Spaces Provided					Total
				Standard	Accessible	Visitor	EV	Misc	
9'-0" W x 24'-0" D	18	3	0	2	0	0	0	0	23
9'-0" W x 24'-0" D	0	0	75	5	1	1	0	0	86
9'-0" W x 24'-0" D	0	0	84	0	2	0	0	0	86
9'-0" W x 24'-0" D	0	0	84	0	2	0	0	0	86
9'-0" W x 24'-0" D	0	0	69	0	0	0	0	0	69
9'-0" W x 24'-0" D	0	0	70	6	1	0	0	1	78

PARKING SUMMARY

Category	Count	Code
Standard Covered Spaces	15	EBSD
Standard Uncovered Spaces	2	UBSD
Standard Uncovered Spaces	12	UBSD
Standard Uncovered Spaces	14	UBSD
Standard Uncovered Spaces	2	UBSD
Total Standard Required	37	UBSD

Avira Apartments Project
Figure 3-7
 Proposed Development on the West Parcel



SOURCE: KTGy, 2019



SOURCE: KTG, 2019

Aviara Apartments Project

Figure 3-9
Conceptual Depiction of Project Site Upon Buildout



Planning Commission Resolution No. 7114, adopted on July 24, 2015, allocates units from the Excess Dwelling Unit Bank to different sites across the city, including the project site. As stated in Table A of Planning Commission Resolution No. 7114, the project site is allocated 224 units from the city's Excess Dwelling Unit Bank. Further, as outlined in Planning Commission Resolution No. 7114, the project site is required to provide a minimum of 20% of all housing units as affordable housing units.

The proposed project would develop a total of 329 residential units at the project site, where 259 dwelling units would be built on the West Parcel and 70 units would be built on the East Parcel. The proposed project would include a total of 247 market-rate units and 82 affordable units (equating to 25% of all proposed units).

The 329 proposed residential units would exceed the General Plan allocation of 224 units and would require units from the city's Excess Dwelling Unit Bank. Since the proposed project would be providing affordable units in excess of requirements set forth by Planning Commission Resolution No. 7114 and CMC Chapter 21.85, the project applicant is requesting an allocation of 105 additional units from the city's Excess Dwelling Unit Bank, along with other modified development standards and waivers from the CMC, which are further discussed below.

3.5.2 Residential Development

The proposed project would demolish the existing warehouse, loading dock and shed, and ancillary parking and roads on the West Parcel. As mentioned above, the proposed project would develop 329 residential units at the project site, including 259 units on the West Parcel and 70 units on the East Parcel.

Development on the West Parcel would include a four-story, approximately 477,000-square-foot residential structure with 259 dwelling units, including an incorporated five-level parking structure (including roof parking). The combined structure on the West Parcel would be a maximum of 60 feet in height above final grade and would be built in a "wrap" configuration that generally would shield the parking from view of public roads. The West Parcel would contain 247 market-rate and 12 affordable rental units. The proposed project would include 184 one-bedroom and 75 two-bedroom units on the West Parcel. Twelve of the one-bedroom units would be set aside for residents with incomes that do not exceed 90% of the average median income (AMI).

The East Parcel would contain 70 affordable rental units in a four-story approximately 83,123-square-foot structure. Parking on the East Parcel would be provided at ground level in garages and a surface lot. The building on the East Parcel would be a maximum of 57 feet in height above final grades. The proposed project would include 14 studios, 23 one-bedroom, 26 two-bedroom, and 7 three-bedroom units on the East Parcel. Of the 70 units, 7 units would be set aside for residents with incomes that do not exceed 30% of the AMI, 62 units would be reserved for residents with incomes that do not exceed 60% of the AMI, and one unit would be the manager's unit.

3.5.3 Parking

Table 3-1, *Parking Requirement Summary*, outlines the parking requirements of the proposed project. CMC Section 21.44.020, specifies that 631 parking spaces would be required at the project site. As discussed below under Section 3.6.1, *Actions and Approvals by the City of Carlsbad*, the project applicant is requesting a waiver from the CMC parking requirements, which, if approved by the city, would allow the project applicant to provide fewer parking spaces than required by CMC Section 21.44.020.

**TABLE 3-1
PARKING REQUIREMENT SUMMARY**

Unit Type	Ratio	Spaces	
		East Parcel	West Parcel
<i>Parking Required, Per Zoning Code²</i>			
Studio Units	1.5	21	---
1-Bedroom Units	1.5	35	276
2-Bedroom Units	2	52	150
3-Bedroom Units	2	14	---
Guest Parking	0.25	18	65
Total Spaces Required at Each Parcel, Per Zoning Code		140	491
Total Spaces Required (Combined)		631	

SOURCE: KTG Architecture and Planning, 2019.

**TABLE 3-2
PROPOSED PROJECT PARKING**

Parking Type Provided	Spaces	
	East Parcel	West Parcel
Standard Covered Spaces, Garage, Resident	38	---
Standard Covered Spaces, Carport, Resident	32	---
Standard Covered Spaces, Parking Structure, Resident	---	363
Standard Covered Spaces, Parking Structure, Guest	---	42
Standard Uncovered Spaces, Residents	32	---
Standard Uncovered Spaces, Guest	3	23
Subtotal, Resident Parking	102	363
Subtotal, Guest Parking	3	65
Total Spaces Proposed at Each Parcel	105	428
Total Spaces Proposed (Combined)	533	

SOURCE: KTG Architecture and Planning, 2019.

² CMC Section 21.44.020 et seq.

Table 3-2, *Proposed Project Parking*, outlines the proposed project’s parking supply. The proposed project would provide 533 parking spaces across the project site, subject to approval by the city. As shown in Table 3-2, *Proposed Project Parking*, the East Parcel would provide 105 parking spaces at the ground level in parking garages in addition to surface-level parking. The five-level parking structure on the West Parcel would provide 405 parking spaces in a “wrap” configuration wherein the residential units generally would shield the parking from public view. Surface parking for 23 vehicles is also provided on the West Parcel outside of the parking structure. Included in the total parking is one car share space on the East Parcel and one car share space on the West Parcel. Electric vehicle charging and parking would be provided for 10% of the total parking spaces per the 2019 CalGreen Code.

3.5.4 Open Space and Amenities

The proposed project would provide 37,570 square feet of resident amenities. Indoor amenities at the West Parcel would include a multipurpose/club room, a fitness facility, and a Wi-Fi café. Common open space features on the West Parcel would include an outdoor recreation area and pool courtyard, an outdoor lounge area, two passive courtyards, an arrival yard, entry plaza, and the West Yard. The West Parcel would also include an on-site leasing office. Indoor amenities at the East Parcel would include a multipurpose/club room. Common open space features on the East Parcel would include an outdoor recreation area, arrival yard, and entry plaza.

3.5.5 Landscape Plan

The proposed project would install landscaping at the project site that would be designed to be in compliance with the city’s Landscape Manual. The Landscape Manual contains policies and requirements associated with planting, irrigation, water conservation, streetscape, slope revegetation/erosion control, and fire protection. These policies and requirements are minimum standards, and projects are encouraged to exceed the standards whenever possible. The city would review the detailed landscape construction plans of the proposed project at the time grading permits are applied for to ensure compliance with city landscape requirements. The project site would include street trees on the project site’s frontages, and open space areas would be landscaped with native plants, including within the 50-foot buffer area established along the project site’s northern border with Encinas Creek (i.e., where native habitat does not currently exist). Landscaping is discussed in more detail in Section 4.3, *Biological Resources*.

3.5.6 Circulation and Utility Improvements

Circulation

As shown above in Figure 3-6, *Site Plan*, access to the West Parcel would be provided on Aviara Parkway via two separate points. Implementation of the proposed project would realign the existing access driveway on the northern half of the West Parcel to converge with a newly created two-way private access road that would wrap the entire perimeter of the West Parcel. An additional one-way point of ingress would be constructed to align with an existing access driveway along Aviara Parkway, closer to Palomar Airport Road, and would also connect to the newly created private access road. The private road would be 26 feet wide and would provide access to the parking structure. Access to the parking structure would also be provided in the

north and the south, via 20-foot driveways. On the East Parcel, access would be provided via Laurel Tree Lane and an emergency vehicle only access from Aviara Parkway.

In addition to the on-site circulation improvements, the project would also include several improvements consistent with the recommendations contained in the Transportation Impact Analysis prepared by Michael Baker International for the proposed project (MBI, 2019), which is included as Appendix J of this EIR. These are the following:

1. On Laurel Tree Lane, ADA-compliant sidewalk along the north side of Laurel Tree Lane would be provided.
2. On Laurel Tree Lane, Class II bicycle lanes from Aviara Parkway to the cul-de-sac would be striped.
3. For the segment of Aviara Parkway-College Boulevard from the project site to the bus stop 500' north of the intersection with Palomar Airport Road, an ADA accessible pad and bench would be installed.
4. For the segment of Aviara Parkway and Palomar Airport Road from the project site to the bus stop 130' west of the Aviara Parkway-College Boulevard/Palomar Airport Road intersection, a trash can and bench would be installed on the existing ADA accessible pad.
5. For the segment of Aviara Parkway and Palomar Airport Road from the project site to the transit stop 200' east of Aviara Parkway-College Boulevard/Palomar Airport Road intersection, 200' feet of sidewalk from College Boulevard to the existing transit stop would be constructed, per City standards. As well, a trash can, an accessible concrete pad, and a bench would be installed.
6. For the Aviara Parkway-College Boulevard / Palomar Airport Road intersection, a northbound overlap phase would be implemented.
7. For the Aviara Parkway / Laurel Tree Lane intersection, the existing southbound left turn pocket would be extended from 160 feet to 250 feet.
8. A Tier 2 Transportation Demand Management plan would be prepared and implemented.

More detail is provided within Section 4.14, *Transportation*, and in Appendix J.

Sewer Service

Sewer service would be provided by the City of Carlsbad Public Works Department. Due to elevation and grade separation, a private sewer lift station would need to be constructed within the West Parcel to connect to the city's sewer system within Aviara Parkway. The proposed sewer lift station would be located in the northeast corner of the West Parcel and would convey flow to a sewer access hole on the existing 8-inch sewer line in Aviara Parkway. Although the design is not yet finalized, the lift station would consist of a wet well with two submersible, centrifugal, cortex impeller, sewage solids-handling pumps. The lift station would include a valve vault that would be located near an emergency force main connection. Emergency sewage storage would be provided with an underground vault which would store up to 6 hours of sewage flow. Detailed design of the private lift station would be undertaken concurrently with the preparation of the final engineering and architectural plans for the proposed project (Dexter Wilson

Engineering, Inc., 2017a). The final engineering and architectural plans would require approval by the City of Carlsbad prior to issuance of a building permit

Photovoltaic System

In 2018, the California Building Standards Commission voted to require that all new housing developments in California, starting in 2020, must include a photovoltaic (PV) solar system. The vote was passed unanimously and was adopted into the California Green Building Standards Code by the California Energy Commission. Since building permits would be applied for after January 1, 2020, the proposed project must provide a PV solar system. In response to this requirement, the proposed project would include a 386 kilowatt (kW) PV solar system on the top of the proposed residential buildings. The solar panels on the West Parcel would generate 302 kW and the solar panels on the East Parcel would generate 82 kW. The proposed project would also include an efficient central solar water heating system per Carlsbad Ordinance CS-347.

Water System

Water service would be provided by the Carlsbad Municipal Water District. The water system would consist of a private domestic water system and a private fire protection system. The private domestic water system would install a new domestic service lateral and set a new domestic meter and backflow preventer for each of the parcels. The private fire protection system for the West Parcel would consist of two 8-inch fire service laterals that would extend off of existing infrastructure within Aviara Parkway. The private fire protection system at the East Parcel would consist of a single 8-inch fire service lateral extending off of existing infrastructure within Aviara Parkway and Laurel Tree Lane (Dexter Wilson Engineering, Inc., 2017b).

3.6 Project Construction

3.6.1 Construction and Building Activities

Construction of the proposed project would occur in phases over approximately 28 months, from June 2020 through September 2022. There would be two distinct building sites (i.e., West and East Parcels). Construction would be phased and begin with the demolition and clearing of the existing 50,000-square-foot building and hardscape on the West Parcel.

Existing building and paving materials would be recycled wherever possible and there would be a minimal amount of demolition debris sent to landfills as there are numerous recycling and landfill facilities near the project site. After demolition and site preparation, grading would begin with significant cut/fill excavation activities resulting in a net import of approximately 7,800 cubic yards on the East Parcel and approximately 42,000 cubic yards on the West Parcel. Haulers for all phases of construction would generally use Palomar Airport Road to travel in an east-west direction to access I-5 to the west or El Camino Real to the east to travel in the north-south direction. The approximate roundtrip travel distance for each haul truck is expected to be approximately 30 miles.

Following demolition, the next construction phase would consist of site preparation and grading on both the West and East Parcels, followed by utility work. Both sites would then commence vertical construction of their respective building structures. For the East Parcel, wood-framed

building construction would progress until the exterior is completed. Site finishes/paving and interior architectural finishes at the East Parcel would then occur concurrently so the East Parcel could be occupied by December 2021. For the West Parcel, construction of the concrete-framed parking structure would be completed first, followed by the exterior of the wood-framed apartment building. Site finishes/paving and interior architectural finishes at the West Parcel would then occur concurrently, so the West Parcel could be occupied by September 2022.

The approximate sequencing and duration of construction activities are shown in **Table 3-3, Construction Program Details**. In accordance with CMC Section 8.48.010, construction activities would be limited to 7:00 a.m. to 6:00 p.m., Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays. No construction activities are allowed on Sundays and federal holidays.

**TABLE 3-3
CONSTRUCTION PROGRAM DETAILS**

Phases (if applicable)	Number of Workers (maximum)	Start (month/date/year)	Finish (month/date/year)	Duration (work days)
West Demolition	10	6/1/2020	7/3/2020	25
Combined Site Preparation	10	7/6/2020	7/17/2020	10
Combined Grading	10	7/20/2020	8/14/2020	20
Combined Underground Utilities	10	8/17/2020	9/25/2020	30
East Building Construction	45	9/21/2020	11/12/2021	300
West Building Construction	55	9/28/2021	7/29/2022	475
East Architectural Coatings	60	9/27/2021	12/24/2021	70
West Architectural Coatings	75	5/16/2022	6/16/2022	90
East Paving	10	11/15/2021	12/24/2021	30
West Paving	10	8/1/2022	9/16/2022	35

SOURCE: SummerHill Apartment Communities

3.7 Project Approvals and Regulatory Requirements

3.7.1 Actions and Approvals by the City of Carlsbad

In conformance with Sections 15050 and 15367 of the CEQA Guidelines, the City of Carlsbad has been designated as the “lead agency,” which is defined as “the public agency which has the principal responsibility for carrying out or approving a project.” The following are discretionary actions and approvals that are required by the city for the proposed project:

- **Tentative Map (CT 2018-0002).** The applicant is requesting approval of a Tentative Tract Map required for development of the project site. A tentative tract map is required by the California Subdivision Map Act (Government Code Section 66426 et seq.)
- **Site Development Plan (SDP 2018-0002).** A Site Development Plan (SDP) is required for the approval of multi-family residential development having more than four dwelling units and required for waivers from the CMC, as further described below.
- **Coastal Development Permit (CDP 2018-0005).** A Coastal Development Permit is required to construct the proposed project. This permit is necessary as the project site is located in the

coastal zone within the Mello II Segment of the LCP, and is within the appeal jurisdiction of the California Coastal Commission.

- **Hillside Development Permit (HDP 2018-0001).** Grading of the proposed project site is subject to the city’s Hillside Development Ordinance as project areas contain hillside conditions that are defined as slopes greater than 15 feet in height and 15% in slope. The purpose of the Hillside Development Permit is to regulate grading per the city’s Hillside Development Ordinance (CMC Chapter 21.95) standards and policies.
- **Habitat Management Plan Permit (HMP 2018-0001).** A HMP Permit is required for projects that impact sensitive biological resources as defined pursuant to the HMP.
- **Final EIR Certification (EIR 2018-0001).** After the required public review of the Draft EIR, the city will respond to comments, edit the document, and produce a Final EIR to be certified by the city decision-maker as complete and providing accurate information concerning the environmental impacts from the implementation of the proposed project.

Site Development Plan Development Standards

As part of the proposed SDP, the project applicant is requesting the application of modified development standards pursuant to allowances in CMC Section 21.53.120. Per Planning Commission Resolution No. 7114, the project site has an allocation of 224 units from the city’s Excess Dwelling Unit Bank and would be required to provide a minimum of 20% of all units as affordable units, which exceeds the requirements of CMC Chapter 21.85. As mentioned above under Section 3.5.1, the proposed project would provide 25% affordable units. CMC Section 21.53.120 allows for a density increase and development standards modifications for affordable housing projects that provide affordable housing in excess of the requirements of CMC Chapter 21.85 with the approval of a SDP. The proposed project would construct 329 units, which would be 105 units beyond the city’s General Plan allocation for the project site. As such, the project applicant’s requested density increase would require an allocation of 105 “excess” dwelling units from the city’s Excess Dwelling Units Bank. Pursuant to CMC Chapter 21.53.120(B)(1) and the applicant’s request for a SDP approval, the proposed project seeks less restrictive development standards than would otherwise be applicable within the RD-M zone and within the R-30 General Plan land use designation.

Specifically, per Section 21.24.030 of the CMC, the maximum building height within the RD-M zone is 35 feet, and as mentioned above under Section 3.5.1, the maximum allowable density at the project site per the city’s General Plan R-30 designation is 23 to 30 dwelling units per acre. To accommodate the additional dwelling units from the city’s Excess Dwelling Units Bank, the density of the proposed project would increase to 40 dwelling units per acre and the building heights would increase to approximately 50 feet, with some architectural features reaching approximately 60 feet. Additional modifications to the standard development regulations are also proposed to accommodate the proposed residential density as described below (as permitted by the SDP process contained in CMC Section 21.53.120(B)(1)):

- Increase residential density from 23–30 dwelling units per acre as permitted in the R-30 General Plan land use designation to 40 dwelling units per acre.
- Increase residential building heights from the 35-foot height maximum as required per RD-M zoning designation to 60-foot height maximum.

- Reduce side yard setback requirements contained in CMC Section 21.24 from 5 feet to 3.5 feet to the carports on the East Parcel's north side.
- Reduce the parking requirements found in CMC Section 21.44.020 from 631 spaces required to 533 spaces.
- Request a 3.63-foot reduction in parking lot perimeter landscape border width from the 8 feet minimum contained in the city's Landscape Manual to the proposed 4.37 feet minimum on the south side the East Parcel.
- Request a 5.5-foot reduction in parking lot perimeter landscape border width from the 8 feet minimum contained in the city's Landscape Manual to the proposed 2.5 feet minimum on the north side the East Parcel.
- Request a standards modification from CMC 21.46.130 to allow walls and fences to exceed the 6-foot maximum height within the required side and rear yard setback areas.

3.7.2 Regulatory Requirements

Development of the project would require adherence to a variety of regulatory requirements, codes, and ordinances. When regulations or codes (in whole or in part) are required, establish specific performance standards (e.g., design requirements or construction or engineering standards), and do not require any discretionary action by a governmental agency in implementation, it is assumed they would be adhered to with project implementation.

3.7.3 Discretionary Actions and Approvals by Other Agencies

Title 14 Code of Federal Regulations Part 77 (14 CFR Part 77) *Safe, Efficient Use and Preservation of the Navigable Airspace* defines the various airport imaginary surfaces that protect the operating environments (airspace) surrounding an airport (FAA, 2010). In addition, 14 CFR Part 77 stipulates the notification requirements for any proposed construction or alterations that could impact the established imaginary surfaces of an airport. These requirements would apply to the proposed project. The Southwest Regional Office of the FAA reviewed project plans and determined the proposed project would not cause a hazard to air navigation in accordance with Title 14 CFR Part 77 (FAA, 2017).

The proposed project would require California Public Utilities Code Section 851 review and approval by the California Public Utilities Commission (CPUC). Section 851 review is required for newly proposed or improved easements, which are an asset paid for by the ratepayers. Section 851 mandates that any encumbrance of such an asset be approved by the CPUC and prohibits additional encumbrances that would reduce the value of any land asset, reduce the integrity (terms and conditions) of the asset, or could result in negatively impacted service and operational reliability unless the encumbrance is specifically approved by the CPUC. Section 851 review and approval begins after a project's EIR is completed and after San Diego Gas & Electric reviews and approves a project's final map.

CHAPTER 4

Environmental Impact Analysis

4.0 Introduction

This chapter lists the impact areas that will be discussed in subsequent sections, discusses the organization of each topical section and the terminology used in the environmental analysis, and describes the methodology related to the cumulative analysis.

As discussed within Chapter 6, *Other CEQA Considerations*, agricultural and forestry resources, mineral resources, and some specific issues related to aesthetics, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, and population and housing, would be less than significant, and thus are not addressed further within this Draft Environmental Impact Report (EIR).

The following impact areas are addressed in this EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Population and Housing
- Public Services
- Transportation
- Utilities and Service Systems
- Wildfire

The analysis of each environmental issue area includes the following elements.

Existing Conditions: Describes the existing physical conditions with regard to the environmental resource area reviewed within and in the vicinity of the project site. Each environmental topic provides a description of the baseline physical conditions by which the City of Carlsbad, as lead agency, determines whether an impact is significant (additional details regarding existing conditions may also be provided in the individual impact assessments).

Regulatory Setting: Describes the federal, state, regional, and local laws and regulations that will shape the way development occurs on the project site. Development of the project would require adherence to a variety of regulatory requirements, codes, and ordinances. When regulations or codes (in whole or in part) are required, establish specific performance standards

(e.g., design requirements or construction or engineering standards), and do not require any discretionary action by a governmental agency in implementation, it is assumed they would be adhered to with project implementation.

Thresholds and Methodology: Presents the criteria against which the significance of impacts is determined and identifies how impacts on an environmental issue were determined.

Project Impact Analysis: Presents the determination made for each threshold of significance.

Level of Significance before Mitigation: Summarizes the impact determination made prior to any applicable mitigation measures.

Environmental Mitigation Measures: Presents all applicable mitigation measures.

Level of Significance after Mitigation: Summarizes the impact level after applying any applicable mitigation measures.

Cumulative Impacts: Addresses the potential for an impact to be created as a result of the combination of the proposed project evaluated in the EIR together with other past, present, or reasonably foreseeable future projects causing related impacts.

4.0.1 Terminology Used in This Environmental Analysis

When evaluating the impacts of the proposed project and project alternatives, the level of significance is determined by applying the threshold of significance (significance criteria) presented for each resource evaluation area. The following terms are used to describe each type of impact:

No Impact: No adverse impact on the environment would occur, and mitigation is not required.

Less than Significant Impact: The impact does not reach or exceed the defined threshold of significance.

Less than Significant Impact with Mitigation: The impact reaches or exceeds the defined threshold of significance and mitigation is therefore required. Feasible mitigation measures, when implemented, will reduce the significant impact to a less-than-significant level.

Mitigation Measures: Mitigation refers to feasible measures that would be implemented to avoid or lessen potentially significant impacts. Mitigation may include:

- Avoiding the impact completely by not taking a certain action or parts of an action
- Minimizing the impact by limiting the degree or magnitude of the action and its implementation
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments

The mitigation measures would be proposed as a conditions of project approval and would be monitored to ensure compliance and implementation.

4.1 Aesthetics

This section provides an evaluation of the impacts of the proposed project on scenic vistas, scenic resources, visual character, and light and glare. Included as part of this analysis are photographs of the project site and visual simulations showing how views of the project site would change with implementation of the proposed project. For renderings of the proposed project, see Figure 3-9, *Conceptual Depiction of Project Site Upon Buildout*, in Chapter 3, *Project Description*, of this EIR.

4.1.1 Existing Conditions

The project site is located in the city of Carlsbad, approximately 1 mile east of Interstate 5, 2 miles west of El Camino Real, and 0.1-mile south of Palomar Airport Road. The 9.5-acre project site is bisected by Aviara Parkway, resulting in a 7.19-acre West Parcel and a 2.31-acre East Parcel. The West Parcel currently contains a warehouse, loading dock, surface parking and gravel road, while the East Parcel, which is bordered to the south by Laurel Tree Lane, was previously graded but is currently undeveloped and vegetated with non-native plant species. Elevations range from 82 to 144 feet above mean sea level on the West Parcel and from 94 to 111 feet above mean sea level on the East Parcel (GeoSoils, 2019). Surrounding land uses, as shown in Figure 3-2, *Project Site and Vicinity*, primarily consist of commercial office and residential uses intermixed with open space areas. The Encinas Creek riparian corridor is located north of the West and East Parcels beyond which is commercial development. Open space is located south and west of the West Parcel beyond which are residential uses. The Laurel Tree Apartments are located south of the East Parcel across Laurel Tree Lane, and open space is located east of the East Parcel.

Scenic Vistas

Generally, scenic vistas in Carlsbad consist of the scenic corridors and views to the coastline, open spaces, and hillsides. Natural areas and open spaces, including watershed features, hillsides, habitats, parks and vistas, are some of the most defining and integral components of the city's form and structure. Watershed drainages give the city its rolling topography in the east, resulting in areas with steep slopes ideal for protected habitat. Hillsides layered with trees and brush create unique, intimate spaces where many of the city's master planned communities and resorts are located (City of Carlsbad, 2015a).

No formally designated state or local scenic vistas or scenic highways are located in the vicinity of the project site (City of Carlsbad, 2017a). Furthermore, the project site is located near a topographic low point in the area (e.g., Encinas Creek), with an elevation that is consistent with commercial development to the north and below that of the residential development to the south. Because the project site is located in a topographic depression, it does not feature prominently in existing views of the surrounding hills and low ridgelines from adjacent uses. Photographs of the existing views from four adjacent viewpoints are described later in this section as part of the visual simulations of the proposed project conducted for this analysis.

Scenic Resources

Consistent with Appendix G of the State CEQA Guidelines, significant visual resources can include visually significant trees, rock outcroppings, and historic buildings, including where such are visible from a state scenic highway. The city also recognizes that landforms, vegetation, and water features can be visually significant (City of Carlsbad, 2017a). According to the General Plan, the project site does not contain water features, landforms, rock outcroppings or historic buildings that are considered significant. While the site does contain some trees, shrubs, and other vegetation, the trees or other vegetation are not visually unique. The project site does not contain any heritage trees, city-maintained trees or city-identified street trees along the project site frontages (City of Carlsbad, 2019). Furthermore, the city's General Plan Open Space, Conservation and Recreation Element does not designate the project site as Open Space Category 4 (open space for aesthetic, cultural, or educational purposes) (City of Carlsbad, 2015b). The project site abuts the Encinas Creek riparian corridor, which is visually prominent from the project site and partially prominent from Aviara Parkway, appearing as vegetated landscape.

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, no designated state scenic highways are located in the vicinity of the project site (Caltrans, 2019).

Visual Character

The overall visual character of the surrounding area is hilly, with residential and commercial buildings ranging in height from one to three stories and intermixed with open space. The topography of the area slopes down to Encinas Creek from both the north and south. As indicated above, the West Parcel is currently developed with urban uses, while the East Parcel has been graded but is currently vacant. Current development on the West Parcel includes a warehouse, a loading dock, a parking area, and associated gravel roads. The older and more industrial nature of this existing development is not characteristic of and generally conflicts with the character of the surrounding development, which is primarily commercial and residential buildings with a newer architecture style. The East Parcel is vegetated, and both parcels contain vegetated slopes (especially in the northern and western portions of the West Parcel). Photographs of the existing views from four adjacent viewpoints are provided later in this section as part of the visual simulations of the proposed project conducted for this analysis.

Light and Glare

The developed portion of the West Parcel currently contains some nighttime lighting associated with the existing on-site warehouse, as does the commercial development and associated lit surface parking lots north of the project site along Palomar Airport Road, the residential uses south of the West Parcel, and the Laurel Tree Apartments south of the East Parcel. Streetlights currently exist along both sides of Aviara Parkway in the vicinity of the project site, and at the Aviara Parkway/Laurel Tree Lane intersection. Additionally, automobile headlights generate additional light along the streets in the area. The East Parcel, the slope areas of the West Parcel, and the open space abutting the parcels, are currently unlit, and no street lights currently exist along the segment of Laurel Tree Lane fronting the East Parcel. Light levels in the vicinity of the

project site are generally low to moderate in the developed areas and low (as result of light trespass from adjacent lit areas) to dark in the undeveloped areas.

4.1.2 Regulatory Setting

State

The following state regulations provide an overall context for the consideration of site-specific issues at the project site. However, neither the California Scenic Highways Program nor the California Coastal Act provide environmental regulations or policies that specifically apply to the proposed project.

California Scenic Highways Program

The California Scenic Highways Program protects the value of scenic areas and the value of views from roads within California. The California State Legislature established the California Scenic Highway Program in 1963. This legislation sees scenic highways as “a vital part of the all-encompassing effort...to protect and enhance California's beauty, amenity and quality of life.” Under this program, a number of state highways have been designated as eligible for inclusion as scenic routes. As indicated previously, no designated state scenic highways are located in the vicinity of the project site (Caltrans, 2019).

California Coastal Act

The California Coastal Act authorizes the State of California to regulate development within the state coastal zone, defined as the area between the seaward limits of the state’s jurisdiction and 1,000 yards landward from the mean high tide line. In Carlsbad, the coastal zone boundary generally encompasses the area east of the Pacific Ocean to El Camino Real. While scenic resources are not specifically mentioned, Public Resources Code Section 30001.5 calls to “protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources.” The project site is located in the coastal zone (City of Carlsbad, 2017b).

Local

The section below provides a summary of the city’s ordinances, regulations, and policies that are related to the aesthetics and are applicable to the proposed project. Where provisions are required by code or ordinance (e.g., the CMC) it is presumed that the proposed project would adhere to the requirements. Where policies or guidelines are provided (i.e., they are not specific regulatory requirements) consistency of the project with the policies identified is described in the impact analysis that follows (Section 4.1.4, *Project Impact Analysis*).

City of Carlsbad Zoning Ordinance

In consideration of light and glare issues, the CMC does not have a specific section dedicated to the prevention of nuisance light and glare through regulation; rather, lighting is addressed for each land use type in the city’s Zoning Ordinance (CMC Title 21). For example, the project site is zoned Residential Density-Multiple (RD-M). CMC Section 21.24.140 states that the Planning Commission or City Council may impose special conditions or requirements for development in

this zone that include, but are not limited to, provisions for compatibility with surrounding land uses and conformity with General Plan goals, policies, and objectives. The analysis regarding light and glare (Impact 4.1-4) contained in Section 4.1.4, *Project Impact Analysis*, of this EIR addresses the project's potential for light and glare impacts consistent with the guidance provided by the CMC.

City of Carlsbad Hillside Development Regulations

The city's Hillside Development Regulations (Chapter 21.95 of the CMC), apply to slopes of 15% or greater and an elevation differential greater than 15 feet. Development of property with these conditions is subject to the Hillside Development regulations and guidelines, and requires approval of a Hillside Development Permit. The Hillside Development and Design Standards address: coastal zone hillside standards; development of manufactured slopes greater than 40% gradient, 15 feet in height, and greater than 10,000 square feet; contour grading; screening manufactured slopes; and hillside and hilltop architecture.

The following requirements in the Hillside Development Regulations, which are consistent with CMC Section 21.95.010, apply to the areas of the project site that have slopes of 15% or greater and an elevation differential greater than 15 feet:

- Implement the goals and objectives of the Land Use and Open Space/Conservation Elements of the Carlsbad General Plan.
- Assure hillside conditions are properly identified and incorporated into the planning process.
- Preserve and/or enhance the aesthetic qualities of natural hillsides and manufactured slopes by designing projects which relate to the slope of the land, minimizing the amount of project grading, and incorporating contour grading into manufactured slopes that are located in highly visible public locations.
- Assure that the alteration of natural hillsides be completed in an environmentally sensitive manner whereby lagoons and riparian ecosystems will be protected from increased erosion and no substantial impacts to natural resources areas, wildlife habitats, or native vegetation areas will occur.

As shown in Figure 4.6-1, *Slope Analysis Map*, in Section 4.6, *Geology and Soils*, the majority of the West Parcel, and all of the East Parcel, have slopes ranging from 0% to 25%, with the northern most and southwest portions of the West Parcel having slopes ranging from 25% to 40% (REC, 2018). Small portions of the project site that would not contain development have slopes of 40% or greater (REC, 2018).

An analysis of the project's consistency with the Hillside Development Regulations, CMC Section 21.95.010, is provided in Section 4.1.4, *Project Impact Analysis*.

City of Carlsbad Grading Ordinance

CMC Chapter 15.06 establishes minimum requirements for grading, including clearing and grubbing of vegetation, for the issuance of ministerial permits and to provide for the enforcement of the requirements. The intent is to achieve the following goals to the maximum extent feasible:

- Facilitate the planning, design, and construction of development sites to maximize safety and human enjoyment while protecting the surrounding natural environment as possible.
- Ensure compatibility of graded land development sites with surrounding land forms/uses.
- Prevent unnecessary and unauthorized grading, including clearing and grubbing of vegetation, on property within Carlsbad.
- Preserve natural plant communities and existing mature trees.
- Preserve significant cultural and archaeological sites.
- Promote the rapid restoration of graded slopes with fire resistant, drought tolerant landscaping that is aesthetically pleasing and that enhances adjacent habitat values.
- Protect public and private property, stormwater conveyance systems, downstream riparian habitats, waterways, wetlands, and lagoons by controlling soil erosion, sedimentation, and other potential adverse impacts caused by grading operations or which result as a consequence of the increased rate of surface water runoff from graded sites.

The analysis regarding visual character (Impact 4.1-3) contained in Section 4.1.4, *Project Impact Analysis*, of this EIR Section addresses how the project would comply with the requirements of the CMC that specifically focused on addressing the aesthetic effects of the project.

City of Carlsbad General Plan

The city's General Plan contains goals and policies that address aesthetic resources in the city. Specifically, policies in the Land Use and Community Design Element are applicable as summarized below. **Table 4.10-2, General Plan Consistency Determination Summary** (provided in Section 4.10.4, *Project Impact Analysis* of the Land Use and Planning section) provides a summary of the applicable General Plan land use goals and policies, including those for aesthetics, and a project consistency discussion for each. The specific goals and policies listed in this section are addressed in the Table 4.10-2 consistency analysis. As indicated therein, the proposed project would be consistent the applicable land use and aesthetic goals and policies of the General Plan.

Goals

Community Character, Design, and Connectedness

- 2-G.17 Ensure that the scale and character of new development is appropriate to the setting and intended use. Promote development that is scaled and sited to respect the natural terrain, where hills, public realm, parks, open space, trees, and distant vistas, rather than buildings, dominate the overall landscape, while developing the Village, Barrio, and commercial and industrial areas as concentrated urban-scaled nodes.
- 2-G.18 Ensure that new development fosters a sense of community and is designed with the focus on residents, including children, the disabled and the elderly by providing: safe, pedestrian- friendly, tree-lined streets; walkways to common destinations such as schools, bikeways, trails, parks and stores; homes that exhibit visual diversity, pedestrian-scale and prominence to the street; central gathering places; and recreation amenities for a variety of age groups.

Policies

Community Character and Design

- 2-P.41 Ensure that the review of future projects places a high priority on the compatibility of adjacent land uses along the interface of different residential density and non-residential intensity categories. Special attention should be given to buffering and transitional methods, especially, when reviewing properties where different residential densities or land uses are involved.
- 2-P.42: Ensure that development on hillsides, where permitted pursuant to the hillside development regulations of the Zoning Ordinance, is designed to preserve and/or enhance the visual quality of the preexisting topography.
- 2-P.43: Where feasible, locate development away from visible ridges; larger buildings, such as large retail stores and office and industrial development, should be arranged to minimize the buildings' visual appearance from major transportation corridors and vistas.
- 2-P.44: Encourage clustering of development to preserve natural terrain and maximize open space areas around developments.
- 2-P.45: Evaluate each discretionary application for development of property with regard to the following specific criteria:
- a. Site design and layout of the proposed buildings in terms of size, height and location, to foster harmony with landscape and adjacent development.
 - b. Site design and landscaping to provide buffers and screening where appropriate, conserve water, and reduce erosion and runoff.
 - c. Building design that enhances neighborhood quality, and incorporates considerations of visual quality from key vantage points, such as major transportation corridors and intersections, and scenic vistas.
 - d. Site and/or building design features that will reduce greenhouse gas emissions over the life of the project, as outlined in the Climate Action Plan
 - e. Provision of public and/or private usable open space and/or pathways designated in the Open Space, Conservation, and Recreation Element.
 - f. Contributions to and extensions of existing systems of streets, foot or bicycle paths, trails, and the greenbelts provided for in the Mobility, and Open Space, Conservation, and Recreation elements of the General Plan.
 - g. Compliance with the performance standards of the Growth Management Plan.
 - h. Development proposals which are designed to provide safe, easy pedestrian and bicycle linkages to nearby transportation corridors.
 - i. Provision of housing affordable to lower and/or moderate income households.
 - j. Policies and programs outlined in Local Coastal Program where applicable.
 - k. Consistency with applicable provisions of the Airport Land Use Compatibility Plan for McClellan-Palomar Airport.

4.1.3 Thresholds and Methodology

Thresholds

A significant impact would occur to aesthetics if the proposed project would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.
- Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

Methodology

This visual impact analysis is based on field observations and visual simulations. The analysis of potential impacts was based on changes to the existing visual character that would result from project implementation. In making a determination of the extent and implications of the visual changes, consideration was given to specific changes in the visual composition, character, and valued qualities of the affected and the extent to which the affected environment contained places or features that have been designated in plans and policies for protection or special consideration.

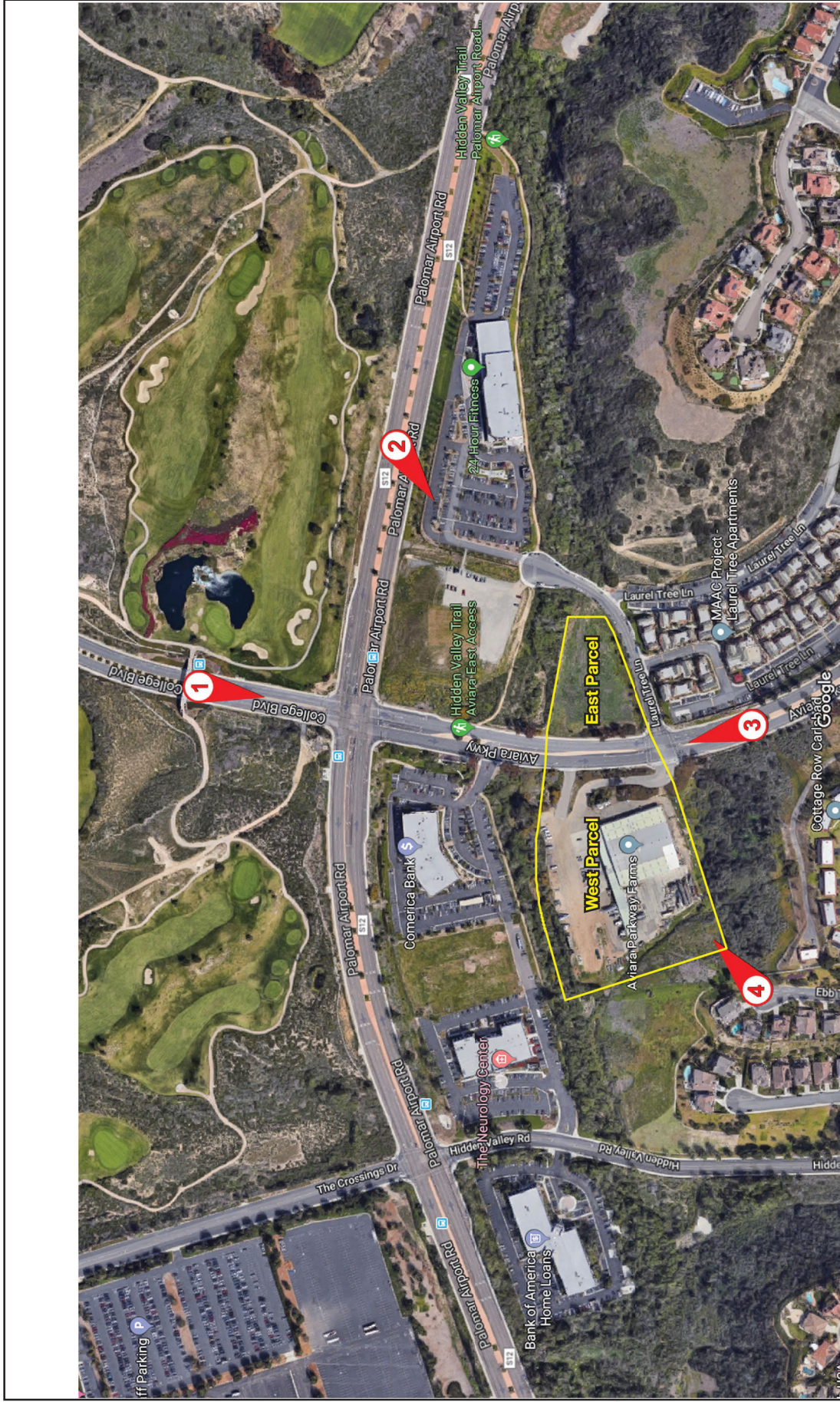
4.1.4 Project Impact Analysis

Scenic Vistas

Impact 4.1-1: Would the proposed project have a substantial adverse effect on a scenic vista?

As indicated previously, there are no designated state or local scenic vistas within the vicinity of the project site (City of Carlsbad, 2017a; Caltrans, 2019). Furthermore, the project site is located near a topographic low point in the area (e.g., Encinas Creek), with an elevation that is consistent with commercial development to the north and below that of the residential development to the south. Because the project site is located in a topographic depression, it does not feature prominently in existing views of the surrounding hills and low ridgelines from adjacent uses.

Visual simulations were completed to provide a visual representation of the changes in the views that would occur from these viewpoints under the proposed project. **Figure 4.1-1, *Visual Simulations Key Map***, identifies the locations of each of the four visual simulation locations, including from College Boulevard looking south (Viewpoint 1), Palomar Airport Road looking southwest (Viewpoint 2), Aviara Parkway looking north (Viewpoint 3), and from the public right of way within the single-family residential subdivision southwest of the West Parcel looking northeast (Viewpoint 4). **Figures 4.1-2 through 4.1-5, *Visual Simulations – Viewpoints 1 through 4***, include the view of the project site from each of these viewpoints under existing and project buildout conditions.



- Project Boundary
- # Viewpoint Location

Avlara Apartments Project

Figure 4.1-1-1
Visual Simulations Key Map

SOURCE: VisionScape Imagery, 2019





Existing View



Proposed View

D:\180764.00

SOURCE: VisionScape Imagery, 2019

Aviara Apartments Project

Figure 4.1-2
Visual Simulation – Viewpoint 1





Existing View



Proposed View

D:\180764.00

SOURCE: VisionScape Imagery, 2019

Aviara Apartments Project

Figure 4.1-3
Visual Simulation – Viewpoint 2





Existing View



Proposed View

D:\180764.00

SOURCE: VisionScape Imagery, 2019

Aviara Apartments Project

Figure 4.1-4
Visual Simulation – Viewpoint 3





Existing View



Proposed View

D180764.00

SOURCE: VisionScape Imagery, 2019

Aviara Apartments Project

Figure 4.1-5
Visual Simulation – Viewpoint 4



As depicted in the visual simulations, the rooflines of the proposed four- to five-story buildings would be below the ridgelines of the surrounding hills as seen from each of these viewpoints (e.g., the ridgelines would continue to be visible over the tops of the buildings associated with the proposed project). Therefore, because there are no designated scenic vistas within the vicinity of the project and because the proposed project would not feature prominently into view of surrounding hills and ridgelines, impacts to scenic vistas would thus be **less than significant**.

Scenic Resources

Impact 4.1-2: Would the proposed project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The project site does not contain rock outcroppings, historic buildings or water features, nor does the city designate the project site as Open Space Category 4 (open space for aesthetic, cultural, or educational purposes). Additionally, no designated state scenic highways are located in the vicinity of the project site.

The project site does contain vegetated slopes, a number of trees, and abuts the Encinas Creek riparian corridor, which is designated as Existing Hardline under the city's Habitat Management Plan (HMP) (Helix, 2019).¹ However, the proposed project would represent infill development on a site that is already partially developed, mostly graded, and zoned for residential uses. The project site does not contain any heritage trees, city-maintained trees, or city-identified street trees along the project site frontages (City of Carlsbad, 2019). Furthermore, the proposed project would adhere to city landscaping requirements, provide common landscaped areas, and retain much of the on-site slope area as dedicated open space (including providing a 50-foot buffer planted with native vegetation in the northern area of the development abutting the Encinas Creek riparian corridor), all of which would positively contribute to improving the visual quality of the project site.

For these reasons, the proposed project would not substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway, and the impact would be **less than significant**.

Visual Character

Impact 4.1-3: Would the proposed project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Visual Simulations

Visual simulations were completed from each of the viewpoints discussed previously to provide a visual representation of area landform changes and the developed condition that would occur

¹ Existing Hardline is defined as areas that have already been conserved for their wildlife value due to actions occurring in the past. Examples include on-site open space required to be set aside as part of a development project and areas that have been purchased and set aside as mitigation for project impacts (City of Carlsbad, 1999).

under the proposed project. The proposed landscape plans were utilized for landscaping design and placement. Figure 4.1-1, *Visual Simulations Key Map*, identifies the locations of each of the four viewpoints, while Figures 4.1-2 through 4.1-5, *Visual Simulations – Viewpoints 1 through 4*, include the view of the project site from each of these viewpoints under existing and project conditions.

In terms of applicable zoning and other regulations governing scenic quality, under the RD-M zoning designation, the allowable maximum building height is 35 feet. As described in Chapter 3, *Project Description*, the project is proposing modifications to the standard development regulations to be allowed to construct buildings with architectural features that would be up to 60 feet above final grade on the West Parcel and a maximum of 57 feet in height above final grades on the East Parcel. In addition, side yard setback requirements and perimeter landscape border widths would also be slightly reduced, while walls and fences would exceed the 6-foot maximum heights alongside and rear yard setback areas. The building heights, side yards, perimeter landscaping, and wall heights represented in visual simulations discussed herein illustrate the project's effect on scenic quality associated with the proposed modifications to the RD-M zoning regulations. Below is a discussion of the change in visual character that would occur as seen from each viewpoint under urbanized development of the proposed project.

Viewpoint 1: Figure 4.1-2, *Visual Simulation – Viewpoint 1*, looks southward down College Boulevard/Aviara Parkway from just north of Palomar Airport Road. As shown, the existing conditions view from this viewpoint is of Aviara Parkway, the Palomar Airport Road/Aviara Parkway intersection, the vegetated rolling topography, and the low ridgeline south of the project site. The existing Comerica Bank building located at the southwest corner of Palomar Airport Road and Aviara Parkway is clearly visible from this viewpoint, as are overhead high-tension electrical power lines and associated high towers. Under the proposed project, the proposed four-story residential building on the East Parcel would be clearly visible along the east side of Aviara Parkway, although the building would occupy a relatively small portion of the total field of view, with the tops of the building below the ridgeline to the south. The proposed four- to five-story residential building on the West Parcel would be barely visible from this vantage point due to intervening trees and would only slightly increase views of urban development in an already urbanized setting. While development on the East Parcel would be somewhat noticeable from this viewpoint, the proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Therefore, impacts from this viewpoint would be **less than significant**.

Viewpoint 2: Figure 4.1-3, *Visual Simulation – Viewpoint 2*, looks southwest from Palomar Airport Road. The existing conditions view includes trees and the 24-Hour Fitness surface parking lot the south side of Palomar Airport Road in the foreground, the East Parcel in the mid-ground, and the low-ridge south of the project site in the background. Under the proposed project, the four-story residential building on the East Parcel would be partially visible over the trees in the Encinas Creek riparian corridor, although the building would occupy a minority of the field of view, with the top of the building below the ridgeline to the southwest. Furthermore, it is likely that the project building would be barely visible during those months when the intervening deciduous trees have their leaves. The proposed project would only slightly increase views of

urban development in an already urbanized setting. In all, the visibility of the proposed building would be limited from this viewpoint, especially in summer, and the proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Therefore, impacts from this viewpoint would be **less than significant**.

Viewpoint 3: Figure 4.1-4, *Visual Simulation – Viewpoint 3*, looks north down Aviara Parkway from just south of the Aviara Parkway/Laurel Tree Lane intersection. The existing conditions view from this viewpoint includes Aviara Parkway in the foreground; the Aviara Parkway/Laurel Tree Lane intersection, the top of the existing warehouse on the West Parcel, and trees in the mid-ground; and Legoland, the Crossings at Carlsbad Golf Course, high-tension electrical power lines and electric transmission facilities, and the low ridgeline north of the golf course, in the background. Under the proposed project, portions of the four- to five-story residential buildings on the East and West Parcels would be visible on either side of Aviara Parkway between the trees, with the tops of the buildings below the low ridgeline to the north. The proposed project would occupy a minority of the total field of view and would slightly increase views of urban development in an already urbanized setting. As depicted in Viewpoint 3, the project would be noticeable from this viewpoint, however, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Therefore, impacts from this viewpoint would be **less than significant**.

Viewpoint 4: Figure 4.1-5, *Visual Simulation – Viewpoint 4*, looks northeast across the project site from the public right of way within the single-family residential subdivision just southwest of the West Parcel. The existing conditions view from this viewpoint includes vegetated hillside area in the foreground; the top of the existing warehouse and the associated existing surface parking lot on the West Parcel, the Comerica Bank and 24-Hour Fitness buildings, and several trees in the mid-ground; and Aviara Parkway, the Crossings at Carlsbad Golf Course, electric transmission facilities, and the low ridgeline north of the golf course, in the background. Under the proposed project, the sides and roofs of the residential building on the West Parcel would be visible in the foreground, and small portions of the proposed residential building on the East Parcel would be visible in the mid-ground.

The proposed development on the West Parcel, in particular, would be noticeable and occupy the majority of the foreground field of view, thereby increasing the views of urban development in an already urbanized setting. However, the existing vegetated slope in the foreground would be retained, as would views of most of the existing mid-ground and all of the existing background. Furthermore, the top of the proposed building would be below the low ridgeline to the north and northeast. Therefore, while the proposed project would be noticeable from this viewpoint, the proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Therefore, impacts from this viewpoint would be **less than significant**.

Construction Impacts

The project site would be visually disrupted during the construction phase of the proposed project. Similar to any project, new construction, landscaping, and other construction related work has the potential to result in temporary visual character impacts on-site. This impact would

be considered significant if large expanses of the project site are graded, then left in a barren state for an extended period of time. When a site is graded and left in a barren state for an extended period of time, it is typically considered to be a detriment to the visual character of the site and its surrounding. As outlined in Table 3-3, *Construction Program Details*, combined grading of the project site would be a standalone phase of the construction program and is anticipated to occur in the summer of 2020. The city's standard Tier 2 Stormwater Pollution Prevention Plan (SWPPP) requires that all graded areas not scheduled for construction within 60 days be hydroseeded and, therefore, not left in a barren state for an extended period of time. This requirement would be applied to all phases of development of the proposed project.

All construction activities would comply with the City of Carlsbad Hillside Development Regulations (as found in CMC Chapter 21.95) and would comply with the City of Carlsbad Grading Ordinance (as found in CMC Chapter 15.16), both of which are described above. The proposed project, in all applicable hillside areas, would comply with the city's Hillside Development Regulations. The surrounding hillside grades were considered and incorporated into the design of the proposed project. Grading activities and any associated impacts would be temporary in nature. As mentioned in Chapter 3, *Project Description*, combined grading would occur over a set period of time, so as to minimize the total duration of the grading phase, minimizing the need for extraneous grading over an extended period of time. Consistency with the city's Grading Ordinance (as found in CMC Chapter 15.16) would further prevent unnecessary grading and would ensure that graded land would be compatible with surrounding land uses.

For these reasons, construction activities associated with the proposed project would not substantially alter the visual character or quality of the site and surroundings, and the impact would be **less than significant**.

Operational Impacts

As indicated previously, the project site represents an urban infill site in the sense that existing urban development exists both north and south of the project site. The West Parcel is already developed with urban uses, both the West and East Parcels have been previously graded, and landscaping and open space would be provided in accordance with city requirements. The proposed project would preserve the majority of the on-site hillsides, including providing a 50-foot-wide buffer planted with native vegetation between the Encinas Creek riparian corridor and proposed development.

As presented in the visual simulations (Figures 4.1-2 through 4.1-5, *Visual Simulations – Viewpoints 1 through 4*) above, views of the project site from surrounding areas would change from warehouse to residential use on the West Parcel, and from vacant to residential use on the East Parcel. Trees would be provided along the project site's frontages on Aviara Parkway and Laurel Tree Lane, sidewalks would be provided along the project's Laurel Tree Lane frontage, and landscaping and open space meeting city requirements would be provided within the project site. The proposed residential buildings would be the dominant features on those portions of the project site to be developed (the parking structure in the West Parcel generally would be blocked from view by the residential buildings that would wrap the parking structure). Based on the

information above, the following rationale was used to determine the conclusion reached in this analysis:

1. The tops of the proposed buildings would be below area ridgelines as seen from each of the four viewpoints.
2. The project site is zoned for urban development rather than for open space or habitat area, thus the change in visual character is consistent with the future residential use anticipated in the General Plan.
3. The proposed project would be in close proximity to, and would be an extension of, the existing urban development along Aviara Parkway.
4. The proposed project would be required to conform to city zoning and other ordinances regarding aesthetic qualities such as landscaping, lighting, signage, and hillside protection.

While the proposed project would increase urban density and modify the standard development regulations of the underlying zone, these changes would not conflict with applicable zoning or other regulations governing scenic quality. For these reasons, development of the proposed project would not substantially alter the visual character or quality of the site and its surroundings and impacts to visual character resulting from the project would be **less than significant**.

Light and Glare

Impact 4.1-4: Would the proposed project create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?

The developed portion of the West Parcel currently contains some nighttime lighting associated with the existing on-site warehouse, as does the commercial development and associated lit surface parking lots north of the project site along Palomar Airport Road, the residential development south of the West Parcel, and the Laurel Tree Apartments south of the East Parcel. In addition, streetlights currently exist along both sides of Aviara Parkway in the vicinity of the project site, and at the Aviara Parkway/Laurel Tree Lane intersection, and automobile headlights generate additional light along the streets in the area. The East Parcel, the slope areas of the West Parcel, and the open space abutting the parcels are currently unlit, and no street lights currently exist along the segment of Laurel Tree Lane fronting the East Parcel. Light levels in the vicinity of the project site are generally low to moderate in the developed areas and low (as result of light trespass from adjacent lit areas) to dark in the undeveloped areas.

Under the proposed project, an illuminated multi-family residential development would replace the existing sparsely lit warehouse development in the West Parcel and unlit vacant area in the East Parcel. Project lighting would include that typical of multi-family residential development, with no high-intensity lighting (such as sodium vapor lights), and there would be no large expanses of glass or other reflective surfaces that could generate substantial glare. Although solar panels would be included on the rooftops of the residential buildings, the intent of solar technology is to increase efficiency by absorbing as much light as possible (which further reduces reflection and glare). Light absorption, rather than reflection, is central to the function of a solar panel so that it may absorb solar radiation and convert it to electricity. Solar panels are

constructed of dark-colored (usually blue or black) materials and are covered with anti-reflective coatings.

While the proposed project would increase light and glare on the West Parcel, and produce light and glare on the East Parcel where no light and glare currently exists, this light and glare would be generally consistent with that generated by the existing residential development to the south. Project light and glare would also occur in the proximity of (although not directly adjacent to) the light and glare associated with the commercial uses and associated surface parking lots along Palomar Airport Road, and adjacent to the existing street lighting along Aviara Parkway and at the Aviara Parkway/Laurel Tree Lane intersection. In addition, project light and glare would be buffered somewhat from adjacent areas by the existing and any required additional trees along Aviara Parkway and Laurel Tree Lane, the required/proposed landscaping within the interior of the project site, and the existing adjacent offsite and proposed on-site open space.

In addition, project lighting and exterior building materials would be required to comply with city standards regarding building, street, and recreational light and glare, and applicable city architectural design criteria. Toward that end, the following basic lighting provisions would be included in the design of the proposed project and will be conditions of approval of the Habitat Management Plan Permit:

- Street lights should provide a safe and desirable level of illumination for both motorists and pedestrians without intruding into residential areas.
- Lighting fixtures should relate to the human scale, especially in pedestrian areas.
- Lighting and lighting fixtures should complement project design and character.
- All lighting shall be pedestrian-oriented and friendly, but shall not be obtrusive or offensive.
- All street lighting shall conform to city standards or an approved theme lighting program, and shall be approved by the City Engineer.
- Illuminated entries should direct lighting glow to the ground and be limited to only the immediate vicinity of the entry.
- Lighted entries should not be distracting or create visual hot spots or glare, etc.
- Low sodium, downcast/fully shielded temporary (during construction activities if required) and permanent lighting (associated with development adjacent to the open space) shall be included within the project's lighting plan.

With compliance with applicable light and glare requirements and the proposed lighting provisions above, the proposed project would not create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area, and the impact would be **less than significant**.

4.1.5 Level of Significance before Mitigation

Implementation of the proposed project would not result in a significant aesthetics impact; therefore, no mitigation measures are proposed.

4.1.6 Environmental Mitigation Measures

No mitigation measures are proposed, as no significant impacts have been identified.

4.1.7 Level of Significance after Mitigation

No significant impact to aesthetics have been identified.

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4.2 Air Quality

This section analyzes the potential air quality impacts associated with construction activities, mobile sources, building energy demand, and other aspects of construction and operation of the proposed project that have the potential to generate criteria air pollutant emissions. Information contained in this section is summarized from air quality modeling. Air quality emissions calculations and the Health Risk Assessment (HRA) performed for the proposed project are included as Appendix B of this EIR. The analysis also relies upon information in the Transportation Impact Analysis (TIA) that was prepared for the proposed project in November 2019 (MBI, 2019) and is included in Appendix J of this EIR.

4.2.1 Existing Conditions

Description of Air Criteria Pollutants

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants, due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified as criteria air pollutants and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in air quality. The following criteria pollutants are regulated by the United States Environmental Protection Agency (EPA) and are subject to emissions control requirements adopted by federal, state, and local regulatory agencies.

Ozone

Ozone (O₃) is a secondary pollutant formed by the chemical reaction of volatile organic compounds (VOCs) and nitrogen oxides (NO_x) in the presence of sunlight under favorable meteorological conditions, such as high temperature and stagnation episodes. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable. According to the EPA, ozone can cause the muscles in the airways to constrict potentially leading to wheezing and shortness of breath (EPA, 2018a). Ozone can make it more difficult to breathe deeply and vigorously; cause shortness of breath and pain when taking a deep breath; cause coughing and sore or scratchy throat; inflame and damage the airways; aggravate lung diseases such as asthma, emphysema and chronic bronchitis; increase the frequency of asthma attacks; make the lungs more susceptible to infection; continue to damage the lungs even when the symptoms have disappeared; and cause chronic obstructive pulmonary disease (EPA, 2018a). Long-term exposure to ozone is linked to aggravation of asthma, and is likely to be one of many causes of asthma development and long-term exposures to higher concentrations of ozone may also be linked to permanent lung damage, such as abnormal lung development in children (EPA, 2018a).

According to the California Air Resources Board (CARB), inhalation of ozone causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms and exposure to ozone can reduce the volume of air that the lungs breathe in and cause shortness of breath (CARB, 2018). The EPA states that people most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are

active outdoors, especially outdoor workers (EPA, 2018a). Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure (EPA, 2018a). According to CARB, studies show that children are no more or less likely to suffer harmful effects than adults; however, children and teens may be more susceptible to ozone and other pollutants because they spend nearly twice as much time outdoors and engaged in vigorous activities compared to adults (CARB, 2018). Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults and are less likely than adults to notice their own symptoms and avoid harmful exposures (CARB, 2018). Further research may be able to better distinguish between health effects in children and adults (CARB, 2018).

Volatile Organic Compounds

VOCs are organic chemical compounds of carbon and are not “criteria” pollutants themselves; however, they contribute with NO_x to form ozone, and are regulated to prevent the formation of ozone (EPA, 2017b). According to CARB, some VOCs are highly reactive and play a critical role in the formation of ozone, other VOCs have adverse health effects, and in some cases, VOCs can be both highly reactive and have adverse health effects (CARB, 2016b). VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids, internal combustion associated with motor vehicle usage, and consumer products (e.g., architectural coatings, etc.) (CARB, 2016b).

Nitrogen Dioxide

Nitrogen Oxides (NO_x) is a term that refers to a group of compounds containing nitrogen and oxygen. The primary compounds of air quality concern include nitrogen dioxide (NO₂) and nitric oxide (NO). Ambient air quality standards have been promulgated for NO₂, which is a reddish-brown, reactive gas (CARB, 2019b). The principle form of NO_x produced by combustion is NO, but NO reacts quickly in the atmosphere to form NO₂, creating the mixture of NO and NO₂ referred to as NO_x (CARB, 2019b). Major sources of NO_x include emissions from cars, trucks and buses, power plants, and off-road equipment (EPA, 2016b). The terms NO_x and NO₂ are sometimes used interchangeably. However, the term NO_x is typically used when discussing emissions, usually from combustion-related activities, and the term NO₂ is typically used when discussing ambient air quality standards. Where NO_x emissions are discussed in the context of the thresholds of significance or impact analyses, the discussions are based on the conservative assumption that all NO_x emissions would oxidize in the atmosphere to form NO₂.

According to the EPA, short-term exposures to NO₂ can potentially aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms while longer exposures to elevated concentrations of NO₂ may contribute to the development of asthma and potentially increase susceptibility to respiratory infections (EPA, 2016b). According to CARB, controlled human exposure studies show that NO₂ exposure can intensify responses to allergens in allergic asthmatics (CARB, 2019b). In addition, a number of epidemiological studies have demonstrated associations between NO₂ exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and

intensified allergic responses (CARB, 2019b). Infants and children are particularly at risk from exposure to NO₂ because they have disproportionately higher exposure to NO₂ than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (CARB, 2019b). CARB states that much of the information on distribution in air, human exposure and dose, and health effects is specifically for NO₂ and there is only limited information for NO and NO_x, as well as large uncertainty in relating health effects to NO or NO_x exposure (CARB, 2019b).

Carbon Monoxide

Carbon Monoxide (CO) is primarily emitted from combustion processes and motor vehicles due to the incomplete combustion of fuel, such as natural gas, gasoline, or wood, with the majority of outdoor CO emissions from mobile sources (CARB, 2019a). According to the EPA, breathing air with a high concentration of CO reduces the amount of oxygen that can be transported in the blood stream to critical organs like the heart and brain and at very high levels, which are possible indoors or in other enclosed environments, CO can cause dizziness, confusion, unconsciousness, and death (EPA, 2016a). Very high levels of CO are not likely to occur outdoors; however, when CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease because these people already have a reduced ability for getting oxygenated blood to their hearts and are especially vulnerable to the effects of CO when exercising or under increased stress (EPA, 2016a). In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina (EPA, 2016a). According to CARB, the most common effects of CO exposure are fatigue, headaches, confusion, and dizziness due to inadequate oxygen delivery to the brain (CARB, 2019a). For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress; inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance (CARB, 2019a). Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO (CARB, 2019a).

Sulfur Dioxide

According to the EPA, the largest source of sulfur dioxide (SO₂) emissions in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities while smaller sources of SO₂ emissions include industrial processes such as extracting metal from ore; natural sources such as volcanoes; and locomotives, ships, and other vehicles and heavy equipment that burn fuel with a high sulfur content (EPA, 2018b). In 2006, California phased-in the ultra-low-sulfur diesel regulation limiting vehicle diesel fuel to a sulfur content not exceeding 15 parts per million (ppm), down from the previous requirement of 500 ppm, substantially reducing emissions of sulfur from diesel combustion (CARB, 2004). According to the EPA, short-term exposures to SO₂ can harm the human respiratory system and make breathing difficult (EPA, 2018b). According to CARB, health effects at levels near the state's 1-hour standard included asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath and chest tightness, especially during exercise or physical

activity and exposure at elevated levels of SO₂ (above 1 ppm) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality (CARB, 2019c). Children, the elderly, and those with asthma, cardiovascular disease, or chronic lung disease (such as bronchitis or emphysema) are most likely to experience the adverse effects of SO₂ (CARB, 2019c; EPA, 2018b).

Particulate Matter

Particulate matter (PM) air pollution is a mixture of solid particles and liquid droplets found in the air (EPA, 2018c). Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye while other particles are so small they can only be detected using an electron microscope (EPA, 2018c). Particles are defined by their diameter for air quality regulatory purposes: inhalable particles with diameters that are generally 10 micrometers and smaller (PM₁₀); and fine inhalable particles with diameters that are generally 2.5 micrometers and smaller (PM_{2.5}) (EPA, 2018c). Thus, PM_{2.5} comprises a portion or a subset of PM₁₀. Sources of PM₁₀ emissions include dust from construction sites, landfills and agriculture, wildfires and brush/waste burning, industrial sources, and wind-blown dust from open lands (CARB, 2017). Sources of PM_{2.5} emissions include combustion of gasoline, oil, diesel fuel, or wood (CARB, 2017). PM₁₀ and PM_{2.5} may be either directly emitted from sources (primary particles) or formed in the atmosphere through chemical reactions of gases (secondary particles) such as SO₂, NO_x, and certain organic compounds (CARB, 2017). According to CARB, both PM₁₀ and PM_{2.5} can be inhaled, with some depositing throughout the airways; PM₁₀ is more likely to deposit on the surfaces of the larger airways of the upper region of the lung while PM_{2.5} is more likely to travel into and deposit on the surface of the deeper parts of the lung, which can induce tissue damage, and lung inflammation (CARB, 2017).

Short-term (up to 24-hour duration) exposure to PM₁₀ has been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits (CARB, 2017). The effects of long-term (months or years) exposure to PM₁₀ are less clear, although studies suggest a link between long-term PM₁₀ exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer (CARB, 2017). Short-term exposure to PM_{2.5} has been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days; long-term exposure to PM_{2.5} has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children (CARB, 2017). According to CARB, populations most likely to experience adverse health effects with exposure to PM₁₀ and PM_{2.5} include older adults with chronic heart or lung disease, children, and asthmatics; children and infants are more susceptible to harm from inhaling pollutants such as PM₁₀ and PM_{2.5} compared to healthy adults because they inhale more air per pound of body weight than do adults, spend more time outdoors, and have developing immune systems (CARB, 2017).

Lead

Major sources of lead emissions include ore and metals processing, piston-engine aircraft operating on leaded aviation fuel, waste incinerators, utilities, and lead-acid battery manufacturers (EPA, 2017a). In the past, leaded gasoline was a major source of lead emissions; however, the removal of lead from gasoline has resulted in a decrease of lead in the air by 98% between 1980 and 2014 (EPA, 2017a). Lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system, and affects the oxygen carrying capacity of blood (EPA, 2017a). The lead effects most commonly encountered in current populations are neurological effects in children, such as behavioral problems and reduced intelligence, anemia, and liver or kidney damage (CARB, 2019d). Excessive lead exposure in adults can cause reproductive problems in men and women, high blood pressure, kidney disease, digestive problems, nerve disorders, memory and concentration problems, and muscle and joint pain (CARB, 2019d).

Sulfates

Sulfates are a family of chemicals that contain the fully oxidized ionic form of sulfur (SO_4^{2-}), in combination with metal and/or hydrogen ions. In California, emissions of sulfur-containing compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. Sulfate particles are part of PM_{2.5}, and so they have health effects similar to those from exposure to PM_{2.5}. These include reduced lung function, aggravated asthmatic symptoms, and increased risk of emergency department visits, hospitalizations, and death in people who have chronic heart or lung diseases (CARB, 2019e).

Vinyl Chloride

Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used in the process of making polyvinyl chloride (PVC) plastic and vinyl products, thus may be emitted from industrial processes. Vinyl chloride has been detected near landfills, sewage treatment plants, and hazardous waste sites. Vinyl chloride exposure is primarily an occupational concern (CARB, 2019f).

Hydrogen Sulfide

Hydrogen sulfide (H₂S) is a colorless gas with the odor of rotten eggs. The most common sources of H₂S emissions are oil and natural gas extraction and processing, and natural emissions from geothermal fields. It is also formed during bacterial decomposition of human and animal wastes, and is present in emissions from sewage treatment facilities and landfills. The odor of H₂S is extremely strong and foul, and it can induce tearing of the eyes and symptoms related to overstimulation of the sense of smell, including headache, nausea, or vomiting (CARB, 2019g).

Visibility Reducing Particles

Particulate matter (PM) pollution impacts the environment by decreasing visibility (haze). These particles vary greatly in shape, size and chemical composition, and come from a variety of natural and manmade sources. Some haze-causing particles are directly emitted to the air such as windblown dust and soot. Others are formed in the air from the chemical transformation of gaseous pollutants (e.g., sulfates, nitrates, organic carbon particles) that are the major constituents

of fine PM. These fine particles, caused largely by combustion of fuel, can travel hundreds of miles causing visibility impairment. Haze-causing pollutants have been linked to serious health problems and environmental damage as well (CARB, 2019h).

Toxic Air Contaminants

Toxic air contaminants (TACs) are generally defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. California Health and Safety Code Section 39655 defines a TAC as follows:

“Toxic air contaminant” means an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal act (42 U.S.C. Sec. 7412(b)) is a toxic air contaminant.

Factors, such as the amount of the chemical; its toxicity, and how it is released into the air, the weather, and the terrain, all influence whether the emission could be hazardous to human health (EPA, 1991). TACs may be emitted by a variety of industrial processes such as petroleum refining, electric utility and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust and may exist as particulates (e.g., PM10 and PM2.5) or as vapors (gases). TACs include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources (CARB, n.d.(a)).

The emission of toxic substances into the air can be damaging to human health and to the environment. Human exposure to these pollutants at sufficient concentrations and durations can increase the risk of cancer and non-cancer health effects such as watery eyes, respiratory irritation, nervous system problems, and birth defects. Pollutants deposited onto soil or into lakes and streams affect ecological systems and eventually human health through consumption of contaminated food. The carcinogenic potential of TACs is a particular public health concern because many scientists currently believe that there is no “safe” level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of contracting cancer (EPA, 1997).

Within the San Diego Air Basin, excluding diesel particulate matter (DPM), the incremental cancer risk from air toxics has been reduced by approximately 70% since 1989. As of 2004, the estimated risk was 142 in one million for Chula Vista and 158 in one million for El Cajon, down from 481 and 545 in one million, respectively, in 1989 (County of San Diego, 2007).

According to the County of San Diego *Guidelines for Determining Significance and Report Format and Content Requirements, Air Quality*, emissions of diesel particulate matter from the exhaust of diesel-fueled engines is a primary emission of health concern (County of San Diego, 2007). DPM differs from other TACs in that it is not a single substance, but rather a complex mixture of over 40 substances that are individually listed as TACs (County of San Diego, 2007).

Diesel exhaust is composed of two phases, gas and particle, and both phases contribute to the health risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic

hydrocarbons. The particle phase is also composed of many different types of particles by size or composition including PM_{2.5}. Diesel exhaust is emitted from a broad range of diesel engines; the on road diesel engines of trucks, buses and cars and the off road diesel engines that include locomotives, marine vessels and heavy duty equipment. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present (CARB, n.d.).

The most common exposure to DPM is breathing the air that contains diesel exhaust. The fine and ultra-fine particles are respirable (similar to PM_{2.5}), which means that they can avoid many of the human respiratory system defense mechanisms and enter deeply into the lung where the lung is most susceptible to injury (CARB, n.d.(b)).

Exposure to DPM in experimental animal inhalation studies has shown a range of dose-dependent lung inflammation and cellular changes and immunological effects. Based upon human and laboratory studies, there is considerable evidence that diesel exhaust is a likely carcinogen. Human epidemiological studies demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings (IARC, 2012).

Within the San Diego Air Basin, CARB estimates that DPM could add an additional 420 in one million to the ambient risk levels in San Diego County. CARB estimates that risk from DPM has decreased by about 50% from 870 in one million since 1990 (County of San Diego, 2007).

Existing Project Setting

The San Diego region is defined by the Pacific Ocean to the west, Orange and Riverside Counties to the north, Imperial County to the east, and Mexico to the south. There are semi-permanent high pressure systems that result in dry, warm summers, clear skies, and mild, occasionally wet winters. The topography affects the dispersal of pollutants as descending air from the high pressure system meets the cool marine air. This causes frequent temperature inversions that trap pollutants near the ground. Average temperatures (in °F) range from the mid-40s to the high 90s (Carlsbad, 2015).

The proposed project is located within the San Diego Air Basin and subject to the San Diego Air Pollution Control District (SDAPCD) regulations. The San Diego Air Basin is currently classified as a federal non-attainment area for the 2008 8-hour standard for ozone and a state non-attainment area for PM₁₀, PM_{2.5}, and O₃. The San Diego Air Basin encompasses the entire San Diego County, covering 4,260 square miles, and is an area of high air pollution potential. In particular, CO and NO_x emissions are worst in the fall and winter months. High CO levels are a result of low wind conditions and heavy automobile traffic, predominantly during the morning and evening commutes (Carlsbad, 2015).

Local Conditions

The EPA and SDAPCD maintain a network of air quality monitoring stations located throughout the San Diego Air Basin to measure ambient pollutant concentrations. The most recent data available from the EPA or SDAPCD for these monitoring stations are from years 2014 to 2018.

Due to its proximity to Carlsbad and similar geographic and climactic characteristics, the Camp Pendleton South monitoring station concentrations for ozone and NO₂ are considered most representative of ozone in Carlsbad. The Escondido monitoring station is the nearest location to Carlsbad where CO concentrations are monitored in 2014 and 2015 and the San Diego (11403 Rancho Carmel Drive) monitoring station is the nearest location to Carlsbad where CO concentrations are monitored from 2016 through 2018. The El Cajon monitoring station is the nearest location to Carlsbad where SO₂ concentrations are monitored. The Escondido monitoring station is the nearest location to Carlsbad where PM10 and PM2.5 concentrations are monitored in 2014 and 2015 and the San Diego (6125a Kearny Villa Road) monitoring station is the nearest location to Carlsbad where PM10 and PM2.5 concentrations are monitored from 2014 through 2018. The pollutant concentration data for these years are summarized in **Table 4.2-1, Ambient Air Quality Data**.

**TABLE 4.2-1
 AMBIENT AIR QUALITY DATA**

Pollutant/Standard	2014	2015	2016	2017	2018
O₃ (1-hour) (Camp Pendleton South Station)					
Maximum Concentration (ppm)	0.09	0.09	0.08	0.09	0.08
Days > CAAQS (0.09 ppm)	0	0	0	0	0
O₃ (8-hour) (Camp Pendleton South Station)					
Maximum Concentration (ppm)	0.075	0.076	0.073	0.081	0.068
Days > CAAQS (0.070 ppm)	4	2	4	4	0
Days > NAAQS (0.070 ppm)	4	2	4	4	0
NO₂ (1-hour) (Camp Pendleton South Station)					
Maximum Concentration (ppm)	0.060	0.060	0.072	0.063	0.048
98 th Percentile Concentration (ppm)	0.051	0.044	0.047	0.050	0.043
Days > CAAQS (0.18 ppm)	0	0	0	0	0
Days > NAAQS (0.100 ppm)	0	0	0	0	0
NO₂ (Annual) (Camp Pendleton South Station)					
Annual Arithmetic Mean (0.030 ppm)	0.007	0.007	0.006	0.006	0.006
CO (1-hour) (Escondido Station [2014-2015]; San Diego – 11403 Rancho Carmel Dr Station [2016-2018])					
Maximum Concentration (ppm)	3.8	3.1	2.0	2.0	1.9
Days > CAAQS or NAAQS (20 ppm or 35 ppm)	0	0	0	0	0
CO (8-hour) (Escondido Station [2014-2015]; San Diego – 11403 Rancho Carmel Dr Station [2016-2018])					
Maximum Concentration (ppm)	3.1	2.0	1.2	1.5	1.4
Days > CAAQS or NAAQS (9.0 ppm or 9 ppm)	0	0	0	0	0
SO₂ (1-hour) (El Cajon Station)					
Maximum Concentration (ppm)	0.0012	0.0012	0.0018	0.0011	0.0035
Days > CAAQS or NAAQS (0.25 ppm or 0.075 ppm)	0	0	0	0	0
SO₂ (24-hour) (El Cajon Station)					
Maximum Concentration (ppm)	0.0005	0.0004	0.0005	0.0004	0.0004
Days > CAAQS (0.04 ppm)	0	0	0	0	0

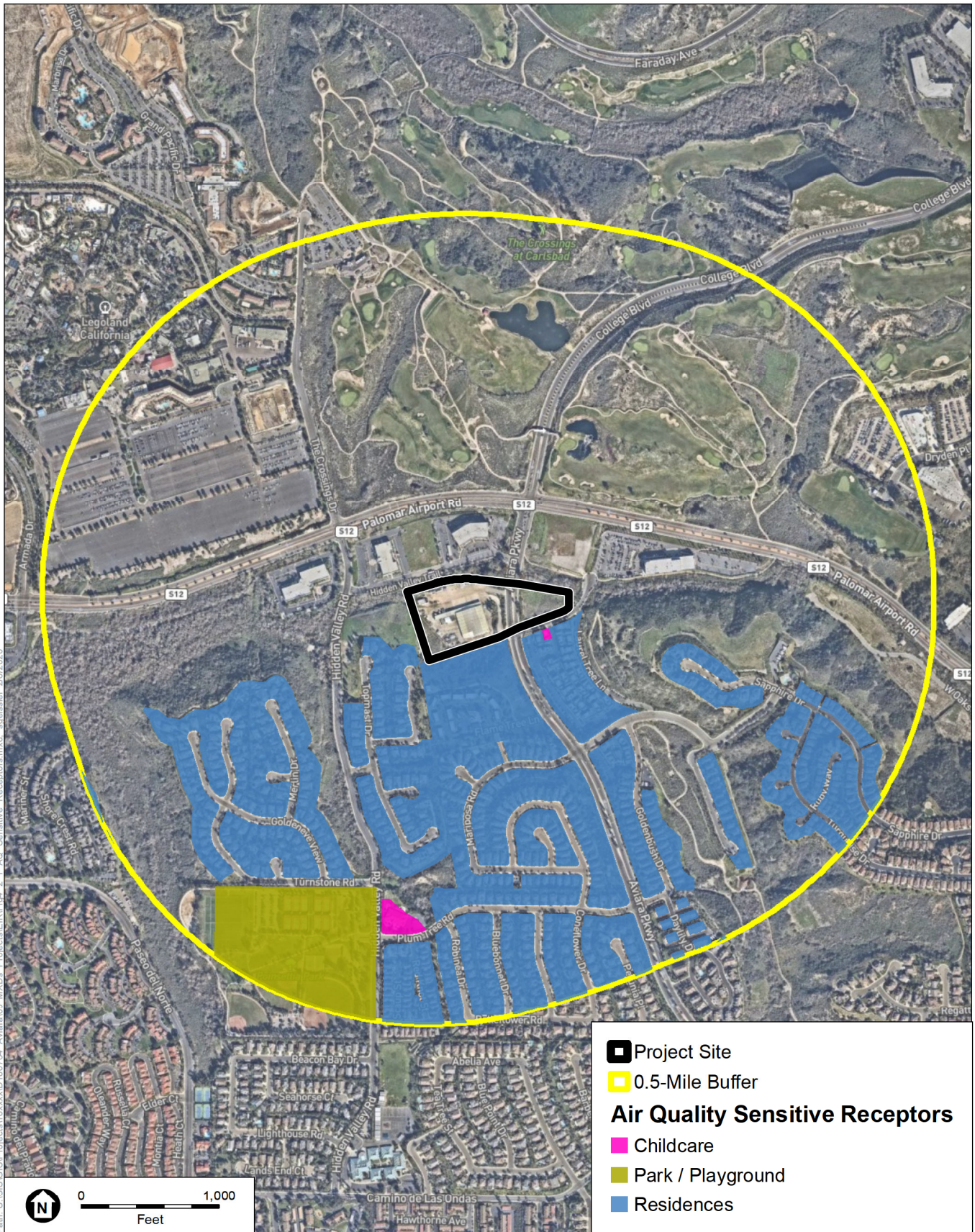
Pollutant/Standard	2014	2015	2016	2017	2018
PM10 (24-hour) (Escondido Station [2014-2015]; San Diego – 6125a Kearny Villa Road [2016-2018])					
Maximum Concentration ($\mu\text{g}/\text{m}^3$)	43	30	36	46	38
Samples > CAAQS (50 $\mu\text{g}/\text{m}^3$)	0	0	0	0	0
Samples > NAAQS (150 $\mu\text{g}/\text{m}^3$)	0	0	0	0	0
PM10 (Annual Average) (Escondido Station [2014-2015]; San Diego – 6125a Kearny Villa Road [2016-2018])					
Annual Arithmetic Mean (20 $\mu\text{g}/\text{m}^3$)	21.5	17.5	17.1	17.6	18.4
PM2.5 (24-hour) (Escondido Station [2014-2015]; San Diego – 6125a Kearny Villa Road [2016-2018])					
Maximum Concentration ($\mu\text{g}/\text{m}^3$)	30.4	29.4	20.3	27.5	32.2
98 th Percentile Concentration ($\mu\text{g}/\text{m}^3$)	21	26	13	16	22
Samples > NAAQS (35 $\mu\text{g}/\text{m}^3$)	0	0	0	0	0
PM2.5 (Annual) (Escondido Station [2014-2015]; San Diego – 6125a Kearny Villa Road [2016-2018])					
Annual Arithmetic Mean (12 $\mu\text{g}/\text{m}^3$)	9.6	8.6	7.6	8.0	8.3

NOTES: ppm = parts per million; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
SOURCE: CARB, 2019e; EPA 2018d.

Sensitive Receptors

Certain population groups, such as children, the elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases), are considered more sensitive to the potential adverse effects of air pollution than others. The nearest sensitive land uses to the project site are shown in **Figure 4.2-1, Air Quality Sensitive Receptors**, and include the following:

- Multi-family residential land uses are located to the south of the East Parcel, across Laurel Tree Lane, at the intersection of Aviara Parkway and Laurel Tree Lane, approximately 60 feet from the project site. Single-family residences are located on top of a hillside approximately 250 feet to the west of the West Parcel.
- The nearest park is Poinsettia Park, located at 6600 Hidden Valley Road, Carlsbad, CA, which is approximately 1,910 feet southwest of the project site.
- The nearest daycare is the MAAC Day Care (1307 Laurel Tree Lane) at the Laurel Tree apartments located approximately 285 feet south of the East Parcel as measured from the closest edge of the site. The Poinsettia KinderCare, 1200 Plum Tree Road, is Carlsbad, CA, is also in close proximity to the site (approximately 1,950 feet [0.37 miles] southwest of the project site).
- The nearest hospital is the Tri-City Medical Center, located at 4002 Vista Way, Oceanside, CA, which is approximately 4.4 miles north of the project site. The school nearest to any component of the project site is the Pacific Rim Elementary School (1100 Camino De Las Ondas) located approximately 0.55 miles south of the site. These receptors, which are over ½ mile away, would be less impacted by emissions associated with the proposed project because of the greater distance away from the project site.



SOURCE: SanGIS 2018; Mapbox, 2019.

Aviara Apartments Project

Figure 4.2-1
Air Quality Sensitive Receptors

4.2.2 Regulatory Setting

A number of statutes, regulations, plans, and policies have been adopted that address air quality issues. The proposed project is subject to air quality regulations developed and implemented at the federal, state, and local levels. This section provides a summary of pertinent air quality regulations affecting the proposed project at the federal, state, and local levels.

Federal

The federal Clean Air Act of 1963, which was the first federal legislation regarding air pollution control, has been amended numerous times in subsequent years, with the most recent amendments occurring in 1990. At the federal level, the EPA is responsible for implementation of certain portions of the Clean Air Act including mobile source requirements. Other portions of the Clean Air Act, such as stationary source requirements, are implemented by state and local agencies.

The Clean Air Act establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS) and specifies future dates for achieving compliance. The Clean Air Act also mandates that the state submit and implement a State Implementation Plan for areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. The 1990 amendments to the Clean Air Act identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones.

The sections of the Clean Air Act which are most applicable to the proposed project include Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions). Title I requirements are implemented for the purpose of attaining NAAQS for the following criteria pollutants: (1) ozone; (2) NO₂; (3) CO; (4) SO₂; (5) PM₁₀; and (6) lead. The NAAQS were amended in July 1997 to include an 8-hour standard for ozone and to adopt a NAAQS for PM_{2.5}. The NAAQS were last amended in September 2006 to include an established methodology for calculating PM_{2.5} and revoke the annual PM₁₀ threshold. **Table 4.2-2, *Ambient Air Quality Standards***, shows the NAAQS currently in effect for each criteria pollutant.

In addition to criteria pollutants, Title I also includes air toxics provisions which require the EPA to develop and enforce regulations to protect the public from exposure to airborne contaminants that are known to be hazardous to human health. In accordance with Section 112, the EPA established National Emission Standards for Hazardous Air Pollutants (NESHAPs).

Title II requirements pertain to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms the EPA uses to regulate mobile air emission sources. The provisions of Title II have resulted in tailpipe emission standards for vehicles which have strengthened in recent years to improve air quality.

**TABLE 4.2-2
AMBIENT AIR QUALITY STANDARDS**

Pollutant	Average Time	California Standards ^a		National Standards ^b			
		Concentration ^c	Method ^d	Primary ^{c, e}	Secondary ^{c, f}	Method ^g	
O ₃ ^h	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry	
	8 Hours	0.070 ppm (137 µg/m ³)		0.070 ppm (137 µg/m ³)			
NO ₂ ⁱ	1 Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemi- luminescence	100 ppb (188 µg/m ³)	None	Gas Phase Chemi- luminescence	
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		53 ppb (100 µg/m ³)	Same as Primary Standard		
CO	1 Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	None	Non-Dispersive Infrared Photometry (NDIR)	
	8 Hours	9.0 ppm (10mg/m ³)		9 ppm (10 mg/m ³)			
SO ₂ ^j	1 Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method) ⁹	
	3 Hours	—		—	0.5 ppm (1300 µg/m ³)		
	24 Hours	0.04 ppm (105 µg/m ³)		0.14 ppm (for certain areas) ^j	—		
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas) ^j	—		
PM10 ^k	24 Hours	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	20 µg/m ³		—			
PM2.5 ^k	24 Hours	No Separate State Standard	Gravimetric or Beta Attenuation	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	12 µg/m ³		12.0 µg/m ³ ^k			15 µg/m ³
Lead ^{l,m}	30-Day Average	1.5 µg/m ³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption	
	Calendar Quarter	—		1.5 µg/m ³ (for certain areas) ^m			Same as Primary Standard
	Rolling 3-Month Average ^m	--		0.15 µg/m ³			
Visibility Reducing Particles ⁿ	8 Hours	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70%. Method: Beta Attenuation and Transmittance through Filter Tape.			No Federal Standards		
Sulfates (SO ₄)	24 Hours	25 µg/m ³	Ion Chromatography				
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence				
Vinyl Chloride ^l	24 Hours	0.01 ppm (26 µg/m ³)	Gas Chromatography				

(footnotes continued on next page)

Pollutant	Average Time	California Standards ^a		National Standards ^b		
		Concentration ^c	Method ^d	Primary ^{c, e}	Secondary ^{c, f}	Method ^g

NOTES:

- ^a California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- ^b National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms/per cubic meter ($\mu\text{g}/\text{m}^3$) is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.
- ^c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ^d Any equivalent procedure which can be shown to the satisfaction of CARB to give equivalent results at or near the level of the air quality standard may be used.
- ^e National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ^f National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ^g Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
- ^h On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
- ⁱ To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.
- ^j On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated non-attainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
- ^k On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu\text{g}/\text{m}^3$ to 12.0 $\mu\text{g}/\text{m}^3$.
- ^l CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- ^m The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu\text{g}/\text{m}^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
- ⁿ In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

SOURCE: CARB, 2016.

The proposed project is located within the San Diego Air Basin, which is an area designated as non-attainment for ozone because it does not currently meet NAAQS regulated under the Clean Air Act. The EPA has designated San Diego County as a Moderate nonattainment area for the 8-hour ozone standard (SDAPCD, 2016a). Under the 2015 8-hour ozone standard, Moderate nonattainment areas have an attainment deadline of August 2024 (EPA, 2019a). Over the past several years, San Diego County has experienced substantial improvement in ambient ozone levels according to data collected at the monitoring stations. In particular, the number of days exceeding the federal 2008 ozone standard has dropped from 179 days in 1981 to 12 days in 2014 (SANDAG, 2015). Total region-wide NO_x and VOC emissions, which are ozone precursors, have been reduced by over 56% and 44%, respectively, during the 2000-2015 period. This data demonstrates that San Diego County has achieved a 21% reduction (improvement) in the ozone design value between 2000 and 2015 from approximately 0.100 ppm to 0.079 ppm, which is defined by the EPA as the three-year average of the annual fourth highest daily maximum eight-hour average ozone concentration (SDAPCD, 2016a). The current 2016 8-hour ozone attainment plan for the San Diego Air Basin addresses the 2008 8-hour ozone standard but not the 2015 8-hour ozone standard. It is anticipated that the next 8-hour ozone attainment plan for the San Diego Air Basin will address the 2015 standard as required by the EPA.

State

California Clean Air Act

The California Clean Air Act, signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS apply to the same criteria pollutants as the federal Clean Air Act but also include State-identified criteria pollutants, which include sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. CARB has primary responsibility for ensuring the implementation of the California Clean Air Act, responding to the federal Clean Air Act planning requirements applicable to the state, and regulating emissions from motor vehicles and consumer products within the state. Table 4.2-2, *Ambient Air Quality Standards*, shows the CAAQS currently in effect for each of the criteria pollutants as well as the other pollutants recognized by the state. As shown in Table 4.2-2, *Ambient Air Quality Standards*, the CAAQS include more stringent standards than the NAAQS for most of the criteria air pollutants.

Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. **Table 4.2-3**, *San Diego Air Basin Attainment Status*, provides a summary of the attainment status of the San Diego Air Basin with respect to the state standards. The San Diego Air Basin is designated as nonattainment for the ozone (1-hour and 8-hour), PM₁₀, and PM_{2.5} CAAQS and attainment for the CO, NO₂, SO₂, sulfates, and lead CAAQS, and unclassified for hydrogen sulfide and visibility-reducing particles.

**TABLE 4.2-3
SAN DIEGO AIR BASIN ATTAINMENT STATUS**

Pollutant	Federal Designation	State Designation
Ozone (1-hour standard)	Attainment ^a	Non-attainment
Ozone (8-hour – 1997)	Attainment (Maintenance)	Non-attainment
Ozone (8-hour – 2008)	Non-attainment (Moderate)	Non-attainment
CO	Unclassified/Attainment ^b	Attainment
PM10	Unclassified ^c	Non-attainment
PM2.5	Attainment	Non-attainment
NO ₂	Unclassified/Attainment	Attainment
SO ₂	Attainment	Attainment
Lead (Pb)	Attainment	Attainment
Sulfates	(no federal standard)	Attainment
Hydrogen Sulfide	(no federal standard)	Unclassified
Visibility Reducing Particles	(no federal standard)	Unclassified

NOTES:

^a The federal 1-hour standard of 0.12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in state implementation plans.

^b The approximate western half of the San Diego Air Basin (including the coastal regions of San Diego County) is designated attainment (maintenance), while the approximate eastern half is designated unclassifiable/attainment.

^c At the time of designation, if the available data does not support a designation of attainment or non-attainment, the area is designated as unclassifiable.

SOURCE: City of Carlsbad, 2019.

California Air Resources Board On-Road and Off-Road Vehicle Rules

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to DPM and other TACs (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given time.

In 2008, CARB approved the Truck and Bus Regulation to reduce NO_x, PM10, and PM2.5 emissions from existing diesel vehicles operating in California (13 CCR, Section 2025). The requirements were amended in December 2010 and apply to nearly all diesel fueled trucks and busses with a gross vehicle weight rating greater than 14,000 pounds. For the largest trucks in the fleet, those with a gross vehicle weight rating greater than 26,000 pounds, there are two methods to comply with the requirements. The first way is for the fleet owner to retrofit or replace engines, starting with the oldest engine model year, to meet 2010 engine standards, or better. This measure has been phased over 8 years, starting in 2015 and would be fully implemented by 2023, meaning that all trucks operating in the State subject to this option would meet or exceed the 2010 engine emission standards for NO_x and PM by 2023. The second option requires fleet owners, starting in 2012, to retrofit a portion of their fleet with diesel particulate filters achieving at least 85%

removal efficiency, so that by January 1, 2016 their entire fleet is equipped with diesel particulate filters. However, diesel particulate filters do not typically lower NO_x emissions. Thus, fleet owners choosing the second option must still comply with the 2010 engine emission standards for their trucks and busses by 2020.

In addition to limiting exhaust from idling trucks, CARB promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles in 2007. The In-Use Off-Road Diesel Fueled Fleets regulation aims to reduce emissions by installation of diesel soot filters and encourage the retirement, replacement, or repower of older, dirtier engines with newer emission controlled models (13 CCR, Section 2449). Implementation is staggered based on fleet size (which is the total of all off-road horsepower under common ownership or control), with the largest fleets beginning compliance by January 1, 2014. Each fleet must demonstrate compliance through one of two methods. The first option is to calculate and maintain fleet average emissions targets, which encourages the retirement or repowering of older equipment and rewards the introduction of newer cleaner units into the fleet. The second option is to meet the Best Available Control Technology (BACT) requirements by turning over or installing Verified Diesel Emission Control Strategies (e.g., engine retrofits) on a certain percentage of its total fleet horsepower. The compliance schedule requires that BACT turn overs or retrofits be fully implemented by 2023 in all equipment in large and medium fleets and across 100% of small fleets by 2028.

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program includes components to reduce smog-forming pollution, reduce greenhouse gas (GHG) emissions, promote clean cars, and provide fuels for clean cars. The zero emissions vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles (PHEV) in the 2018 to 2025 model years (CARB, 2017).

In May 2016, CARB released the updated Mobile Source Strategy that demonstrates how the State can simultaneously meet air quality standards, achieve GHG emission reduction targets, decrease health risk from transportation emissions, and reduce petroleum consumption over the next fifteen years, through a transition to ZEVs, cleaner transit systems and reduction of vehicle miles traveled. The Mobile Source Strategy calls for 1.5 million ZEVs (including plug-in hybrid electric, battery-electric, and hydrogen fuel cell vehicles) by 2025 and 4.2 million ZEVs by 2030. It also calls for more stringent GHG requirements for light-duty vehicles beyond 2025 as well as GHG reductions from medium-duty and heavy-duty vehicles and increased deployment of zero-emission trucks primarily for class 3–7 “last mile” delivery trucks in California. Statewide, the Mobile Source Strategy would result in a 45% reduction in GHG emissions, and a 50% reduction in the consumption of petroleum-based fuels (CARB, 2016b).

Regional

The section below includes a summary of the regional ordinances, regulations, and planning policies applicable to the proposed project. Where provisions are required by law or ordinance it is presumed that the proposed project would adhere to the requirements.

San Diego County Air Pollution Control District

The SDAPCD has the primary responsibility to for control of air pollution from all sources other than emissions from motor vehicles, which falls under the responsibility of CARB and EPA. Each air district must prepare and adopt an air quality management plan or regional air quality strategy (RAQS) to demonstrate how the district will achieve attainment for the CAAQS and NAAQS. The SDAPCD first prepared and submitted the 1991 RAQS to address San Diego County's non-attainment status for ozone. The latest revision was in 2016. The SDAPCD RAQS relies on information from the CARB, San Diego Association of Governments (SANDAG), and the SANDAG Transportation Control Measures Plan (County of San Diego, 2007). The 2016 Revision of the RAQS contains an overview of statutory requirements, air quality assessment, recent and projected future emission reduction rates, adopted and proposed control measures, overview of incentive programs, review of the Transportation Control Measures Plan, and reaffirmation of state emission 5% per year reduction of ozone precursors is not feasible, then alternative strategies must be identified and every feasible control measure implemented (SDAPCD, 2016b).

The SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the San Diego Air Basin. The following rules and regulations would apply and are relevant to the proposed project (City of Carlsbad, 2015):

SDAPCD Regulation II: Permits; Rule 20.2: New Source Review – Non-Major Sources.

Applies to any new or modified stationary source, to any new or modified emission unit and to any relocated emission unit that is not considered a major stationary source. As applied to new or modified sources, the rule requires (1) the use of Best Available Control Technology (BACT) where the emissions of PM10, NOX, VOC, or SOX would increase by 10 pounds per day or more; (2) an air quality impact analysis if the emissions of PM10, NOX, VOC, SOX, or lead exceed designated trigger levels; and (3) establishes public noticing requirements prior to issuance of a permit-to-operate from the SDAPCD.

SDAPCD Regulation IV: Prohibitions; Rule 50: Visible Emissions. Prohibits any activity causing air contaminant emissions darker than 20% opacity for more than an aggregate of 3 minutes in any consecutive 60-minute time period. In addition, Rule 50 prohibits any diesel pile-driving hammer activity causing air contaminant emissions for a period or periods aggregating more than 4 minutes during the driving of a single pile.

SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance. Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.

SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust. Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site. The rule defines the term “commercial” as work conducted for financial compensation by other than a tenant or property owner.

SDAPCD Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings. Architectural coatings were previously regulated under former District Rule 67.0 (Architectural Coatings, repealed effective January 1, 2016) and are now regulated under Rule 67.0.1 (Architectural Coatings, adopted on June 24, 2015). Rule 67.0.1 incorporates the tighter VOC limits of CARB’s 2007 Suggested Control Measures and is estimated to reduce VOC emissions in San Diego County by 839.5 tons per year (2.3 tons per day) with a cost-effectiveness of \$1.12 per pound of VOC reduced (SDAPCD, 2016b). Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

SDAPCD Regulation XI: National Emission Standards for Hazardous Air Pollutants; Subpart M, Rule 361.145: Standard for Demolition and Renovation. Requires owners and operators of a demolition or renovation activity to provide written notification of planned asbestos stripping or removal to the Control Officer no less than 10 days prior to demolition and/or asbestos removal. A Notification of Demolition and Renovation Form and fee is required with written notification. Procedures for asbestos emission control are provided under Rule 361.145 and must be followed in accordance with this regulation.

SDAPCD Regulation XII: Toxic Air Contaminants. Applies to any new, relocated, or modified emission unit which may increase emissions of one or more TACs and for which an Authority to Construct or Permit to Operate is required, or for which a Notice of Intention or Application for Certification has been accepted by the California Energy Commission. The increase in maximum incremental cancer risk at every receptor location shall be equal to or less than 1 in one million for any project for which new, relocated, or modified emission units that increases maximum incremental cancer risk are not equipped with best available control technology for toxics (T-BACT) and 10 in one million for units equipped with T-BACT.

San Diego Association of Governments

SANDAG is the federally designated metropolitan planning organization (MPO) for San Diego County region and is responsible for transportation planning. As a regional agency, SANDAG is not responsible for local land use management including land using zoning regulations or general plan designations (49 U.S.C. 5301 et. seq.) On October 9, 2015, the SANDAG Board of Directors adopted San Diego Forward: The Regional Plan (Regional Plan). This plan combines the Regional Comprehensive Plan (RCP) with the 2050 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), which was adopted in 2012.

The Regional Plan identifies the five following strategies to move the San Diego region toward sustainability:

- Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.
- Protect the environment and help ensure the success of smart growth land use policies by preserving sensitive habitat, open space, cultural resources, and farmland.
- Invest in a transportation network that gives people transportation choices and reduces GHG.
- Address the housing needs of all economic segments of the population.
- Implement the Regional Plan through incentives and collaboration.

Air quality has improved significantly over the past four decades as measured by the decreasing trend in the number of days with an Air Quality Index (AQI) over 100. The EPA uses the AQI as an index for reporting daily air quality. The greater the level of air pollution and the greater the health concern. For example, an AQI value of 50 represents good air quality with little potential to affect public health, while an AQI value over 300 represents hazardous air quality. An AQI value of 100 generally corresponds to the national air quality standard for the pollutant, which is the level EPA has set to protect public health. AQI values below 100 are considered satisfactory. When AQI values are above 100, air quality is considered to be unhealthy-at first for certain sensitive groups of people, then for everyone as AQI values get higher (EPA, 2019b). In particular, the number of days exceeding the federal 2008 ozone standard has dropped from 179 days in 1981 to 12 days in 2014 (SANDAG, 2015).

In February 2019, the SANDAG Board of Directors approved an action plan that extended development of a new vision for the 2021 Regional Plan to late 2021. While work progresses to develop this new vision, SANDAG prepared a 2019 Federal Regional Transportation Plan (2019 Federal RTP) that complies with federal requirements for the development of regional transportation plans, retains air quality conformity approval from the U.S. Department of Transportation, and preserves funding for the region's transportation investments. The 2019 Federal RTP builds on the previous plan, San Diego Forward: The 2015 Regional Plan (2015 Regional Plan), with updated project costs and revenues and a new regional growth forecast. The 2019 Federal RTP is consistent with the Final EIR for the 2015 Regional Plan approved by the SANDAG Board of Directors on October 9, 2015 (SANDAG, 2019).

Local

City of Carlsbad General Plan, Open Space, Conservation and Recreation Element

The city's General Plan contains goals and policies that address air quality in the city. Specifically, goals and policies in the Open Space, Conservation, and Recreation Element are applicable as summarized below. The air quality subsection describes criteria air pollutants, attainment statuses, air quality standards, and monitoring data. Consistency of the project with applicable goals and policies of the City of Carlsbad General Plan is addressed in Section 4.10, *Land Use and Planning*, specifically in **Table 4.10-2, General Plan Consistency Determination Summary**.

Goals

Air Quality

4-G.13 Protect air quality within the city and support efforts for enhanced regional air quality.

Policies

Air Quality

4-P.52 Participate in the implementation of transportation demand management programs on a regional basis.

4-P.55 Cooperate with the ongoing efforts of the U.S. Environmental Protection Agency, the San Diego Air Pollution Control District, and the State of California Air Resources Board in improving air quality in the regional air basin.

4-P.56 Ensure that construction and grading projects minimize short-term impacts to air quality.

- a) Require grading projects to provide a storm water pollution prevention plan (SWPPP) in compliance with city requirements, which include standards for best management practices that control pollutants from dust generated by construction activities and those related to vehicle and equipment cleaning, fueling, and maintenance;
- b) Require grading projects to undertake measures to minimize mono-nitrogen oxides (NO_x) emissions from vehicle and equipment operations; and
- c) Monitor all construction to ensure that proper steps are implemented.

4.2.3 Thresholds and Methodology

Thresholds

A significant impact would occur to air quality if the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Construction Emissions

SDAPCD Rule 20.2, New Source Review Non-Major Stationary Sources, has established quantitative screening level thresholds to determine whether there would be a significant impact to air quality for CEQA purposes. Air quality impacts related to the proposed project estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented below, which are based on SDAPCD thresholds, are exceeded during construction (City of Carlsbad, 2015):

- 100 pounds per day for PM10
- 55 pounds per day for PM2.5
- 250 pounds per day for NO_x
- 250 pounds per day for SO_x
- 550 pounds per day for CO
- 75 pounds a day for VOC¹

Currently, neither the City nor the County of San Diego have a localized threshold of significance for construction emissions.

Operational Emissions

Air quality impacts related to the proposed project estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented below, which are based on SDAPCD thresholds, are exceeded during operation (City of Carlsbad, 2015):

- 100 pounds per day or 15 tons per year for PM10
- 55 pounds per day or 10 tons per year for PM2.5
- 25 pounds per hour, 250 pounds per day, or 40 tons per year for NO_x
- 25 pounds per hour, 250 pounds per day, or 40 tons per year for SO_x
- 100 pounds per hour, 550 pounds per day, or 100 tons per year for CO
- 3.2 pounds per day or 0.6 tons per year for lead and lead compounds
- 75 pounds a day or 13.7 tons per year for VOC²

Toxic Air Contaminants

SDAPCD Regulation XII (Toxic Air Contaminants) states that the increase in maximum incremental cancer risk at every receptor location shall be equal to or less than 1 in one million for any project for which new, relocated, or modified emission units that increases maximum incremental cancer risk are not equipped with T-BACT and 10 in one million for units equipped with T-BACT. Per SDAPCD Rule 1210, the public health risk notification requirement for noncancer impacts is a health hazard index equal to or greater than 1.0.

¹ VOC threshold based on the significance thresholds recommended by the Monterey Bay Unified Air Pollution Control District for the North Central Coast Air Basin, which has similar federal and state attainment status as the San Diego Air Basin for ozone.

² VOC threshold based on the significance thresholds recommended by the Monterey Bay Unified Air Pollution Control District for the North Central Coast Air Basin, which has similar federal and state attainment status as the San Diego Air Basin for ozone.

Methodology

Construction Emissions

Daily Construction Emissions

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The emissions are estimated using the California Emissions Estimator Model (CalEEMod) (Version 2016.3.2) software, an emissions inventory software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professions to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California and is recommended by the SDAPCD and County of San Diego for construction emission calculations.

The input values used in this analysis were adjusted to be specific to the proposed project based on construction equipment and schedule information provided by the applicant. Phases of construction are divided by the East and West Parcels. The phases include West Parcel demolition, combined site preparation, combined grading, combined underground utilities, East Parcel building construction, West Parcel building construction, East Parcel paving, West Parcel architectural coating, West Parcel paving, and East Parcel architectural coating. Emissions from these activities are estimated by construction phase. Construction haul and vendor truck emissions were evaluated using regional heavy-duty truck emission factors from the CARB on-road vehicle emissions model (EMFAC), as incorporated into CalEEMod. Daily truck trips and default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst case day and do not represent the emissions that would occur for every day of construction of the proposed project. The maximum daily emissions are compared to the SDAPCD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emissions calculations are provided in Appendix B.

Toxic Air Contaminants

The greatest potential for TAC emissions during construction of the proposed project would be related to DPM emissions associated with heavy-duty equipment during demolition, excavation and grading activities, building construction, paving and architectural coating. Construction activities associated with the proposed project would be sporadic, transitory, and short term in nature. The construction HRA was performed in accordance with the 2015 Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA Guidance) (OEHHA, 2015). The analysis incorporates the estimated construction emissions and dispersion modeling using the EPA AMS/EPA Regulatory Model (AERMOD) model with meteorological data from the Camp

Pendleton meteorological monitoring station located at 21441 West B St, Camp Pendleton, CA, 92019.

For the risk assessment, AERMOD dispersion model output was converted into specific cancer risks and non-cancer chronic health hazard impacts. Health impacts addressed construction DPM emissions and the effects on nearby sensitive receptors (residential) within 1,000 feet of the project site. The analysis assumes that residential receptors may include newborns and children, as well as adults. Newborns and children tend to have higher exposure to pollutants because they have a higher breathing rate in proportion to the size of their body. In addition, the 2015 OEHHA Guidance applies age sensitivity factors to account for increased sensitivity to carcinogens during early-in-life exposure. As discussed in Subsection 4.2.1, above, the nearest sensitive receptors to the project site include multi-family residential land uses approximately 60 feet to the south of the project site and single-family residences approximately 250 feet to the west of the West Parcel. Assuming the presence of newborns and children at these nearest sensitive receptor locations provides for a conservative and health protective analysis. As discussed above, the nearest childcare center is the MAAC Day Care (1307 Laurel Tree Lane) at the Laurel Tree apartments located approximately 285 feet south of the East Parcel as measured from the closest edge of the site. Since it is assumed the nearby residential uses located approximately 60 feet south of the East Parcel would have newborns and children, it is not necessary to evaluate health impacts to children at the childcare center since it is located further away and would have correspondingly lower health risk impacts due to downwind dispersion of pollutants.

To assess the risk of potential health risk impacts (cancer, or other acute or chronic conditions) related to TACs exposure from airborne emissions during the proposed project's construction activities, a refined quantitative HRA was prepared. Detailed parameters and calculations for the HRA are provided in Appendix B.

Operational Emissions

The project's operational emissions are estimated using the CalEEMod software. CalEEMod was used to forecast the daily regional emissions from area sources that would occur during long-term operation of the proposed project. In calculating mobile-source emissions, the trip length values and trip rates were based on the defaults provided in CalEEMod.

Area source emissions are based on natural gas (building heating and water heaters), landscaping equipment, and consumer product usage (including paints) rates provided in CalEEMod. Natural gas usage factors in CalEEMod are based on the California Energy Commission (CEC) *California Commercial End Use Survey* (CEUS) data set, which provides energy demand by building type and climate zone (CEC, 2019). However, since the data from the CEUS are from 2002, correction factors are incorporated into CalEEMod to account for the appropriate version of the Title 24 Building Energy Efficiency Standards in effect.

Operational emissions are considered to be all net new emissions as a conservative estimate.

Toxic Air Contaminants

During long-term operations, TACs could be emitted as part of the periodic maintenance operations, cleaning, painting, etc., periodic visits to the project site from delivery trucks and service vehicles. TAC emissions from periodic maintenance operations, cleaning, painting, etc., are expected to be sporadic and inconsistent and would result in minimal exposure to off-site and on-site sensitive receptors. For these reasons, a qualitative operational HRA was conducted for project operations.

Freeways and high-traffic roads (an urban road with 100,000 vehicles per day, or a rural road with 50,000 vehicles per day) are considered sources of TAC emissions. CARB recommends siting sensitive land uses at least 500 feet from such sources. CARB also recommends avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week) and within 300 feet of any dry cleaning operation using perchloroethylene or 500 feet for drycleaners with two or more perchloroethylene machines. These criteria will be used to assess the potential for significant health risk impacts in excess of the significance threshold for TAC emissions from existing sources of emissions affecting the project and whether a more detailed health risk analysis is warranted.

CO Hotspots

There is no localized CO hotspot significance threshold methodology for the SDAPCD or the city. Given this, guidance was drawn from the County of San Diego Guidelines for Determining Significance (County of San Diego, 2007). The intent of the County's Guidelines is to provide a consistent, objective and predictable evaluation of significant effects for projects within the County's jurisdiction. However, given the geographic proximity of the proposed project to the County's jurisdiction, it is appropriate to apply the same methodologies and thresholds for hotspot analysis. Based on the County's guidance, CO hotspots may potentially occur at signalized intersections that operate at or below level of service (LOS) E with peak-hour trips for that intersection exceeding 3,000 trips. The Traffic Impact Analysis for the project identified that all roadway segments would operate at the acceptable Level of Service D (LOS D) or better under all study scenarios. Therefore, it is unlikely that the proposed project would contribute considerably to the formation of a CO hotspot.

Odors

Potential odor impacts are evaluated qualitatively, consistent with the guidance by SDAPCD and the County of San Diego. In addition, land use compatibility guidance from the neighboring South Coast Air Quality Management District (SCAQMD), which is the air district for Los Angeles County (excluding the Antelope Valley), Orange County and the urbanized areas of Riverside and San Bernardino Counties, is relied on for evaluating land uses typically associated with odorous emissions. The analysis includes reviewing the site plan for the proposed project and project description to identify new or modified odor sources. If it is determined that the proposed project would introduce a potentially significant new odor source or modify an existing odor source, then downwind sensitive receptor locations are identified, and a site-specific analysis is conducted to determine impacts of the proposed project. The proposed project is required to

conform to SDAPCD Rule 52 (Public Nuisance), which prohibits emission of any material that may be considered a nuisance.

4.2.4 Project Impact Analysis

Impact 4.2-1: Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?

As described above, the SDAPCD RAQS is the regional air quality plan that is applicable to the area surrounding the project site. The RAQS contains rules and regulations that are implemented by the SDAPCD to help the San Diego Air Basin meet the clean air standards required by federal and state law. The RAQS relies on projected growth in the County, as well as information on mobile, area, and other sources of emissions obtained from CARB and SANDAG to project future emissions within the County. Based on these emissions, reduction strategies are determined to reduce emissions in order to achieve or maintain attainment with state and federal standards. CARB mobile source emissions projections and SANDAG growth projections are generally based on the applicable General Plans (of the incorporated cities within the County and the County itself for unincorporated areas).

Therefore, projects that propose development consistent with the applicable General Plan would be consistent with the RAQS and the State Implementation Plan. If a proposed development exceeds the growth projections, it would have a potentially significant impact on air quality.

Per Planning Commission Resolution No. 7114, the project site would be required to provide a minimum of 20% of all units as affordable units, which exceeds the requirements of Carlsbad Municipal Code (CMC) Chapter 21.85. As mentioned in Section 3.5.1 of Chapter 3, *Project Description*, the proposed project would provide 25% affordable units. CMC Section 21.53.120 allows for a density increase and development standards modifications for affordable housing projects that provide affordable housing in excess of the requirements of CMC Chapter 21.85. Pursuant to CMC Chapter 21.53.120(B)(1), the proposed project seeks the application of less restrictive development standards than would otherwise be applicable within the RD-M zone and within the R-30 General Plan land use designation. Upon the city's approval, the proposed project would be consistent with the city's General Plan land use designation.

As discussed in detail Section 4.12, *Population and Housing*, of this Draft EIR, the project site is designated by the General Plan as R-30, Residential (with a density range of 23–30 dwelling units per acre (du/ac)). The proposed project is requesting an increase in density to 40 du/ac and an increase of 105 dwelling units from the 224 dwelling units initially allocated to the site, and is also proposing 25% for affordable housing units. CMC Section 21.53.120 provides for less restrictive development standards than the underlying zoning for affordable housing projects, including a density increase. According to the General Plan, residential projects must meet specific city criteria to be eligible for “excess dwelling units.” Such criteria include development of affordable housing (in addition to that required by the Inclusionary Housing Ordinance).

In September 2015, the City Council approved the General Plan update, Planning Commission Resolution No. 7114, which requires projects on identified properties (including the project site),

to provide a minimum of 20% of the total housing units on the site as affordable to lower-income households. Therefore, the proposed project is required to provide 20% of the total units as affordable units. The proposed project would exceed with the city's Inclusionary Housing Ordinance requirements of 15% inclusionary housing and the Resolution No. 7114 requirement of 20% affordable housing units by providing 25% affordable housing units (i.e., 82 affordable housing units). Thus, while the project would produce a slightly higher increase in population than what was originally envisioned for the project site, with submittal of the required Site Development Plan and Affordable Housing Agreement to the city for review and approval, and with approval by the city for the requested density increase, the proposed project would conform to planned growth that is anticipated by the General Plan and result in compliance with state and local housing regulations and would be consistent with the population growth projections for the area. As SANDAG does not have local land use or regulatory authority, the project's consistency with the city's municipal code and city's General Plan would be sufficient to determine that the project would not conflict with SANDAG growth projections and the RAQS.

Additionally, the proposed project would comply with CARB regulatory requirements to minimize short-term emissions from on-road and off-road diesel construction equipment (i.e., 13 CCR, Section 2485 – anti-idling regulation; 13 CCR, Section 2025 – Truck and Bus regulation to reduce NO_x, PM₁₀, and PM_{2.5} emissions; and 13 CCR, Section 2449 – In-Use Off-Road Diesel Fueled Fleets regulation to reduce NO_x, PM₁₀, and PM_{2.5} emissions). The proposed project would also comply with SDAPCD regulations for controlling fugitive dust pursuant to SDAPCD Rule 55 Fugitive Dust.

Compliance with these requirements is consistent with and meets the RAQS requirements for control measures intended to reduce emissions from construction equipment and activities. Therefore, the proposed project would not conflict with or obstruct implementation of the RAQS, and impacts would be **less than significant**.

Impact 4.2-2: Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Construction

Construction activities would temporarily generate emissions from equipment exhaust and mobile trips. The amount of emissions generated on a daily basis would vary depending on the intensity and types of construction activities occurring simultaneously. The San Diego Basin is currently classified as a federal non-attainment area for the 2008 8-hour standard for ozone and a state non-attainment area for PM₁₀, PM_{2.5}, and ozone. Maximum daily construction emissions are shown in **Table 4.2-4, *Estimated Regional Construction Emissions (Pounds Per Day)***. Accounting for both individual phases and overlapping phases, the construction emissions from the proposed project would not exceed the SDAPCD significance thresholds for PM₁₀, PM_{2.5}, VOC, or NO_x. Therefore, impacts would be **less than significant** with regard to a cumulatively considerable net increase for a criteria air pollutant in non-attainment during construction.

**TABLE 4.2-4
ESTIMATED REGIONAL CONSTRUCTION EMISSIONS (POUNDS PER DAY) ^a**

Source	VOC	NO _x	CO	SO ₂	PM10 ^b	PM2.5 ^b
West Demolition	3	30	16	<1	2	1
Combined Site Preparation - 2020	3	27	13	<1	14	8
Combined Grading - 2020	4	43	23	<1	15	8
Combined Underground Utilities - 2020	1	17	8	<1	1	1
East Building Construction - 2020	1	6	6	<1	1	<1
East Building Construction - 2021	1	6	5	<1	1	<1
West Building Construction - 2020	1	7	10	<1	2	1
West Building Construction - 2021	1	6	9	<1	2	1
West Building Construction - 2022	1	5	9	<1	1	1
East Paving - 2021	<1	4	5	<1	<1	<1
West - Architectural Coating 2022	83	1	3	<1	<1	<1
West Paving - 2022	1	5	7	<1	<1	<1
East Architectural Coating 2022	32	1	2	<1	<1	<1
Overlapping Phases						
Combined Underground Utilities - 2020 and East Building Construction - 2020	2	23	14	<1	2	1
East Building Construction - 2020 and West Building Construction - 2020	2	13	15	<1	3	1
East Building Construction - 2021 and West Building Construction - 2021	2	12	15	<1	3	1
West Building Construction - 2021 and East Paving - 2021	2	10	14	<1	2	1
West Architectural Coating - 2022 and West Building Construction - 2022	85	7	11	<1	2	1
West Architectural Coating - 2022 and West Paving - 2022	84	11	18	<1	3	1
Maximum Daily Emissions	85	43	23	<1	15	8
SDAPCD Regional Significance Threshold	137	250	550	250	100	55
Exceeds Thresholds?	No	No	No	No	No	No

a Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix B.

b Emissions include fugitive dust control measures consistent with South Coast Air Quality Management District Rule 403.

SOURCE: ESA, 2019.

Operation

Operational emissions were assessed for mobile, area, and stationary sources for the 2035 operational year. The proposed project would comply with the applicable requirements of Title 24 Building Energy Efficiency Standards, including the applicable requirements of the 2019 CALGreen green building standards (Title 24, part 11) in effect at the time of building permit

issuance. As shown in **Table 4.2-5, *Estimated Regional Operational Emissions***, the operational emissions would not exceed the SDAPCD significance thresholds for PM10, PM2.5, VOC, or NO_x. Therefore, impacts would be **less than significant** with regard to a cumulatively considerable net increase for a criteria air pollutant in non-attainment during operation.

**TABLE 4.2-5
 ESTIMATED REGIONAL OPERATIONAL EMISSIONS (POUNDS PER DAY)^a**

Source	VOC	NO _x	CO	SO ₂	PM10	PM2.5
Area (Coating, Consumer Products, Landscaping)	10	<1	27	<1	<1	<1
Energy	<1	1	<1	<1	<1	<1
Mobile	3	10	31	<1	10	3
Total Regional Emissions	13	11	58	<1	10	3
SDAPCD Regional Significance Threshold	75	250	550	250	100	55
Exceeds Thresholds?	No	No	No	No	No	No

a Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix B.
 SOURCE: ESA, 2019.

Health Impacts from Regional Emissions (Friant Ranch Case)

The EPA and CARB have established the NAAQS and CAAQS, respectively, at levels above which concentrations could be harmful to human health and welfare, with an adequate margin of safety. Further, California air districts, like the SDAPCD, have established emission-based thresholds that provide project-level estimates of criteria air pollutant quantities that air basins can accommodate without affecting the attainment dates. Accordingly, elevated levels of criteria air pollutants as a result of a project’s emissions could cause adverse health effects associated with these pollutants. As shown previously in Table 4.2-3, the San Diego Air Basin is designated as non-attainment for O₃ (8-hour) under the NAAQS and non-attainment for O₃ (1-hour and 8-hour), PM10 and PM2.5 under the CAAQS.

In *Sierra Club v. County of Fresno* (S219783) (*Sierra Club*) the California Supreme Court held that CEQA requires environmental impact reports to either (i) make a “reasonable effort” to substantively connect the estimated amount of a given air pollutant a project will produce and the health effects associated with that pollutant, or (ii) explain why such an analysis is infeasible (6 Cal.5th at 1165-66). However, the Court also clarified that CEQA “does not mandate” that EIRs include “an in-depth risk assessment” that provides “a detailed comprehensive analysis ... to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify both the individual and population wide health risks associated with those levels of exposure” (Health and Safety Code, § 44306).

The accumulation and dispersion of air pollutant emissions within an air basin is dependent upon the size and distribution of emission sources in the region and meteorological factors such as wind, sunlight, temperature, humidity, rainfall, atmospheric pressure, and topography. Various air districts in California agree that it is very difficult to quantify health impacts, particularly in the

case of O₃ (SCAQMD 2015). Writing as *amicus curiae* in *Sierra Club*, the San Joaquin Valley Air Pollution Control District (SJVAPCD) explained that “[r]unning the photochemical grid model used for predicting ozone attainment with emissions solely from one project would thus not be likely to yield valid information given the relative scale involved” (SJVAPCD 2015). O₃ is not directly emitted into the air, but is instead formed as ozone precursors undergo complex chemical reactions through sunlight exposure (SJVAPCD 2015).

Given the complex nature of this process, and the fact that O₃ can be transported by wind over long distances, “a specific tonnage amount of NO_x or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area” (SJVAPCD 2015). For this reason, the photochemical analysis for O₃ is done on a regional scale and it is inappropriate to analyze O₃ impacts at a local or project-level basis because a localized analysis would at most be speculative, and at worst be misleading. Speculative analysis is not required by CEQA (CEQA *Guidelines* Section 15145; *Laurel Heights Improvement Association v. Regents of the University of California* 1988).

The SJVAPCD stated that even a project with criteria pollutant emissions above its CEQA thresholds does not necessarily cause localized human health impacts as, even with relatively high levels of emissions, the SJVAPCD cannot determine “whether and to what extent emissions from an individual project directly impact human health in a particular area” (SJVAPCD 2015). The SCAQMD also, as *amicus curiae* in *Sierra Club*, made similar points, reiterating that “an agency should not be required to perform analyses that do not produce reliable or meaningful results” (SCAQMD 2015). SCAQMD agrees that it is very difficult to quantify health impacts with regard to O₃, opining that the only possible means of successfully doing so is for a project so large that emissions would essentially amount to *all* regional increases (SCAQMD 2015). With regard to particulate matter, the SCAQMD noted that while the CARB has created a methodology to predict expected mortality from large amount of PM_{2.5}, the primary author of the methodology has reported that it “may yield unreliable results due to various uncertainties” and CARB staff has been directed by its Governing Board to reassess and improve it, and “also counsels against setting any hard-and-fast rule” about conducting this type of analysis (SCAQMD 2015).

To further illustrate the difficulty in assessing health impact outcomes from a single project’s emissions, for example, SDAPCD emissions modeling used in the 2016 ozone attainment plan indicate a countywide ozone-precursor reduction for VOC and NO_x of approximately 12% (approximately 17.1 tons per day) and 21% (approximately 25.8 tons per day) between 2012 and 2017 within the San Diego Air Basin, which would reduce ozone levels at the monitor with the greatest ozone concentrations by approximately 5% (approximately 4.1 parts per billion) (SCAPCD, 2016). Between 2012 and 2017, the population of San Diego County increased by approximately 147,876 (from 3,161,750 to 3,309,626) according to population estimates from the California Department of Finance (California Department of Finance, 2019). Thus, it is clear that population growth, and associated growth in development, can occur while still achieving emissions reductions. Similarly, SCAQMD emissions modeling shows that reducing the baseline 2008 NO_x and VOC emissions by 432 tons per day and 187 tons per day respectively within the South Coast Air Basin, would only reduce ozone levels at the monitor with the greatest ozone concentrations by 9 parts per billion (ppb) (SCAQMD, 2013). Additionally, SCAQMD modeling

that accounts for increases in emissions due to new or modified sources within the SCAQMD between 2010 and 2030 show an increase of 6,620 pounds per day of NO_x and 89,947 pounds per day of VOC. The results of this analysis show that this level of daily pollutant increase would only increase ozone concentrations in the air basin by 2.6 ppb and less than 1 ppb of NO₂ (SCAQMD, 2011). Thus, due to the complexity of ozone formation in the atmosphere, large changes in ozone precursor emissions often result in small changes in ozone concentrations.

As expressed in the *amicus curiae* brief submitted for the *Sierra Club v. County of Fresno* case, the air districts established and recommend CEQA air quality analysis of criteria air pollutants use significance thresholds that were set at emission levels tied to the region's attainment status, based on emission levels at which stationary pollution sources permitted by the air district must offset their emissions. Such offset levels allow for growth while keeping the cumulative effects of new sources at a level that will not impede attainment of the NAAQS and CAAQS. The health impacts associated with exposure to criteria pollutants are evaluated on a regional level, based on the region's attainment of the NAAQS and CAAQS. The mass emissions significance thresholds used in CEQA air quality analysis are not intended to be indicative of human health impacts that a project may have (South Coast Air Quality Management District, 2012; San Joaquin Valley Air Pollution Control District, 2015). Because of the complexity of ozone formation and design of ozone modeling tools for the regional scale (not individual projects), a general description of adverse health effects from project-level criteria pollutants is all that can be feasibly provided at this time. As shown in Table 4.2-4, *Estimated Regional Construction Emissions (Pounds Per Day)*, and Table 4.2-5, *Estimated Regional Operational Emissions*, above, construction and operation of the proposed project would not exceed the mass regional emissions threshold and would likely not cause or contribute to the exposure of sensitive receptors to ground-level concentrations in excess of health-protective levels. Therefore, the health impacts from regional emissions would be **less than significant**.

Impact 4.2-3: Would the proposed project expose sensitive receptors to substantial pollutant concentrations?

Construction

As described in Impact 4.2-2, the proposed project would not exceed the mass regional emissions threshold during construction and would likely not cause or contribute to the exposure of sensitive receptors to ground-level concentrations in excess of health-protective levels.

Toxic Air Contaminants

Construction activities would emit DPM exhaust emissions from the use of off-road and on-road equipment and stationary sources (such as generators). Emissions modeling conducted for the project using CalEEMod evaluates diesel exhaust emissions as comprising entirely of PM_{2.5} emissions. PM_{2.5} is a subset of PM₁₀; therefore, the PM₁₀ emissions reported in CalEEMod is used as a surrogate for DPM exhaust emissions. If the proposed project would emit carcinogenic materials or TACs that exceed the maximum incremental increase in cancer risk of 10 in one million or a noncancer hazard index of 1.0, impacts to sensitive receptors would be significant. Construction -related cancer risk and chronic noncancer hazard impacts were estimated and compared to this threshold.

Risk was calculated for the off-site residential receptors within 1,000 feet of the project site. AERMOD was used to quantify concentrations at the off-site receptors. Health risk calculations were performed using a spreadsheet tool consistent with OEHHA guidance. The spreadsheet tool incorporates the algorithms, equations, and a variable described above as well as in the OEHHA guidance, and incorporates the results of the AERMOD dispersion model. The proposed project's detailed risk assessment is included as Appendix B.

The maximum unmitigated incremental increase in cancer risk at the maximum impacted sensitive receptor would be up to approximately 20 in one million. The maximum risk would occur at the residential receptors located directly to the south of the eastern edge of the eastern parcel (see **Figure 4.2-2, Maximum Impacted Receptors**) and would exceed the significance threshold of 10 in one million. Thus, the cancer risk for nearby sensitive receptors would be **potentially significant**.

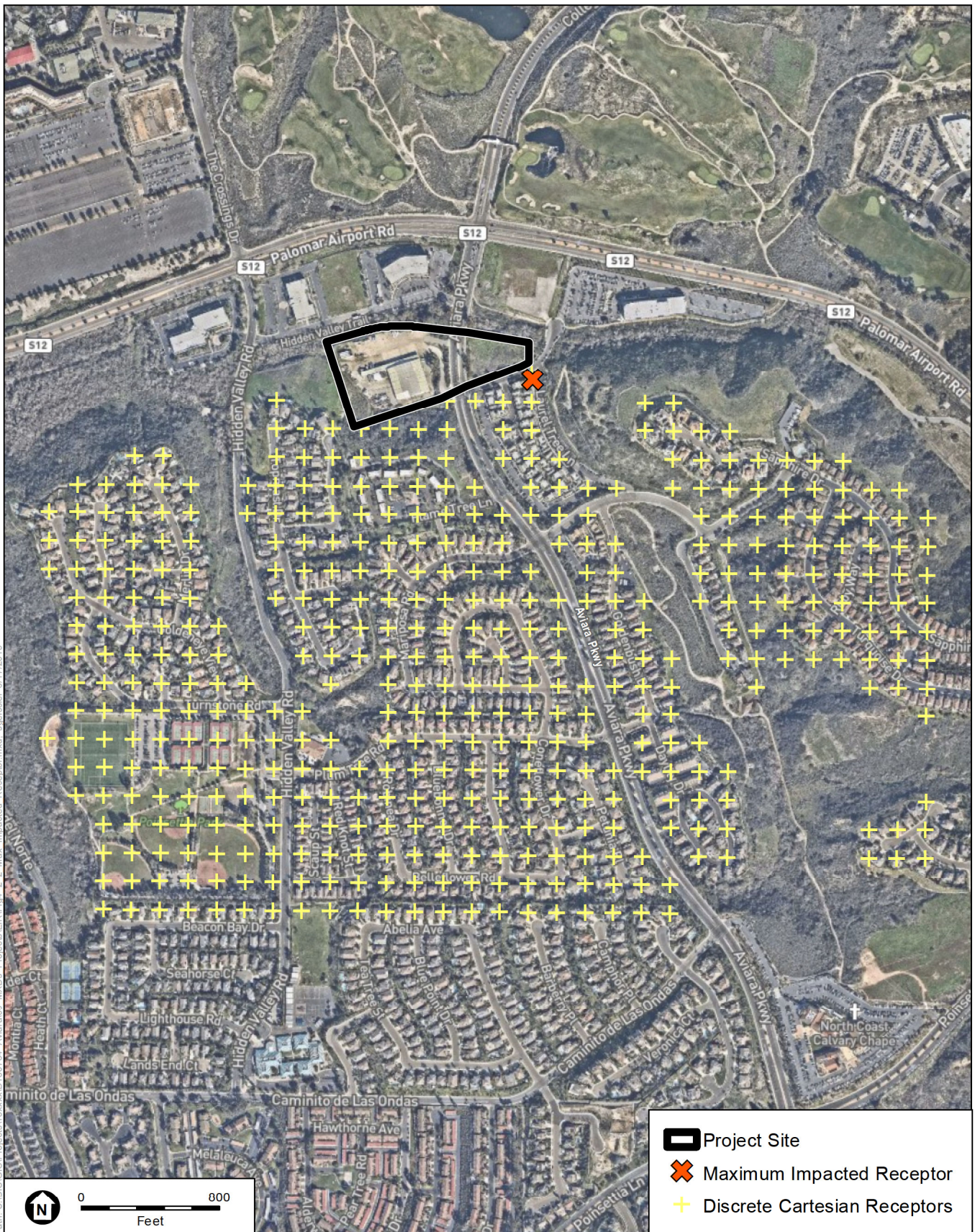
However, the chronic noncancer health impacts from construction of the proposed project would be approximately 0.07 for the maximum impacted sensitive receptor, which would be well below the significance threshold of 1.0. The maximum impacted receptors would be the residential receptors located directly to the south of the eastern edge of the eastern parcel (see **Figure 4.2-2, Maximum Impacted Receptors**). Thus, the chronic noncancer health risk for nearby sensitive receptors would be **less than significant**.

Operation

As described in Impact 4.2-2, the proposed project would not exceed the mass regional emissions threshold during operation and would likely not cause or contribute to the exposure of substantial pollutant contributions to sensitive receptors.

Toxic Air Contaminants

As stated in the County of San Diego *Guidelines for Determining Significance and Report Format and Content Requirements, Air Quality*, typically, land development projects could generate some diesel emissions from small trucks during the operational phase (County of San Diego, 2007). During long-term operations, TACs could be emitted as part of the periodic maintenance operations, cleaning, painting, etc., and periodic visits to the project site from delivery trucks and service vehicles. However, since the project is residential and does not include commercial or industrial uses, the project would not generate or attract substantial numbers of delivery trucks and service vehicles (i.e., more than 100 trucks per day or more than 40 trucks with operating transport refrigeration units per day). Project-related trucks that would visit the site would be required to comply with the applicable provisions of the CARB Truck and Bus regulation (13 CCR, Section 2025) and the CARB anti-idling regulation (13 CCR, Section 2485), which would minimize PM and NO_x emissions from diesel trucks. Therefore, the project operations would not be a substantial source of diesel particulates.



SOURCE: SanGIS 2018; Mapbox, 2019.

Aviara Apartments Project

Figure 4.2-2
Maximum Impacted Receptor

Furthermore, TAC emissions from periodic maintenance operations, cleaning, painting, etc., are expected to be sporadic and intermittent, which is typical of residential uses, and would result in minimal exposure to off-site and on-site sensitive receptors. Architectural coatings are regulated via SDAPCD Rule 67.0.1, which places limits on the VOC (some of which may be TACs) content of various coating categories. The project's land uses would not include installation of paint booths or require extensive use of commercial or household cleaning products. As a result, toxic or carcinogenic air pollutants are not expected to occur in any substantial amounts in conjunction with operation of the proposed land uses within the project site. Based on the uses expected on the project site, potential long-term operational impacts associated with the release of TACs would be minimal, regulated, and controlled, and would not be expected to exceed the SDAPCD health risk significance thresholds. Thus, operation of the Project would not expose sensitive receptors to substantial toxic air contaminant concentrations and operational impacts would be **less than significant**.

With regard to existing sources of TAC emissions impacting the project site, the project would develop residential uses (a sensitive land use) close to a mile (over 4,000 feet) east of the I-5 Freeway, which is beyond the 500 feet distance recommended in the CARB Air Quality and Land Use Handbook. Based on data from the Traffic Impact Analysis for the project, Palomar Airport Road near the intersection of College Road/Aviara Parkway has a daily traffic volume of approximately 33,870 per day under existing conditions and would have a daily traffic volume of approximately 37,930 per day under 2020 cumulative plus project conditions.³ Daily traffic volumes on Aviara Parkway near the intersection of Laurel Tree Lane would be less than approximately 15,000 per day under existing conditions and would have a daily traffic volume of less than approximately 20,000 per day under 2020 cumulative plus project conditions.⁴ Therefore, these roadway segments within approximately 500 feet of the project site would not exceed the high-traffic road volumes of 100,000 vehicles per day for an urban road or even 50,000 vehicles per day for a rural road. The nearest dry cleaner is located over 4,000 feet to the west (Windmill Cleaners, 6020 Paseo Del Norte #6, Carlsbad, California). Furthermore, the CARB Dry Cleaning Air Toxics Control Measure (17 CCR, Section 93109) requires the phase out of the use of perchloroethylene dry cleaning machines and related equipment by January 1, 2023, at which time dry cleaners would not be a source of perchloroethylene TAC emissions. There are no distribution centers within 1,000 feet of the project site. Therefore, the project site would not be located within the recommended distances of substantial sources of TAC emissions and the project would not expose future project residents to substantial sources of TAC emissions. Thus, impacts would be **less than significant**.

³ The daily traffic volumes were estimated based on the peak hour intersection volumes under existing and 2020 cumulative plus project conditions and the general assumption that peak hour trips represent approximately 10 percent of daily trip volumes (the Federal Highway Administration considers 10 percent to be a standard assumption; see http://www.fhwa.dot.gov/planning/tmip/publications/other_reports/tod_modeling_procedures/ch02.cfm).

⁴ Ibid.

CO Hotspots

There is no localized CO hotspot significance threshold methodology for the SDAPCD. For this reason, this CO hotspot analysis relies on the County of San Diego Guidelines for Determining Significance. CO hotspots may potentially occur at signalized intersections that operate at or below Level of Service (LOS) E with peak-hour trips for that intersection exceeding 3,000 trips (County of San Diego, 2007). The Traffic Impact Analysis identified that all roadway segments would operate at the acceptable Level of Service D (LOS D) or better under all study scenarios. Therefore, the proposed project would not contribute considerably to the formation of a CO hotspot. The impact would be **less than significant**.

Impact 4.2-4: Would the proposed project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction

Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents, as well as the combustion of diesel fuel in on- and off-road equipment. SDAPCD Rule 67.0.1 limits the allowable amount of VOCs from architectural coatings and solvents. In addition, the project would comply with the applicable provisions of the CARB Air Toxics Control Measure regarding idling limitations for diesel trucks. Through mandatory compliance with SDAPCD rules, no construction activities or materials are expected to result in other emissions, such as those leading to objectionable odors, affecting a substantial number of people. Since compliance with SDAPCD Rules governing these compounds is mandatory, no construction activities or materials are proposed that would create objectionable odors. Furthermore, with respect to other emissions, criteria air pollutant emissions from those pollutants that are in attainment (CO, NO₂, and SO₂) would be less than significant (Table 4.2-4, *Estimated Regional Construction Emissions*). Therefore, the impact would be **less than significant**.

Operation

The County of San Diego *Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality* identifies potential odor impacts from geothermal power plants, petroleum production and refining, sewers, and sewage treatment plants (County of San Diego, 2007). According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD, 1993). The proposed project does not include any uses identified by the SDAPCD or the neighboring SCAQMD as being typically associated with objectionable or nuisance odors. Long-term operation of the proposed project would not introduce new sources of odors and would not create objectionable odors that could affect nearby sensitive receptors. Waste collection bins would be covered in compliance with CMC 6.08.030 and 6.08.050. Best management and good housekeeping practices in accordance with CMC 6.08.040 and 6.08.045 would be sufficient to prevent nuisance odors. With respect to other emissions, criteria air pollutant emissions from those pollutants that are in attainment (CO, NO₂, and SO₂) would be less than significant (Table

4.2-5, *Estimated Regional Operational Emissions*). Therefore, potential odor impacts would be **less than significant**.

4.2.5 Level of Significance before Mitigation

Implementation of the proposed project would result in a potentially significant impact, as discussed above under Impact 4.2-3.

4.2.6 Environmental Mitigation Measures

The following mitigation measure would reduce the proposed project's potentially significant impact identified under Impact 4.2-3, which would result from the incremental increase in cancer risk at sensitive receptors in excess of the significance threshold of 10 in one million. The following mitigation measure would reduce DPM emissions from on-site construction equipment to a less-than-significant level. Detailed AERMOD dispersion modeling and HRA calculations for the mitigated HRA are included in Appendix B.

Mitigation Measure AQ-1: Reduction of Dust Particulate Matter Emissions During Construction. Off-road diesel equipment greater than 50 horsepower used for the project shall meet EPA Tier 4 final off-road emission standards or equivalent. Such equipment shall be outfitted with Best Available Control Technology for Toxics (T-BACT) devices including a California Air Resources Board certified Level 3 Diesel Particulate Filter or equivalent. This mitigation measure addresses the impact identified under Impact 4.2-3 of the EIR.

4.2.7 Level of Significance after Mitigation

Implementation of Mitigation Measure AQ-1 would require the use of T-BACT and would reduce DPM emissions associated with the construction equipment operated on-site, therefore reducing the potential health risk to off-site sensitive receptors. With implementation of Mitigation Measure AQ-1, the maximum mitigated incremental increase in cancer risk would be reduced to approximately 0.71 in one million which would not exceed the 10 in one million threshold pursuant to SDAPCD Regulation XII. The mitigated chronic health risk from combined construction and operation of the proposed project would be further reduced to 0.003, still significantly below the threshold of 1.0 pursuant to SDAPCD Rule 1210. For these reasons, with incorporation of Mitigation Measure AQ-1, exposure of sensitive receptors to substantial pollutant concentrations during construction would be reduced to **less than significant**.

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4.3 Biological Resources

This section summarizes the biological resources within the project site, describes the regulatory framework for evaluating biological resources, and discusses potential impacts on biological resources resulting from implementation of the proposed project. The following documents were used to identify the impacts that could occur with implementation of the proposed project:

- *Biological Resources Letter Report for the Laurel Tree Aviara Apartments Project*, Helix Environmental Planning, Inc., March 2019 (*Biological Resources Letter Report*) (Appendix C.1 of this EIR).
- *Laurel Tree Aviara Apartments Project Preserve Management Plan*, Helix Environmental Planning, Inc., May 2019 (*Preserve Management Plan*) (Appendix C.2 of this EIR).
- *Laurel Tree Aviara Apartments Project Restoration Plan*, Helix Environmental Planning, Inc., March 2019 (*Restoration Plan*) (Appendix C.3 of this EIR).
- *Habitat Management Plan (HMP)* (City of Carlsbad, 2004).

Additional background information was also gathered from the city's General Plan and city Zoning Ordinances.

4.3.1 Existing Conditions

Vegetation Communities

The Biological Survey Area (BSA), which includes the project site and a 100-foot buffer, supports seven vegetation communities/habitat types, pursuant to the HMP (City of Carlsbad, 2004 and Draft Vegetation Communities of San Diego County (Oberbauer et al. (2008)): (1) southern willow scrub; (2) Diegan coastal sage scrub (including disturbed); (3) southern mixed chaparral; (4) non-native grassland; (5) non-native vegetation/ornamental; (6) disturbed habitat; (7) and developed land. The vegetation communities present within the BSA are summarized in **Table 4.3-1, *Vegetation Communities and Land Cover Types***, and depicted on **Figure 4.3-1, *Vegetation Communities and Sensitive Resources***. A brief discussion of each vegetation community, in terms of typical composition, on-site characteristics, and regional sensitivity/rarity, is provided below.

Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows (*Salix* sp.) in association with mule fat (*Baccharis salicifolia*), and with scattered emergent western sycamores (*Platanus racemosa*). This vegetation community occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest (Holland, 1986).

Southern willow scrub accounts for 0.91 acre within the BSA and 0.24 acre within the project site itself. The habitat is located along the northern boundary of the site at two locations adjacent to Encinas Creek, including a stand in the northwestern corner and a stand in the northeastern

corner. These areas are dominated by mule fat, Gooding’s willow (*Salix gooddingii*) and arroyo willow (*Salix lasiolepis*). Additional species found in this area include southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) and San Diego marsh elder (*Iva hayesiana*).

Southern willow scrub has been reduced through urban expansion and flood control and is considered sensitive under federal and state regulations and policies. The HMP considers southern willow scrub as a special-status vegetation community.

**TABLE 4.3-1
 VEGETATION COMMUNITIES AND LAND COVER TYPES**

Vegetation/Land Cover Type	Biological Survey Area (Acres)	Project Site (Acres)
Riparian		
Southern Willow Scrub	0.91	0.24
Upland		
Diegan Coastal Sage Scrub	1.0	0.4
Southern Mixed Chaparral	0.7	--
Non-Native Grassland	0.3	0.3
Non-Native Vegetation	1.7	1.1
Disturbed Habitat	5.2	4.0
Developed Land	5.1	3.4
TOTAL	14.9	9.44*

* Value reflects rounding in GIS; the total size of the project site is approximately 9.5 acres.
 SOURCE: Helix, 2019 (Appendix C.1 of this EIR)

Diegan Coastal Sage Scrub (including disturbed)

Diegan coastal sage scrub (including disturbed) consists mainly of facultative drought-deciduous, low-growing, soft-woody subshrubs. This type of community is dominated by California sage brush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), white sage (*Salvia apiana*), and black sage (*Salvia mellifera*). Diegan coastal sage scrub is commonly found on steep, xeric slopes containing clay soils and little water from southern California to Baja California along the coast.

Diegan coastal sage scrub accounts for 1.0 acre within the BSA and 0.4 acre within the project site itself. Within the BSA, disturbed and undisturbed habitat occurs at two general locations. Relatively undisturbed coastal sage scrub is found along the northeast edge of the project site within the Encinas Creek corridor. Disturbed coastal sage scrub is found in a small path in the northwestern corner and a larger patch in the southwestern corner that extends north to the developed portion of the site. The Diegan coastal sage scrub within the BSA was composed of a mix of coyote bush (*Baccharis pilularis*), California sage brush, California buckwheat, black sage, and lemonade berry (*Rhus integrifolia*).



SOURCE: Helix, 2019

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Figure 4.3-1
Vegetation Communities and Sensitive Resources

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This type of vegetation community is considered sensitive under state regulations and policies and is given the highest inventory priority in the California Natural Diversity Database. The HMP considers Diegan coastal sage scrub to be a special-status vegetation community.

Southern Mixed Chaparral

Southern mixed chaparral is composed of broad-leaved sclerophyllous shrubs that can reach 6 to 10 feet in height and form dense often nearly impenetrable stands with poorly developed understories. Depending upon relative proximity to the coast, southern mixed chaparral is dominated by chamise (*Adenostoma fasciculatum*), mission manzanita (*Xylococcus bicolor*), coast white lilac (*Ceanothus verrucosus*), Ramona lilac (*Ceanothus tomentosus*), white-stem wild-lilac (*Ceanothus leucodermis*), big-berry manzanita (*Arctostaphylos glauca*), and scrub oak (*Quercus dumosa*). This vegetation community occurs on dry, rocky, often steep north-facing slopes with little soil.

Southern mixed chaparral accounts for approximately 0.7 acre within the BSA, but none occurs within the project site itself. It is found along the southern boundary of the BSA, toward the western edge of the site. The southern mixed chaparral within the BSA was found to be dominated by laurel sumac, lemonade berry, and toyon (*Heteromeles arbutifolia*).

This type of vegetation community is not considered a special-status vegetation community by the HMP, but may provide habitat for raptors and other sensitive species.

Non-Native Grassland

Annual (non-native) grassland is typically characterized by a mixture of annual grasses, such as wild oats (*Avena* spp.) and bromes (*Bromus* spp.), and broad-leaved, herbaceous species, such as black mustard (*Brassica nigra*) and tocalote (*Centaurea melitensis*). Annual species comprise 50% to more than 90% of the vegetative cover, and most annuals are non-native. Non-native grasses typically comprise at least 30% of the vegetative community, although this percentage can vary depending on land use and climatic conditions. Usually, non-native grasses are less than 3 feet in height and form a continuous or open cover. Emergent shrubs and trees may be present, but do not comprise more than 15% of the total cover. Most non-native grasses originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California.

Approximately 0.3 acre of non-native grassland was mapped within three patches in the eastern portion of the BSA on the project site. These areas appear to have at least 30% cover of non-native grasses compared to the other non-native annuals and perennials observed.

This type of vegetation community is not considered a special-status vegetation community by the HMP, but it may provide foraging habitat for raptors, support sensitive plant species, and serve as a habitat linkage.

Non-Native Vegetation

Non-native vegetation is typically dominated by non-native grasses, pampas grass (*Cortaderia jubata*), fountain grass (*Pennisetum setaceum*), bull thistle (*Cirsium vulgare*), Russian thistle

(*Salsola tragus*), ice plant (*Mesembryanthemum* spp.), eucalyptus (*Eucalyptus* sp.), and palm (Arecaceae family). Much of the non-native vegetation is comprised of exotic and escapees from ornamental landscaping.

Non-native vegetation can be found in patches on approximately 1.7 acres of the BSA, with 1.1 acres occurring within the project site itself. Dominant species include hottentot fig (*Carpobrotus edulis*) with lower densities of fennel (*Foeniculum vulgare*), bristly ox-tongue (*Helminthotheca echioides*), and tamarisk (*Tamarix* sp.).

The non-native vegetation community is not considered a special-status vegetation community in the HMP.

Disturbed Habitat

Disturbed habitat or disturbed land includes land cleared of vegetation; land containing a preponderance of non-native plant and disturbance-tolerant species; or land showing signs of past or present usage that removes any capability of providing viable habitat. This classification includes ruderal (weedy) areas dominated by species typical of highly disturbed sites, as well as areas that have been physically disturbed by previous legal human activity and are no longer recognizable as a native or naturalized vegetation association, but continue to retain a soil substrate. Typical vegetation, if present, is composed of non-native plant species such as non-native ornamentals, non-native grasses, and ruderal species that take advantage of disturbance.

Large patches of disturbed habitat accounts for approximately 5.2 acres in the northeastern portion of the BSA and along the western border, with approximately 4.0 acres occurring within the project site itself. Smaller patches of disturbed habitat are found near the northern and southern boundary of the BSA. The primary factor used in mapping this habitat type was evidence of intense land disturbance and the presence of bare ground and non-native ruderal indicator plant species. Non-native forbs that dominate this community within the BSA include black mustard, fox chess (*Bromus madritensis*), and Russian thistle. There is evidence of surface soil disturbance, dumping, trash, debris, and a prevalence of non-native species throughout the areas mapped as disturbed habitat.

The disturbed habitat vegetation community is not considered a special-status vegetation community in the HMP.

Developed Land

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained. Within the BSA, developed land covers approximately 5.1 acres, with 3.4 acres occurring within the project site itself. This land cover type is not considered a special-status vegetation community in the HMP.

Wildlife Species

Seventeen species of wildlife were observed during the wildlife reconnaissance field surveys conducted in 2016, 2017, and 2019. The complete list of wildlife species identified on-site is provided in *Biological Resources Letter Report* (Appendix C.1, Attachment A) of this EIR.

Birds

Fifteen species of birds were observed during the surveys, including bushtit (*Psaltriparus minimus*), black-headed grosbeak (*Pheucticus melanocephalus*), western scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), California towhee (*Melospiza crissalis*), spotted towhee (*Pipilo maculatus*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus psaltria*), common yellowthroat (*Geothlypis trichas*), yellow-breasted chat (*Icteria virens*), Nuttall's woodpecker (*Picoides nuttallii*), Anna's hummingbird (*Calypte anna*), house wren (*Troglodytes aedon*), black phoebe (*Sayornis nigricans*), and Cassin's kingbird (*Tyrannus vociferans*).

Mammals

Two species of mammals were observed during the surveys, including desert cottontail (*Sylvilagus audubonii*) and California ground squirrel (*Otospermophilus beecheyi*).

Reptiles

No species of reptiles were observed during the surveys.

Special-Status Biological Resources

Special-status biological resources are those defined as follows: (1) species that have been given special recognition by federal, state, or local conservation agencies or organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as special-status; (3) habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; and (4) wildlife corridors and habitat linkages. Regulated biological resources may or may not be considered special-status, but are regulated under local, state and/or federal laws.

City of Carlsbad Habitat Management Plan

The city HMP is a comprehensive, citywide conservation program whose purpose is to identify and preserve sensitive biological resources within the city while allowing for additional development consistent with the city's General Plan and Growth Management Plan (GMP). Specific biological objectives of the HMP are to conserve the full range of vegetation types remaining in the city, with a focus on protecting rare and special-status habitats and species. The HMP acts as a Subarea Plan to the overall Multiple Habitat Conservation Program (MHCP) that was approved and finalized by the San Diego Association of Governments' Board of Directors in 2003.

The Carlsbad HMP divides vegetation communities into six Habitat Groups: A through F, which are defined as follows:

- **Group A:** Coastal salt marsh, alkali marsh, freshwater marsh, estuarine, salt pan/mudflats, riparian forest, riparian woodland, riparian scrub, vernal pools, disturbed wetlands, flood channel, freshwater, Engelmann oak woodland, coast live oak woodland.
- **Group B:** Beach, southern coastal bluff scrub, maritime succulent scrub, southern maritime chaparral, native grassland.

- **Group C:** Gnatcatcher-occupied coastal sage scrub.
- **Group D:** Unoccupied coastal sage scrub, coastal sage/chaparral mix, chaparral (excluding southern maritime chaparral).
- **Group E:** Annual (non-native) grassland.
- **Group F:** Disturbed land, eucalyptus, agricultural lands.

The HMP provides an analysis of conservation measures for a list of “covered species” based on existing, proposed, and allowable development impacts and proposed conservation measures. Therefore, the HMP assumes adherence to specific “standards” of resource avoidance and minimization in order to maintain species preservation goals which achieve adequate conservation to obtain species coverage.

The following are common terms used in the HMP and in this EIR section:

- **Core:** A component of the preserve system established under the HMP, consisting of large blocks of conserved habitat capable of sustaining species over time.
- **Corridor:** A defined tract of land, usually linear, through which a species must travel to reach habitat suitable for reproduction and other life-sustaining needs.
- **Covered Species:** A species for which take authorization would be provided because long-term viability was determined to be adequately maintained under a particular preserve design.
- **Existing Hardlines:** Areas which have already been conserved for their wildlife value due to actions occurring in the past. Examples include on-site open space required to be set aside as part of the approval of a development project and areas that have been purchased and set aside as mitigation for project impacts.
- **HMP Cores:** Areas within the Focus Planning Area Map that consist of blocks of habitat that are sufficiently large to reliably support breeding populations of species, or that are large and intact enough to form ecologically functional areas for preserve design.
- **Linkage:** A component of the preserve system established under the HMP, consisting of conserved habitat that provides connectivity between Cores and other natural communities within the region.
- **Narrow Endemic Species:** Native species with restricted geographic distributions, soil affinities, and/or habitats and, for purposes of the HMP, species that have important populations within the HMP area, such that a substantial loss of these populations or their habitat within the HMP area might jeopardize the continued existence or recovery of that species.
- **Proposed Hardline Areas:** Properties whose conservation and development area have been planned as part of the HMP. If development is proposed on these lands in substantial conformance with the HMP, the development would be automatically permitted under the HMP. These areas have been agreed-upon in coordination with the landowners, the city, U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Wildlife (CDFW).
- **Standards Areas:** Lands designated by the HMP that must be designed, permitted and developed in accordance with the Standards stated in Section D of the HMP.

In the context of the adopted HMP, the project site is located within Local Facilities Management Zone (LFMZ) 5, with existing HMP Hardline designations overlaying the Encinas Creek Corridor off-site to the immediate north, and slope areas off-site to the immediate west, as shown in **Figure 4.3-2, Carlsbad HMP Designations**. LFMZ 20 occurs to the immediate south and west of the site, with portions overlapping the southern and western edges of the BSA. The project site is located outside of the HMP Focus Planning Area (i.e., Cores, Linkages, and Special Resource Areas), and is therefore not within a Proposed Hardline or Standards Area. Due to the project site's location outside of a Standards Area, the project would not be subject to the Local Facilities Management Zone Standards contained in the HMP. The site is also located within the coastal zone, as identified in the certified Carlsbad Local Coastal Program (LCP).

Sensitive Natural Communities and Environmentally Sensitive Habitat Areas

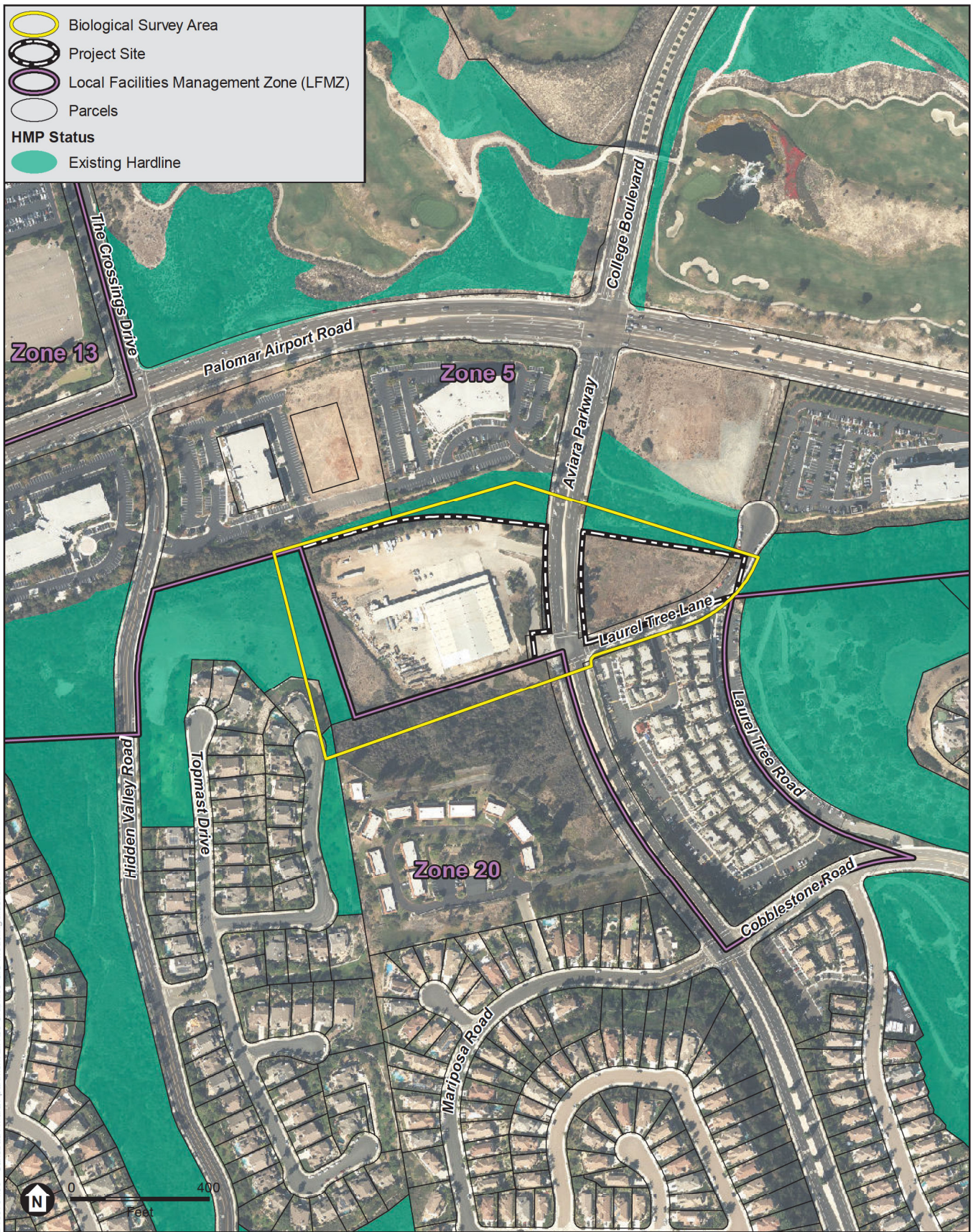
Sensitive natural communities include land that supports unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the CEQA Guidelines. Sensitive natural communities also include Habitat Groups A through E in the Carlsbad HMP.

The site supports three sensitive natural communities: Diegan coastal sage scrub (including disturbed; Habitat Group D), southern mixed chaparral (Habitat Group D), and southern willow scrub (Habitat Group A). Although considered sensitive, the non-native grassland (Habitat Group E) within the site is of relatively poor quality and does not represent a high quality example of the habitat type due to small patch size, isolation from larger stands in the local area, lack of native and sensitive plant species, and generally low potential to serve as an important foraging area for wildlife, such as raptors.

In the context of the city's certified LCP and the California Coastal Act, the Diegan coastal sage scrub, southern mixed chaparral, and southern willow scrub within the BSA do not meet the criteria to be considered an Environmentally Sensitive Habitat Area (ESHA). These natural communities lack the rarity and uniqueness of habitat required to be considered ESHA based on a general absence of sensitive species, lack of species diversity, signs of disturbance, and overall low-to-moderate quality.

Special-Status Plant Species

No sensitive plant species have been reported as occurring directly on the project site and none were observed within the project site itself during the 2016, 2017, and 2019 biological surveys. However, two sensitive plant species were observed in the northeastern portion of the BSA in association with Encinas Creek during the 2016, 2017, and 2019 biological surveys: southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) and San Diego marsh-elder (*Iva hayesiana*) (see Figure 4.3-1, *Vegetation Communities and Sensitive Resources*). Although sensitive, southwestern spiny rush is not federally or state-listed and is only designated as a California Rare Plant Rank (CRPR) List 4 plant. San Diego marsh-elder, although also not federally or state-listed, is designated as a CRPR List 2 plant. The northeastern portion of the BSA where these two species were found in Encinas Creek would not be impacted by development of the site, as they are located outside of the project site within an Existing Hardline Area.



SOURCE: Helix, 2019

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Figure 4.3-2
Carlsbad HMP Designations

Table 4.3-2, *Special-Status Plant Species Potential to Occur*, lists the special-status plant species that were observed within the BSA. No additional special-status plant species have the potential to occur on-site.

**TABLE 4.3-2
SPECIAL-STATUS PLANT SPECIES POTENTIAL TO OCCUR**

Scientific Name	Common Name	Status ¹	Habitat, Ecology, and Life History	Potential to Occur
<i>Iva hayesiana</i>	San Diego marsh-elder	CRPR 2B.2; HMP Lists 2 and 3	Occurs along stream courses. Shrub identifiable all year. Flowering period April – October. Elevation less than 2,953 feet (900 meters).	Present. 14 individuals observed in the BSA outside of the impact area within southern willow scrub habitat and coastal sage scrub habitat.
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	Southwestern spiny rush	CRPR 4.2	Shrub identifiable all year. Occurs in wet alkaline places, coastal marshes, meadows and seeps. Elevations below 3,000 feet (914 meters).	Present. 1 individual observed in the BSA outside of the impact area along water's edge of southern willow scrub habitat.

¹ Status listing is as follows:

F = Federal

S = State of California

E = Endangered

T = Threatened

R = Rare

SSC = State Species of Special Concern

FP = Fully Protected

CRPR = California Rare Plant Rank: 1A – presumed extinct; 1B – rare, threatened, or endangered in California and elsewhere; 2A – presumed extirpated in California but more common elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution.

SOURCE: Helix, 2019 (Appendix C.1 of this EIR)

A list of all known special-status species that occur in the area, as well as other additional species that have some potential to occur on-site due to soil or habitat characteristics, is contained in the Biological Resources Letter Report (Appendix C.1, Attachment B).

Special-Status Wildlife Species

One special-status animal was observed or otherwise detected during the 2017 focused species surveys: yellow-breasted chat. Yellow-breasted chat is a non-listed, California Species of Special Concern that is expected to frequent riparian habitat within Encinas Creek.

Additionally, two other special-status animal species have been reported immediately adjacent to the site: coastal California gnatcatcher (*Poliotila californica californica*) and least Bell's vireo (*Vireo bellii pusillus*), although neither was observed or otherwise detected during the 2017 or 2019 focused surveys and both are presumed to be absent. Coastal California gnatcatcher is a federally threatened bird species that occurs within coastal sage scrub and southern mixed chaparral in the city, such as that which occurs in the eastern, western, and southern borders of the site. Least Bell's vireo is a federally and state-endangered bird species that occurs in riparian habitat in the city, such as that which occurs in Encinas Creek along the northern boundary of the site.

Other less sensitive reptile, bird, and mammal species have a high potential to occur on the project site based on available habitat. These species include orange-throated whiptail, coastal whiptail, coast horned lizard, coast patch-nosed snake, two-striped garter snake, Cooper’s hawk, southern California rufous-crowned sparrow, white-tailed kite, yellow warbler, Dulzura California pocket mouse, northwestern San Diego pocket mouse, western yellow bat, San Diego black-tailed jackrabbit, San Diego desert woodrat, and pocketed free-tailed bat.

Table 4.3-3, *Special-Status Wildlife Species Potential to Occur*, lists the special-status wildlife species that were observed on the project site or have the potential to occur on the project site.

**TABLE 4.3-3
 SPECIAL-STATUS WILDLIFE SPECIES POTENTIAL TO OCCUR**

Scientific Name	Common Name	Status ¹	Habitat, Ecology, and Life History	Potential to Occur
Reptiles				
<i>Aspidoscelis hyperythra</i>	Orange-throated whiptail	WL; HMP Covered	Coastal scrub, chaparral, and valley and foothill hardwood habitats. Prefers washes and sandy areas with patches of brush and rocks. Perennial plants required to support its primary prey termites.	High. Suitable habitat (coastal sage scrub and chaparral) present in portions of the impact area. Not observed during biological surveys.
<i>Aspidoscelis tigris stejnegeri</i>	Coastal whiptail	SSC	Occurs in open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions.	High. Suitable habitat present in portions of the impact area. Not observed during biological surveys.
<i>Phrynosoma blainvillii</i>	Coast horned lizard	SSC	Coastal sage scrub and chaparral in arid and semiarid climate conditions. Favored prey are harvester ants (<i>Pogonomyrmex</i> sp.).	High. Suitable habitat present in portions of the impact area. Not observed during biological surveys.
<i>Salvadora hexalepis virgultea</i>	Coast patch-nosed snake	SSC	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains. Found among preferred habitats of whiptails, its favored prey.	High. Suitable habitat present in portions of the impact area. Not observed during biological surveys.
<i>Thamnophis hammondi</i>	Two-striped garter snake	SSC	Occurs along permanent and intermittent streams bordered by dense riparian vegetation, but occasionally associated with vernal pools or stock ponds.	High. Suitable habitat present in the impact area. Not observed during biological surveys.
Birds				
<i>Accipiter cooperii</i>	Cooper’s hawk	WL; HMP Covered	Tends to inhabit lowland riparian areas and oak woodlands in proximity to suitable foraging areas such as scrublands or fields.	High. May occur in southern willow scrub in northern portion of the site, which would be avoided. The site provides potential foraging habitat. Not observed during biological surveys.
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	WL; HMP Covered	Found in coastal sage scrub and sparse mixed chaparral.	High. Suitable habitat present in portions of the site. Not observed during biological surveys.

Scientific Name	Common Name	Status ¹	Habitat, Ecology, and Life History	Potential to Occur
<i>Elanus leucurus</i>	White-tailed kite	FP	Riparian woodlands and oak or sycamore groves adjacent to grassland.	High. May occur in southern willow scrub in northern portion of the site, which would be avoided. Marginal foraging habitat occurs within the disturbed areas on the project site. Not observed during biological surveys.
<i>Icteria virens</i>	Yellow-breasted chat	SSC; HMP Covered	Prefers mature riparian woodlands.	Present. Observed on-site in 2017, within the Existing Hardline and open space areas that would be avoided by the proposed project.
<i>Polioptila californica</i>	Coastal California gnatcatcher	FT; SSC; HMP-covered	Found in coastal sage scrub, maritime succulent scrub, and coastal sage/chaparral habitats.	Moderate. Suitable habitat present in portions of the impact area. Was not observed on-site during focused surveys in 2017. However, has been reported immediately adjacent to the project site.
<i>Setophaga petechial</i>	Yellow warbler	BCC; SCC	Found along riparian woodlands.	High. May occur in southern willow scrub in northern portion of the site, which would be avoided. Not observed during biological surveys.
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE; SE; HMP-covered	Found along riparian woodlands.	Moderate. Suitable habitat present in portions of the impact area. Was not observed on-site during focused surveys in 2017 or updated surveys in 2019. However, has been reported immediately adjacent to the project site.
Mammals				
<i>Chaetodipus californicus femoralis</i>	Dulzura California pocket mouse	SSC	Variety of habitats including coastal scrub, chaparral, and grasslands in San Diego County. Associated with grass-chaparral edges.	High. Marginally suitable habitat present in portions of the impact area. Not observed during biological surveys.
<i>Chaetodipus fallax</i>	Northwestern San Diego pocket mouse	SSC	Prefers open, sandy land with weeds, which occurs on-site but in very small patches.	High. Suitable habitat present in the impact area. Not observed during biological surveys.
<i>Lasiurus xanthinus</i>	Western yellow bat	SSC	Found in wooded areas and desert scrub, particularly in palm trees. Rare visitor to San Diego County (Bats of San Diego County 2012).	High. Suitable habitat occurs in the northern portion of the project site, which would be avoided. Not observed during biological surveys.
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	SSC	Found primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.	High. Suitable habitat present within the impact area. Not observed during biological surveys.
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	SSC	Open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.	High. Suitable habitat present within the impact area. No sign was observed.

Scientific Name	Common Name	Status ¹	Habitat, Ecology, and Life History	Potential to Occur
<i>Nyctinomops femorasaccus</i>	Pocketed free-tailed bat	SSC	Semi-arid desert lands. Day-roots in caves, crevices in cliffs, and under the roof tiles of buildings. Uses a variety of arid habitats in southern California: pine-juniper woodlands, desert scrub, palm oases, desert wash, desert riparian, etc. Prefers rocky areas with high cliffs.	High. Marginally suitable habitat (i.e., structures) are present within the impact area. Not observed during biological surveys.

¹ Status listing is as follows:

F = Federal

S = State of California

E = Endangered

T = Threatened

R = Rare

BCC = U.S. Fish & Wildlife Service Birds of Conservation Concern

SSC = State Species of Special Concern

FP = Fully Protected

WL = California Department of Fish & Wildlife Watch List

Source: Helix, 2019 (Appendix C.1 of this EIR)

A list of all known special-status species that occur in the area as well as other additional species that have some potential to occur on-site due to soil or habitat characteristics is contained in the Biological Resources Letter Report (Appendix C.1 of this EIR, Attachment B).

Jurisdictional Waters and Wetlands

Jurisdictional waters and wetlands include waters of the U.S. regulated by the U.S. Army Corps of Engineers (USACE) pursuant to Clean Water Act (CWA) Section 404; waters of the State regulated by the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA and the State Porter-Cologne Water Quality Control Act; streambed and riparian habitat regulated by the CDFW pursuant to Sections 1600 et seq. of the California Fish and Game Code; and/or coastal stream, wetland, and riparian habitat afforded protection under the Carlsbad LCP.

The potential boundaries of jurisdictional waters and wetlands were delineated during the June 24, 2016 survey. Southern willow scrub is a riparian habitat type that is typically associated with drainage features and often supports wetland conditions within the understory. The southern willow scrub within the BSA is associated with a lower reach of Encinas Creek and qualifies as a potential jurisdictional resource. All aspects of the project's potential development have been sited a minimum of 50 feet from the outermost extent of the resource, which is primarily represented by the riparian canopy (as shown on **Figure 4.3-3** in Section 4.3.4 below).

Wildlife Corridors

Wildlife corridors link areas of suitable habitat that are otherwise separated by areas of non-suitable habitat such as rugged terrain, changes in vegetation, or human disturbance. Wildlife corridors are essential to the regional ecology of a species because they provide avenues of genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities. Fragmentation of open space areas by urbanization creates “islands” of

wildlife habitat that are more or less isolated from each other. Corridors mitigate the effects of fragmentation by (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fire or disease) could lead to local extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and shelter. Wildlife corridors are typically relatively small, linear habitats that connect two or more habitat patches that would otherwise be fragmented or isolated from one another.

Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement. Larger, landscape-level corridors (often referred to as “habitat or landscape linkages”) can provide both transitory and resident habitat for a variety of species. Although it is commonly used as a synonym for wildlife corridor, a habitat linkage refers to a more substantial, or wider, land connection between two habitat areas. Habitat linkages allow for the periodic exchange of animals between habitat areas, which is essential to maintain adequate gene pools. This linkage is most notable among populations of medium-sized and larger animals.

The project site encompasses developed and undeveloped land within the Carlsbad HMP, outside of HMP Core, Linkages, and Specific Resource Areas (SRAs). Open space portions of the BSA, which are identified as Existing Hardline in the HMP, generally following the Encinas Creek riparian corridor. This corridor has been identified by the city as Minor Linkage M6a (City of Carlsbad et al., 2015). This reach of Encinas Creek, which is disturbed and adjacent to several developments, facilitates wildlife movement in local and regional areas that would otherwise be limited due to existing impediments and relatively disturbed riparian habitat. Nevertheless, small- and medium-sized mammals and birds could use the riparian corridor for dispersal and foraging to and from breeding sites. Sensitive birds, such as least Bell’s vireo, have a potential to occur in this reach of Encinas Creek, although the best quality habitat occurs further downstream from the project site within the Encinas Creek Preserve (North County Habitat Bank).

4.3.2 Regulatory Setting

Federal

The following federal regulations provide an overall context for the consideration of site-specific issues at the project site.

Federal Endangered Species Act

The federal Endangered Species Act (ESA) provides protection for endangered and threatened species and requires conservation of designated species’ critical habitats. An “endangered” species is a species in danger of extinction throughout all or a significant portion of its range. A “threatened” species is one that is likely to become “endangered” in the foreseeable future without further protection.

Administered by the USFWS, the federal ESA provides the legal framework for the listing and protection of species that are identified as being endangered or threatened with extinction.

Actions that jeopardize such species and their habitats are considered a “take” under the federal ESA. Section 10(a) of the federal ESA regulates actions that could harm or harass endangered or threatened species. The term “incidental” applies if the taking of the listed species is secondary to, and not the purpose of, an otherwise lawful activity. A conservation plan demonstrating how the take would be minimized and what steps would be taken to ensure the listed species’ survival must be submitted for the issuance of Section 10(a) permits. The city’s HMP has been formally approved and provides take authorization for covered species under Section 10(a).

Migratory Bird Treaty Act (16 USC Section 703-712)

The Migratory Bird Treaty Act (MBTA) provides special protection for migratory families of birds (i.e., those avian species that winter south of the U.S., but breed within the U.S.) by regulating hunting or trade. Most nesting birds are covered by the MBTA. The MBTA prohibits anyone to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 Code of Federal Regulations (CFR) Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Part 21). “Take” is defined in the CFR as “pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.” Such activity is potentially punishable by fines and/or imprisonment.

Clean Water Act (33 USC Section 1251-1376)

The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters. Section 401 of the CWA requires that an applicant for a federal license or permit that allows activities resulting in a discharge to jurisdictional waters (including wetland/riparian areas) of the U.S. must obtain a state water quality certification that the discharge complies with other provisions of the CWA. The RWQCBs administer the certification program in California.

Section 402 is regulated by the U.S. Environmental Protection Agency (EPA) and establishes a permitting system for the discharge of any pollutant (except dredge or fill material) into waters of the U.S. It establishes a framework for regulating municipal and industrial storm water discharges under the National Pollutant Discharge Elimination System (NPDES) program. The RWQCBs also administer the NPDES permits for construction activities and operations.

Section 404 establishes a permit program administered by the USACE regulating the discharge of dredge or fill material into waters of the U.S., including wetlands, and jurisdictional non-wetland waters. The USACE has permit authority derived from Section 404 of the CWA (33 CFR Parts 320-330). The permit review process includes an assessment of potential adverse impacts to wetlands and streambed habitats and a determination of any required mitigation measures. As a condition of the 404 permitting process, a 401 Water Quality Certification or waiver is required from the RWQCB.

Coastal Zone Management Act of 1972

The Coastal Zone Management Act (CZMA) creates a broad program for the management of coastal lands based on land development control. It was enacted to encourage the participation and cooperation of state, local, regional, and federal agencies and governments having programs

affecting the coastal zone. The CZMA allows state involvement through the development of Coastal Zone Management Plans (CZMP) for comprehensive management at the state level. The CZMPs define permissible land and water use within the state coastal zone. This coastal zone extends 3 miles seaward and inland as far as necessary to protect the coast. The California Coastal Act (CCA) is California's coastal zone management program under the CZMA. This program is discussed below.

State

The following state regulations provide an overall context for the consideration of site-specific issues at the project site.

California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the federal ESA and is administered by the CDFW. Lead agencies are required to consult with CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any state-listed endangered, threatened, or candidate plant and animal species. The take of a state-endangered species is approved in a manner similar to that of the federal ESA, with a take permit being granted through Section 2081 of the CESA. In addition to listed species, the CDFW also maintains a list of "Species of Special Concern," including species whose breeding populations in California may face local extirpation. The city's HMP has been formally approved and provides take authorization for covered species under Section 2081 of the CESA.

California Fish and Game Code, State 1600 et seq.

The California Fish and Game Code State 1600 requires any person, state, or local government agency or public utility proposing a project that may impact a river, stream, or lake to notify the CDFW. In addition, to protect state-listed species under CESA, the CDFW also has surface water jurisdiction to protect wildlife values and native plant resources associated with waters of the state. CDFW requires a Section 1602 Streambed Alteration Agreement for work that may impact waters of the state. Required conditions within a Streambed Alteration Agreement are intended to address potentially significant adverse impacts within CDFW jurisdictional limits.

California Coastal Act of 1972

The CCA provides for the protection of environmentally sensitive habitat identified by the CDFW from adjacent developments in the coastal zone. The CCA identifies environmentally sensitive habitat areas as any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. Compliance with the CCA is ensured for specific development projects in the coastal zone through issuance of a Coastal Development Permit (CDP). In most incorporated areas within the coastal zone, compliance with the CCA is regulated by local government through the implementation of a certified LCP, as is the case in the city of Carlsbad.

Local

The section below provides a summary of the city's ordinances, regulations, and policies that are related to the provision of biological resources and are applicable to the proposed project. Where provisions are required by code or ordinance (e.g., the CMC) it is presumed that the proposed project would adhere to the requirements. Where policies or guidelines are provided (i.e., they are not specific regulatory requirements) consistency of the project with the policies identified is described in the impact analysis that follows (Section 4.3.4, *Project Impact Analysis*).

Multiple Habitat Conservation Program

The MHCP is a comprehensive, multiple jurisdictional planning program designed to create, manage, and monitor an ecosystem preserve in northwestern San Diego County. It is one of several large, multiple jurisdictional habitat planning efforts in San Diego County, each of which constitutes a "subregional" plan under the State of California's Natural Community Conservation Planning (NCCP) Act of 1991. The MHCP preserve system is intended to protect viable populations of native plant and animal species and their habitats in perpetuity, while accommodating continued economic development and quality of life for residents of North County.

The MHCP subregion encompasses the seven incorporated cities of northwestern San Diego County (Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista). These jurisdictions implement their portion of the MHCP through citywide "subarea" plans, which describe the specific policies each city has instituted in the MHCP.

As the Carlsbad HMP acts as a Subarea Plan to the overall MHCP, analysis of consistency with the HMP serves as a consistency analysis of the project with the MHCP. The HMP is described further in the following section, including the standards that apply to the proposed project. Consistency of the proposed project with the Carlsbad HMP is addressed in Section 4.3.4, *Project Impact Analysis*, specifically under the analysis for Impact 4.3-6.

City of Carlsbad Habitat Management Plan

The proposed project would be subject to regulation under the Carlsbad HMP. The HMP is a comprehensive, citywide conservation program whose purpose is to identify and preserve sensitive biological resources within the city while allowing for additional development consistent with the city's General Plan and GMP. The project site is located within the LFMP Zone 5 of the city's HMP.

Per HMP requirements, the following HMP conservation standards apply to the project site because of its location in the coastal zone. The consistency of the proposed project with these standards is addressed in Section 4.3.4, *Project Impact Analysis*, specifically under the analysis for Impact 4.3-6.

7-1 Environmentally Sensitive Habitat Areas (ESHA).

Pursuant to Section 30240 of the California Coastal Act, environmentally sensitive habitat areas, as defined in Section 30107.5 of the Coastal Act, shall be protected against any

significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

7.2 Coastal Sage Scrub.

Properties containing Coastal Sage Scrub located in the Coastal Zone shall conserve a minimum of 67 percent of the Coastal Sage Scrub and 75 percent of the gnatcatchers on site. Conservation of gnatcatchers shall be determined in consultation with the wildlife agencies.

7-3 Oak Woodland.

An oak woodland is a closed to relatively open stand of trees within which a dominant tree species is a species of oak. In coastal southern California, that species is generally Coast Live Oak (*Quercus agrifolia*), which is commonly found on slopes and riparian situations. Shrubs vary from occasional to common, and the herb layer is often continuous and dominated by a variety of annual grasses.

7-4 Streams.

A stream is a topographical feature with a clear bed and bank that periodically conveys water.

7-5 Ephemeral Drainages and Ephemeral Streams.

Ephemeral drainages and ephemeral streams are topographic features that convey water, but only during and shortly after rainfall events in a typical year.

7-6 Wetlands.

Wetlands in the Coastal Zone shall be delineated following the definitions and boundary descriptions in Section 13577 of the California Code of Regulations. Pursuant to California Public Resources Code (PRC) Section 30233, no impacts to wetlands shall be allowed in the Coastal Zone except as provided in that Section.¹ Types of activities that may be allowed to impact wetlands are listed; the proposed project does not fall into any of these allowable use categories.

7-7 Wetland Mitigation Requirements.

If impacts to a wetland are allowed consistent with Policy 7-6 above, mitigation shall be provided at a ratio of 3:1 for riparian impacts and 4:1 for saltwater or freshwater wetland or marsh impacts.

7-8 No Net Loss of Habitat.

There shall be no net loss of Coastal Sage Scrub, Maritime Succulent Scrub, Southern Maritime Chaparral, Southern Mixed Chaparral, Native Grassland, and Oak Woodland within the Coastal Zone of Carlsbad. Mitigation for impacts to any of these habitat types,

¹ PRC Section 30233 allows for impacts to wetlands “where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects.”

when permitted, shall include a creation component that achieves the no net loss standard. Substantial restoration of highly degraded areas (where effective functions of the habitat type have been lost) may be substituted for creation subject to the consultation and occurrence of the USFWS and the CDFW (wildlife agencies). The Coastal Commission shall be notified and provided an opportunity to comment upon proposed substitutions of substantial restoration for the required creation component.

7-9 Upland Habitat Mitigation Requirements.

Where impacts to the habitats stated in 7-1 are allowed, mitigation shall be provided as follows:

- a. The no net loss standard shall be satisfied as stated in 7-8. Typically, this will consist of creation of the habitat type being impacted (or substantial restoration where allowed) at a ratio of at least 1:1 as provided in the HMP.
- b. On site preservation is not eligible for mitigation credit in the coastal zone. On site or off site open space preserve areas may be utilized to satisfy required mitigation for habitat impacts associated with development if the preserve areas are disturbed and suitable for restoration or enhancement, or they are devoid of habitat value and therefore suitable for the 1:1 mitigation component requiring creation or substantial restoration of new habitat. Substantial restoration is restoration that has the effect of qualitatively changing habitat type and may meet the creation requirement if it restores habitat type that was historically present, but has suffered habitat conversion or such extreme degradation that most of the present dominant species are not part of the original vegetation. Substantial restoration contrasts with enhancement activities, which include weeding, or planting within vegetation that retains its historical character, and restoration of disturbed areas to increase the value of existing habitat which may meet other mitigation requirements pursuant to the HMP.
- c. Impacts to Coastal Sage Scrub shall be mitigated at an overall ratio of 2:1, with the creation component satisfying half of the total obligation. The remainder of the mitigation obligation shall be satisfied pursuant to the provisions of the HMP.
- d. Impacts to Southern Maritime Chaparral or Maritime Succulent Scrub shall be mitigated at an overall ratio of 3:1, with the creation component satisfying one-third of the total obligation. The remainder of the mitigation obligation shall be satisfied pursuant to the provisions of the HMP. Impacts to Southern Mixed Chaparral, Native Grassland, and Oak Woodland shall be mitigated respectively at ratios of 1:1, 3:1, and 3:1, with the creation component satisfying the obligation or one-third of the total obligation. The remainder of the mitigation obligation shall be satisfied pursuant to the provisions of the HMP. Mitigation for impacts within the coastal zone should be provided within the coastal zone if possible, particularly the 1:1 creation component, in order to have no net loss of habitat within the coastal zone. Mitigation measures on land outside the Coastal Zone may be acceptable if such mitigation would clearly result in higher levels of habitat protection and value and/or would provide significantly greater mitigation ratios, and the mitigation area is part of the HMP. Land area inside and outside the coastal zone which serves as mitigation for habitat impacts in the coastal zone shall be permanently retired from development potential and secured as part of the HMP preserve management plan as a condition of development approval.
- e. Habitat mitigation requirements other than the creation or substantial restoration component may be partially or wholly fulfilled by acquisition of existing like habitat

and/or retirement of development credits on existing like habitat with permanent preservation as part of the HMP preserve management plan.

- f. All mitigation areas, on site and off site, shall be secured with a conservation easement in favor of the wildlife agencies. In addition, a preserve management plan shall be prepared for the mitigation areas, to the satisfaction of the City, the wildlife agencies, and the Coastal Commission. Phase 1 of the preserve management plan shall be incorporated into the implementation Program of the LCP through an LCP amendment within one year of Commission certification of the HMP as part of the certified LCP. Phase 2 of the preserve management plan shall be incorporated into the Implementation Program in the same manner within three years of Commission certification of the HMP as part of the certified LCP. The preserve management plan shall ensure adequate funding to protect the preserve as open space and to maintain the biological values of the mitigation areas in perpetuity. Management provisions and funding for mitigation required to address habitat impacts shall be in place prior to the impacts for which the mitigation is required. At a minimum, monitoring reports shall be required as a condition of development approval after the first and third year of habitat mitigation efforts.
- g. If any conflict should arise between the provisions of the HMP and the policies or the LCP, the LCP shall take precedence.

7-10 Highly Constrained Properties.

There are properties in the Coastal Zone that are entirely or almost entirely constrained by environmentally sensitive habitat area (ESHA). In these cases, one of the following additional standards shall apply:

- a. If more than 80 percent of the property by area is covered with ESHA at least 75 percent of the property shall be conserved, OR
- b. If the City, with the concurrences of the wildlife agencies and the Coastal Commission through an LCP amendment, approves a Hardline preserve boundary for any of these properties as part of the HMP, then the amount of on-site preservation as identified in the Hardline boundary shall apply.

7-11 Buffers and Fuel Modification Zones.

Buffers shall be provided between all preserved habitat areas and development. Minimum buffer widths shall be provided as follows:

- a. 100 feet for wetlands
- b. 50 feet for riparian areas
- c. 20 feet for all other native habitats (coastal sage scrub, southern maritime chaparral, maritime succulent scrub, southern mixed chaparral, native grassland, oak woodland).
- d. Buffer widths shall be measured from the edge of preserved habitat nearest the development to the closest point of development. For wetlands and riparian areas possessing an unvegetated bank or steep slope (greater than 25 percent), the buffer shall be measured from the top of the bank or steep slope rather than the edge of habitat, unless there is at least 50 feet between the riparian or wetland area and the toe of the slope. If the toe of the slope is less than 50 feet from the wetland or riparian

area, the buffer shall be measured from the top of the slope. Any proposed reductions in buffer widths for a specific site shall require sufficient information to determine that a buffer of lesser width will protect the identified resources. Such information shall include, but is not limited to, the size and type of the development and/or proposed mitigation (such as planting of vegetation or the construction of fencing) that will also achieve the purposes of the buffer. The CDFW, the USFWS, and the Coastal Commission staff shall be consulted in such buffer determinations.

No development, grading, or alteration, including clearing of vegetation, shall occur in the buffer area, except for:

- a. Fuel Modification Zone 3 to a maximum of 20 ft. for upland and non-riparian habitat. No fuel modification shall take place within 50 ft. of riparian areas, wetlands, or oak woodland.
- b. Recreation trails and public pathways within the first 15 feet of the buffer closest to the development, provided that construction of the trail or pathway and its proposed use is consistent with the preservation goals for the adjacent habitat, and that appropriate measures are taken for physical separation from sensitive areas. Buffer areas that do not contain native habitat shall be landscaped using native plants. Signage and physical barriers such as walls or fences shall be required to minimize edge effects of development.

7-12 Grading and Landscaping Requirements.

In addition to the requirements of the model grading ordinance in the Carlsbad Master Drainage Plan, permitted new development shall also comply with the following requirements:

- a. Grading activity shall be prohibited during the rainy season: from October 1st to April 1st of each year.
- b. All graded areas shall be landscaped prior to October 1st of each year with either temporary or permanent landscaping materials, to reduce erosion potential. Such landscaping shall be maintained and replanted if not well-established by December 1st following the initial planting.
- c. The October 1st grading season deadline may be extended with the approval of the City Engineer subject to implementation by October 1st of special erosion control measures designed to prohibit discharge of sediments off site during and after the grading operation. Extensions beyond November 15th may be allowed in areas of very low risk of impact to sensitive coastal resources and may be approved either as part of the original coastal development permit or as an amendment to an existing coastal development permit.
- d. If any of the responsible resource agencies prohibit grading operations during the summer grading period in order to protect endangered or rare species or sensitive environmental resources, then grading activities may be allowed during the winter by a coastal development permit or permit amendment, provided that appropriate best management practices are incorporated to limit potential adverse impacts from winter grading activities.

Habitat Management Plan In-Lieu Mitigation Fee

The HMP established an in-lieu mitigation fee that is assessed on development projects based on the following criteria:

1. The fee will be required in addition to any mitigation required of a project by the HMP or CEQA.
2. The fee will be calculated on a per acre basis according to the mitigation ratios contained in Table 11 of the HMP (see **Table 4.3-4, Mitigation Ratios for Impacts to HMP Habitats**) for habitat impacted and not conserved on site. Only Habitat Groups D, E, and F as shown in Table 11 of the HMP shall be eligible to pay the fee for impacted habitat. Groups A, B, and C shall be subject to off-site mitigation for impacted habitats according to the ratios contained in Table 11 of the HMP.
3. Habitat Group F on Table 11 of the HMP (disturbed lands, agriculture lands, and eucalyptus). Although it will be necessary to conduct the fee study required by AB 1600, based on staff's initial analysis, staff anticipates the fee for impacting disturbed habitat/agriculture land should be set to no more than \$500 per acre.²
4. The fee will not be assessed against any parcel that has been graded pursuant to a valid grading permit within the past five years.
5. The fee will not be required where at least 67 percent of the habitat on a property or project is being conserved.
6. The fee will be calculated and collected at issuance of grading permit.

**TABLE 4.3-4
MITIGATION RATIOS FOR IMPACTS TO HMP HABITATS**

Habitat Group and Type	Mitigation Ratio/Requirement by Type of Impacted Habitat
A. Coastal salt marsh, alkali marsh, freshwater marsh, estuarine, salt pan/mudflats, riparian forest, riparian woodland, riparian scrub, vernal pools, disturbed wetlands, flood channel, fresh water Engelmann oak woodland, coast live oak woodland ¹	Not net loss goal (mitigation ratio varies by type of replacement habitat)
B. Beach, southern coastal bluff scrub, maritime succulent scrub, southern maritime chaparral, native grass	3:1 ²
C. Gnatcatcher – Occupied coastal sage scrub	2:1 ³
D. Unoccupied coastal sage scrub, coastal sage/chaparral mix, chaparral (excluding southern maritime chaparral)	1:1 ⁴
E. Annual (non-native) grassland	0.5:1 ⁴
F. Disturbed lands, eucalyptus, agricultural lands	Mitigation Fee ⁴

NOTES:

- ¹ Group A habitats are associated with wetlands. Impacts to these habitat types are subject to review under Section 404 of the CWA or Section 1600 of the California Fish and Game Code.
- ² It is assumed that all habitat types in Group B will be included in the proposed preserve system. Small, isolated patches of low quality southern maritime chaparral may be located outside a preserve system area and maximum avoidance and on-site conservation is preferred.
- ³ Maximum avoidance and on-site conservation of Group C habitat is encouraged.
- ⁴ Off-site mitigation for habitat in this group that is not conserved or mitigated on-site, shall pay a per acre in lieu mitigation fee in an amount to be determined by the City Council.

SOURCE: City of Carlsbad, 2004.

² The impact fee has increased since adoption of the HMP in 2008, and is now \$3,437 per acre for Type F habitats based on the City of Carlsbad Fiscal Year 2019-20 Development Impact Fees.

City of Carlsbad General Plan, Open Space, Conservation and Recreation Element

The General Plan contains goals and policies that address biological resources in the city. Applicable goals and policies from the Open Space, Conservation, and Recreation Element are listed below. Analysis of the project's consistency with these goals and policies is presented in **Table 4.3-6, *Project Consistency with the Open Space, Conservation, and Recreation Element of the General Plan***, which is provided within Section 4.3.4, Project Impact Analysis (specifically within the impact analysis for Impact 4.3-5). Also, **Table 4.10-2, General Plan Consistency Determination Summary** (provided in Section 4.10.4, *Project Impact Analysis of the Land Use and Planning* section), provides a duplication of this information for ease of reference.

Goals

Open Space Framework

- 4-G.1 Develop a balanced and integrated open space system reflecting a variety of considerations – resource conservation, production of resources, recreation, and aesthetics and community identity – and ensuring synergies between various open space components and compatibility with land use planning.

Biological Resources and Open Space for Conservation

- 4.G-3 Protect environmentally sensitive lands, wildlife habitats, and rare, threatened or endangered plant and animal communities.

Policies

Habitat and Open Space Conservation

- 4-P.9 Maintain and implement the city's Habitat Management Plan (HMP), including the requirement that all development projects comply with the HMP and related documents. Require assessments of biological resources prior to approval of any development on sites with sensitive habitat, as depicted in Figure 4-3.
- 4-P.15 Maintain functional wildlife corridors and habitat linkage in order to contribute to regional biodiversity and the viability of rare, unique or sensitive biological resources throughout the city.
- 4.P-18 Require that, at the time of any discretionary approval, any land identified as open space for its habitat or scenic value shall have an appropriate easement and/or land use and zoning designation placed on it for resource protection.

City of Carlsbad Local Coastal Program

The city's LCP, includes the city's land use plans, policies, and standards and an implementing ordinance (the Zoning Ordinance) for the city's coastal zone. The LCP includes six planning areas or segments that cover approximately one-third of the city. The project site is located within the Mello II Segment of the LCP (City of Carlsbad, 2017) and is subject to the land use policies for that segment, including policies related to ESHA (Policies 3-1.2 through 3.1-9), which correspond with the HMP conservation standards described above (Measures 7-1 through 7-12).

4.3.3 Thresholds and Methodology

Thresholds

A significant impact would occur to biological resources if the proposed project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- 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.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

For the purpose of analyzing impacts under the city's HMP, a significant biological resources impact has been assessed if implementation of the proposed project would result in:

- Inconsistency with the adopted Carlsbad HMP.
- Impacts to Habitat Groups A–F.
- Any impacts to federally or state-listed species, including impacts to occupied habitats.
- Loss of a “significant population” of a sensitive species; where the loss would substantially reduce the likelihood of the survival and recovery or restrict the range of the species.

Impacts to non-sensitive habitats are generally not considered significant. If, however, the densities of sensitive species within the habitat were sufficiently high or the habitat functioned as an important wildlife movement corridor, habitat linkage, or crucial foraging habitat, impacts could be considered significant.

Methodology

Impacts related to biological resources were evaluated by identifying existing and potential biological resources within the BSA (project site and surrounding 100-foot buffer) through general biological surveys and focused surveys for rare plants, coastal California gnatcatcher, and least Bell's vireo, as well as review of sensitive species and habitat databases including the Carlsbad HMP, the USFWS species records, CDFW California Natural Diversity Database, California Native Plant Society's Electronic Inventory, and USFWS National Wetland Inventory. Potential direct and indirect (in both the short and long term) impacts to vegetation communities, special-status plant and animal species, jurisdictional waters, wildlife corridors/habitat linkages, and regional resource planning documents were evaluated according to the criteria below.

Direct Impacts were quantified by overlaying the proposed impact limits on the biological resources map of the site. For purposes of this EIR, all biological resources within the future development area were considered a 100 percent permanent loss. This area encompasses the entire limits of grading for the project site. No off-site improvements are included as part of the proposed project.

Indirect Impacts result primarily from adverse “edge effects,” and may be short-term in nature, related to construction, or long-term in nature, associated with development in proximity to biological resources within natural open space. For the proposed project, it is assumed that the potential indirect impacts resulting from construction activities include dust, noise, and general human presence that may temporarily disrupt species and habitat vitality and construction-related soil erosion and runoff. With respect to these latter factors, however, all project-related grading would be subject to the typical restrictions (e.g., best management practices (BMPs)) and requirements that address erosion and runoff, including the federal CWA, NPDES, and preparation of a Stormwater Pollution Prevention Plan. Long-term indirect impacts may include invasion of exotic species, lighting, noise, trash, and increased human presence.

4.3.4 Project Impact Analysis

Impact 4.3-1: Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Special-Status Plants

Due to the absence of special-status plant species during 2017 and 2019 surveys within the potential impact areas of the project, no direct impacts on special-status plant species are expected as a result of the proposed project. Two special-status plant species, southwestern spiny rush and San Diego marsh-elder, were confirmed off-site within the BSA in the Encinas Creek open space areas that would be avoided by the proposed project. However, potential significant impacts could occur to these species as a result of inadvertent encroachment during the construction and operation phases of the proposed project. Indirect impacts to these special-status plants could result primarily from adverse edge effects such as dust which could disrupt plant vitality in the short-term or construction-related soil erosion and water runoff. These indirect impacts are considered potentially significant and would require standard construction BMPs and construction-related minimization measures to control dust, erosion, and runoff to minimize these impacts.

Special-Status Wildlife

Suitable habitat for coastal California gnatcatcher and least Bell’s vireo occurs adjacent to the proposed development within the upland slopes to the south and west of the site and within the Encinas Creek open space areas to the north, respectively. Though these species were not observed during protocol surveys conducted for the proposed project, these species have been reported adjacent to the project site. Thus, **potentially significant** impacts could occur as a result

of inadvertent encroachment and disturbance if either species moves onto or adjacent to the site in the future during the construction phase or when the project is operational.

Implementation of the proposed project could result in significant impacts to the yellow-breasted chat, observed on-site during 2017 and 2019 surveys and the yellow warbler, white-tailed kite, Cooper's hawk, and southern California rufous-crowned sparrow, determined to have a high potential to occur within off-site habitat associated with Encinas Creek and the surrounding upland slopes. These species are not federally or state-listed, but are California Species of Special Concern. Potential direct impacts on the species would be avoided because no construction is proposed within the Encinas Creek open space areas or suitable upland habitat that occurs within the surrounding slopes. Direct impacts to upland habitat are limited to sparse, low-quality scrub that has been highly disturbed as a result of historic and current agricultural uses. However, construction activities during breeding season for these species could result in a **potentially significant** indirect impact if excessive noise levels as measured from the off-site habitat to be avoided inadvertently result in a nest failure. The project site contains trees, shrubs, and other vegetation that provide suitable nesting habitat for common birds, including sensitive birds and raptors, protected under the MBTA and CDFG Code. Construction of the proposed project could result in the removal or trimming of trees and other vegetation during the general bird nesting season (January 15 through September 15) and, therefore, could result in impacts to nesting birds in violation of the MBTA and CDFG Code. Direct impacts could occur as a result of removal of vegetation supporting an active nest. Impacts would be considered **potentially significant**.

Several additional non-listed special-status species were determined to have a high potential to occur within on- and/or off-site habitat that will be avoided by the project that could potentially use this habitat: coastal whiptail, coast horned lizard, coast patch-nosed snake, two-striped garter snake, western yellow bat, San Diego black-tailed jackrabbit, San Diego desert woodrat, *Dulzura* California pocket mouse, northwestern San Diego pocket mouse, and pocketed free-tailed bat. However, additional, better-quality habitat for these species occurs within the project's proposed open space and other undeveloped habitat in the local area. The impacted areas are not expected to serve as vital foraging habitat; therefore, impacts would be considered **less than significant**. The project is further providing compensatory mitigation for loss of sensitive habitat, including potential foraging habitat for these and other species.

Impact 4.3-2: Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Implementation of the proposed project would result in permanent direct impacts to the vegetation community acreages presented in **Table 4.3-5, *Sensitive Natural Community Impacts and Mitigation***. The limits of impact for the proposed project are illustrated in **Figure 4.3-3, *Impacts to Vegetation Communities and Sensitive Resources***. A **potentially significant** impact would occur since the proposed project would result in impacts to HMP Habitat Groups A–F.

**TABLE 4.3-5
 SENSITIVE NATURAL COMMUNITY IMPACTS AND MITIGATION**

Vegetation Community	Habitat Group	Existing Project Site (Acres)	Project Impacts (Acres)	Required Mitigation Ratio	Required Mitigation (Acres)	Total Mitigation Provided (Acres)	Total Conserved On-Site (Acres)
Southern Willow Scrub	A ¹	0.24	--	3:1	--	N/A	0.24 ⁵
Unoccupied Diegan Coastal Sage Scrub (including disturbed)	D ²	0.4	0.1	2:1 ³	0.2 ³	0.2 ³	0.5 ⁶
Non-native Grassland	E	0.3	0.3	0.5:1 ⁴	0.15	0.15 ⁴	--
Non-native Vegetation	F	1.1	0.8	0.1:1 ⁴	0.08	0.08 ⁴	0.3 ⁷
Disturbed Habitat	F	4.0	3.2		0.34	0.34 ⁴	0.6 ⁷
Developed Land	--	3.4	3.3	--	--	N/A	--
Total		9.44	7.7	--	0.77	0.77	1.64

¹ Habitat confirmed unoccupied by least Bell's vireo during 2017 USFWS protocol surveys.

² Habitat confirmed unoccupied by coastal California gnatcatcher during 2017 USFWS protocol surveys.

³ To include 2:1 creation and/or substantial restoration on-site.

⁴ Through payment of per acre in-lieu mitigation fee to the city.

⁵ This acreage includes all 0.24 acre of existing southern willow scrub that would be avoided and placed in biological open space on-site.

⁶ This acreage includes 0.3 acre of existing Diegan coastal sage scrub that would be avoided and the 0.2 acre of Diegan coastal sage scrub that will be created and/or substantially restored, all of which would be placed in biological open space on-site.

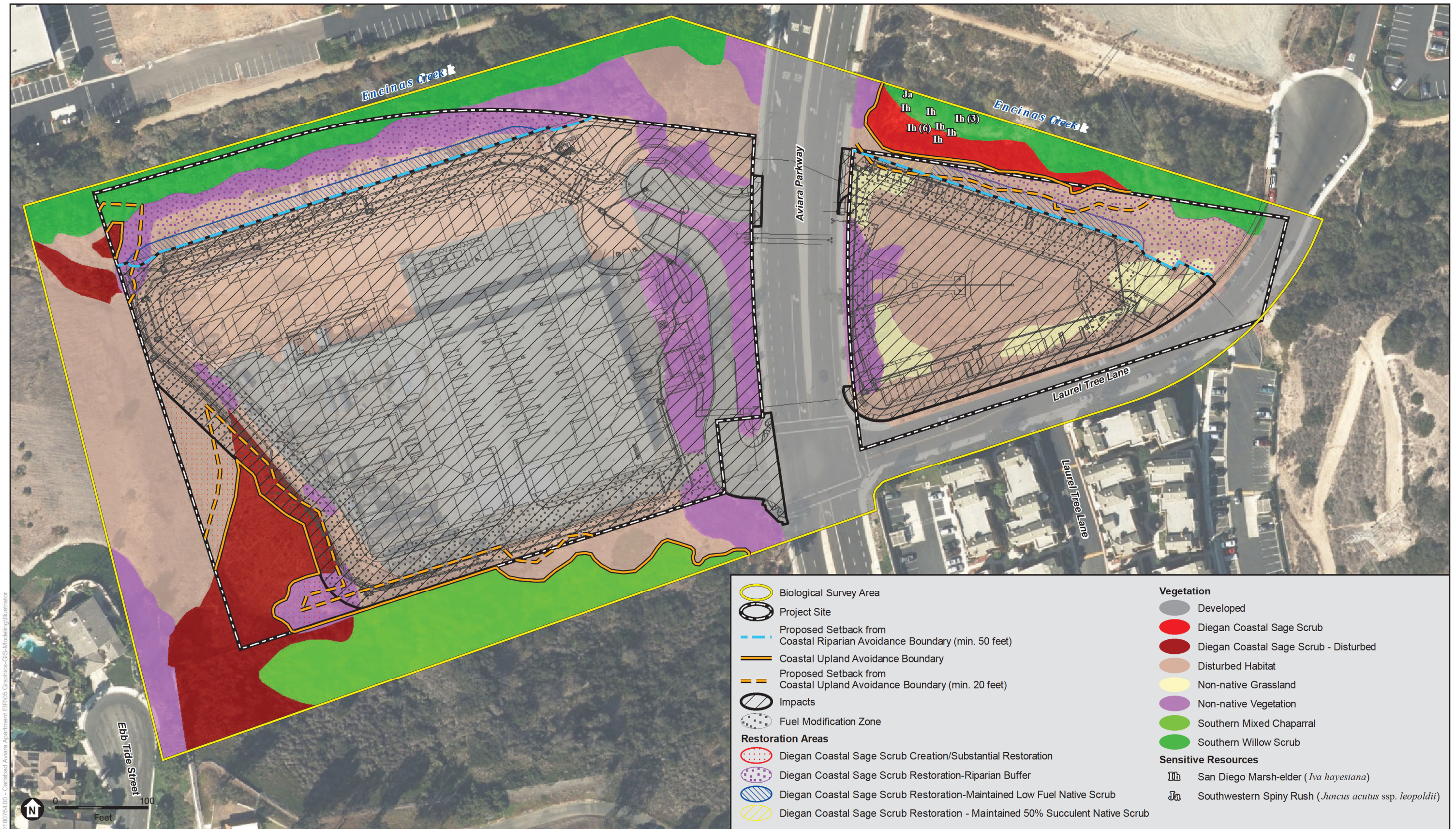
⁷ This acreage would be restored to Diegan coastal sage scrub to meet mitigation and/or riparian buffer restoration requirements on-site.

Special-Status Vegetation Communities

As shown in Table 4.3-5, *Sensitive Natural Community Impacts and Mitigation*, direct impacts to special-status vegetation communities include 0.1 acre of Diegan coastal sage scrub (unoccupied; Habitat Group D). These impacts to special-status vegetation communities are considered **potentially significant**.

Non-Sensitive Vegetation Communities

Direct impacts on non-native grassland (Habitat Group E), non-native vegetation (Habitat Group F) and disturbed habitat (Habitat Group F) are considered **less than significant**. However, payment to the city's Habitat Mitigation Fee or preservation of these habitat types is a requirement of the HMP. Since the areas supporting these habitat types would be used for required riparian buffer restoration and creation and/or substantial restoration mitigation (discussed below), there would not be any areas remaining for on-site preservation. Therefore, impacts to these habitat types would require payment to the city's Habitat Mitigation Fee, which shall be a condition of the proposed project.



SOURCE: Helix, 2019

Aviara Apartments Project

Figure 4.3-3
Impacts to Vegetation Communities and Sensitive Resources

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Indirect Impacts

Indirect impacts to special-status upland vegetation communities could result primarily from adverse edge effects. During construction activities, edge effects may include dust, which could disrupt plant vitality in the short-term, or construction related soil erosion and water runoff. These indirect impacts are considered **potentially significant** and would require standard construction BMPs and construction-related minimization measures to control dust, erosion, and runoff to minimize these impacts.

Potential long-term indirect impacts on vegetation could include trampling by humans traveling off trail, invasion by exotic plants and animals, exposure to urban pollutants (fertilizers, pesticides, herbicides, and other hazardous materials), increase or decrease in natural fire regime, soil erosion, and hydrologic changes (e.g., surface and groundwater level and quality). Although the proposed project would be designed to minimize edge effects, long-term indirect impacts would likely occur and are considered **potentially significant** impacts.

Impact 4.3-3: Would the proposed project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Although the USFWS' National Wetlands Inventory (NWI) data indicated potential aquatic resources in the eastern portion of the site, just south of Encinas Creek, the area was confirmed to not support aquatic or potential jurisdictional resources. Development of the proposed project would be restricted to upland areas that do not support potential jurisdictional waters or wetlands, including federally protected wetlands; therefore, **no direct impacts** are expected. Proposed project avoidance and setbacks from riparian habitat associated with Encinas Creek also shall meet the city's HMP and LCP requirements, as addressed in Impact 4.3-4, below.

Potential significant indirect impacts could occur if storm water runoff is not controlled at the site and sediment, toxics, and/or other material is inadvertently discharged into potentially jurisdictional waters or wetlands within the adjacent open space. As such, this impact would be **potentially significant**.

Impact 4.3-4: Would the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The proposed project's avoidance and setback from riparian habitat associated with Encinas Creek would meet the city's HMP and LCP conservation standards for properties in the coastal zone by incorporating a minimum 50-foot buffer from all riparian habitat. Project compliance with specific HMP and LCP standards related to buffers is discussed in further detail in Impact 4.3-6, below. The more intensive aspects of development associated with the proposed project (i.e., roadways, parking stalls, buildings) would be setback between 50 feet and 100 feet from the riparian habitat edge; therefore, no direct impacts are expected. The proposed project would incorporate a 50-foot setback from the riparian dripline, as required by both the HMP and LCP, and would create native Diegan coastal sage scrub within the buffer area. This riparian buffer and habitat would be placed within the proposed project's open space preserve, which

would represent a newly established HMP Hardline preserve area to connect to the Existing Hardline preserve area associated with Encinas Creek adjacent to the project site. As such, the proposed project would result in a gain in HMP Hardline and native habitat along Encinas Creek, which would increase potential live-in habitat and wildlife movement functions. Lighting from operation of the proposed project could result in adverse indirect impacts on wildlife movement if not appropriately shielded and directed downward and away from the Existing Hardline and open space areas. Additionally, the function of the Encinas Creek corridor could degrade over time and during operation of the proposed project if encroachment and other disturbances are not prohibited. Indirect impacts would be **potentially significant**.

Impact 4.3-5: Would the proposed project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The proposed project's consistency with local policies or ordinances protecting biological resources is detailed below.

Consistency with Chapter 21.203 of the Carlsbad Municipal Code (CRPOZ Ordinance)

The project would be required to demonstrate consistency with the certified Carlsbad LCP and CMC Chapter 21.203, the Coastal Resource Protection Overlay Zone (CRPOZ) Ordinance, which implements the CCA and the approved Carlsbad LCP. Per the LCP, conservation standards are to be applied to properties in the coastal zone before a CDP can be issued. Consistency of the proposed project with the conservation standards in the Carlsbad LCP is addressed in Impact 4.3-6 below. As demonstrated, the proposed project would not conflict with the Carlsbad LCP and therefore would not conflict with the biological resources-related requirements of Chapter 21.203 of the CMC and CRPOZ Ordinance.

Consistency with Chapter 21.210 of the Carlsbad Municipal Code (HMP Ordinance)

The proposed project would be required to demonstrate consistency with CMC Chapter 21.210, the HMP Ordinance. Demonstration of consistency with the HMP would be required before an HMP permit can be issued. Consistency of the proposed project with the Carlsbad HMP is addressed in Impact 4.3-6 below. As demonstrated, the proposed project would not conflict with the Carlsbad HMP.

The project would also be consistent with the Open Space, Conservation and Recreation Element of the General Plan. **Table 4.3-6** *Project Consistency with the Open Space, Conservation, and Recreation Element of the General Plan*, provides a summary of the General Plan goals and policies related to biological resources and a discussion of the proposed project's consistency with each applicable goal/policy.

**TABLE 4.3-6
PROJECT CONSISTENCY WITH THE OPEN SPACE, CONSERVATION, AND RECREATION ELEMENT OF THE
GENERAL PLAN**

Goals/Policies	Consistent?
Goals	
<i>Open Space Framework</i>	
4-G.1 Develop a balanced and integrated open space system reflecting a variety of considerations – resource conservation, production of resources, recreation, and aesthetics and community identity – and ensuring synergies between various open space components and compatibility with land use planning.	Consistent. The proposed project would contribute to a balanced and integrated open space system and maintain functional wildlife corridors by conserving 1.64 acres of the project site as permanent open space with a conservation easement (see Mitigation Measure BIO-2).
<i>Biological Resources and Open Space for Conservation</i>	
4-G.3 Protect environmentally sensitive lands, wildlife habitats, and rare, threatened or endangered plant and animal communities.	Consistent. The project would not directly impact any environmentally sensitive habitat areas or special-status plant species. Mitigation Measures BIO-1, BIO-2, and BIO-3 would protect any sensitive species and habitats in the on-site open space.
Policies	
<i>Habitat and Open Space Conservation</i>	
4-P.9 Maintain and implement the city's Habitat Management Plan (HMP), including the requirement that all development projects comply with the HMP and related documents. Require assessments of biological resources prior to approval of any development on sites with sensitive habitat, as depicted in Figure 4-3.	Consistent. The proposed project would comply with the HMP and related documents, as discussed in Impact 4.3-6 below.
4-P.15 Maintain functional wildlife corridors and habitat linkage in order to contribute to regional biodiversity and the viability of rare, unique or sensitive biological resources throughout the city.	Consistent. The proposed project would incorporate a 50-foot setback from the riparian dripline, as required by both the HMP and LCP, and would create native Diegan coastal sage scrub within the buffer area. This riparian buffer and habitat would be placed within the proposed project's open space preserve, which would represent a newly established HMP Hardline preserve area to connect to the Existing Hardline preserve area associated with Encinas Creek adjacent to the project site (see Mitigation Measure BIO-2).
4-P.18 Require that, at the time of any discretionary approval, any land identified as open space for its habitat or scenic value shall have an appropriate easement and/or land use and zoning designation placed on it for resource protection.	Consistent. The project applicant shall record two types of easements: an open space easement that will be recorded on the final map, and a conservation easement or restrictive covenant that will be recorded by the County of San Diego (see Mitigation Measure BIO-2).

Additionally, the project would protect environmentally sensitive lands, wildlife, and plants through project avoidance and minimization measures designed pursuant to the requirement of the Carlsbad HMP, as discussed in Impact 4.3-6 below.

The project would not conflict with any local policies or ordinances protecting biological resources, as further detailed below. Therefore, there would be **no impact** to local policies or ordinances.

Impact 4.3-6: Would the proposed project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The proposed project maintains conformance with HMP standards including limits on residential development, provisions for habitat connectivity and wildlife movement through the area, avoidance of impacts to wetlands, and implementation of minimum buffer widths. Additionally, the proposed project also incorporates required mitigation from the HMP for significant impacts to sensitive biological resources identified in the preceding sections (on-site habitat conservation, habitat restoration, long-term management, and compliance monitoring and bird breeding season restrictions during construction). **Table 4.3-7 Project Consistency with the HMP and LCP**, provides a summary of the LCP and HMP standards and a discussion of the proposed project’s consistency with each applicable standard. The project would not be subject to Local Facilities Management Zone Standards because the project site is not located within a Standards Area. As such, the impact would be **less than significant**.

**TABLE 4.3-7
 PROJECT CONSISTENCY WITH THE HMP AND LCP**

HMP/LCP Standards	Consistent?
<i>HMP/LCP Standards</i>	
7-1 Environmentally Sensitive Habitat Areas (ESHA) (3-1.2 of LCP).	Consistent. No impacts would occur to riparian or upland ESHA. Impacts to coastal sage scrub are limited to unoccupied and disturbed portions of the habitat, which are not high quality and do not meet the criteria to be considered ESHA based on poor species richness and absence of sensitive species. All remaining habitat within the project site shall be preserved and are proposed for addition into the Existing Hardline (see Mitigation Measure BIO-2).
7-2 Coastal Sage Scrub (3-1.3 of LCP).	Consistent. The proposed project would impact 0.1 acre of the total 0.4 acre of coastal sage scrub on the property, all of which is unoccupied by gnatcatcher. This equates to 75 percent avoidance and conservation, which exceeds the minimum standard of 67 percent. The proposed project would mitigate impacts to 0.1 acre of coastal sage scrub through on-site creation and/or substantial restoration at a 2:1 ratio. The proposed project would further restore 0.9 acre of coastal sage scrub as part of the riparian buffer and permanently conserve an additional 0.3 acre of coastal sage scrub that would be avoided (see Mitigation Measures BIO-2 and BIO-5).
7-3 Oak Woodland (3-1.4 of LCP).	Not Applicable. This standard defines oak woodland. No specific compliance required.
7-4 Streams (3-1.5 of LCP).	Not Applicable. This standard defines streams. No specific compliance required.
7-5 Ephemeral Drainages and Ephemeral Streams (3-1.6 of LCP).	Not Applicable. This standard defines ephemeral drainages and ephemeral streams. No specific compliance required.
7-6 Wetlands (3-1.7 of LCP).	Consistent. No permanent or temporary impacts to southern willow scrub (CCC-jurisdictional riparian habitat) would occur as a result of the proposed project.
7-7 Wetland Mitigation Requirements (3-1.8 of LCP).	Consistent. No permanent or temporary impacts to southern willow scrub (CCC-jurisdictional riparian habitat) would occur as a result of the proposed project.
7-8 No Net Loss of Habitat (3-1.9 of LCP).	Consistent. The proposed project would be required to provide no-net loss of coastal sage scrub through implementation of Mitigation Measure BIO-5 that includes creation/substantial restoration at a minimum 2:1 ratio.

HMP/LCP Standards	Consistent?
7-9 Upland Habitat Mitigation Requirements (3-1.10 of LCP).	Consistent. The proposed project would be required to provide no-net loss of coastal sage scrub through implementation of Mitigation Measure BIO-5 that includes creation/substantial restoration at a minimum 2:1 ratio. On-site preservation is not counted toward mitigation requirements of the proposed project. All mitigation would occur within the coastal zone. All mitigation would be secured with a conservation easement and implementation of a preserve management plan.
7-10 Highly Constrained Properties (3-1.11 of LCP).	Not Applicable. The project site is not considered a “highly constrained property” because the project site does not support ESHA.
7-11 Buffers and Fuel Modification Zones (3-1.12 of LCP).	Consistent. The City of Carlsbad Guidelines for Riparian and Wetland Buffers (2010) provides a definition of riparian and wetland habitats; southern willow scrub is listed as an example of a riparian habitat. Therefore, the riparian buffer guidelines are applied to the proposed project. The proposed project incorporates a riparian buffer that measures a minimum of 50 feet in width, which exceeds 50 feet in some areas. In addition, the proposed project incorporates an upland buffer of 20 feet in width for coastal sage scrub. No development, grading, and alterations, including clearing of vegetation, is allowed in the buffer area, except that which would be required for native habitat creation and/or substantial restoration, recreation trails and public pathways, and fuel modification Zone 3. The proposed project’s fuel modification Zone 3 overlaps a maximum of 20 feet with portions of the upland buffer and is allowable, per the HMP and LCP buffer and fuel modification zone requirements.
7-12 Grading and Landscaping Requirements (Policy 3-4 of LCP).	Consistent. Grading and landscape requirements would be incorporated as part of the project’s development approvals and are addressed in Mitigation Measure BIO-1.
HMP Adjacency Standards	
A. Fire Management	Consistent. The proposed project’s required fuel modification zones have been restricted to development boundaries. Portions of the riparian buffer restoration areas have been prescribed specific Diegan coastal sage scrub restoration plant palettes with 50 percent succulent scrub restoration and low-fuel sage scrub treatments to achieve the dual benefit of biological function and low-fuel load adjacent to development areas. The treatment areas have been developed in coordination with the City of Carlsbad Fire Department and meet the HMP coastal zone and adjacency standards.
B. Erosion Control	Consistent. These provisions are addressed in the design of the proposed project and in Mitigation Measure BIO-1.
C. Landscape Restrictions	Consistent. These provisions are addressed in the design of the proposed project and shall be incorporated into the proposed project’s landscape plans, which are subject to review and approval by the city.
D. Fencing, Signs and Lighting	Consistent. The proposed project incorporates these provisions as project design features and in Mitigation Measures BIO-2 and BIO-6.
E. Predator and Exotic Species Control	Consistent. These provisions are addressed through implementation of Mitigation Measure BIO-2.

4.3.5 Level of Significance before Mitigation

As outlined in the analysis above, implementation of the proposed project would result in **potentially significant** impacts, as discussed above under Impacts 4.3-1, 4.3-2, 4.3-3, and 4.3-4.

4.3.6 Environmental Mitigation Measures

The following mitigation measures would reduce the proposed project’s potentially significant impact identified under Impacts 4.3-1, 4.3-2, 4.3-3, and 4.3-4. Potentially significant impacts identified under Impact 4.3-1 would result from the possibility of inadvertent encroachment and disturbance of the coastal California gnatcatcher and least Bell’s vireo, potential construction

activities during breeding season of California Species of Special Concern, and potential construction activities during the general bird nesting season. Potentially significant impacts identified under Impact 4.3-2 would result from direct impacts to special-status vegetation communities (Habitat Group D) and indirect impacts to special-status upland vegetation communities. The potentially significant impact identified under Impact 4.3-3 would result from stormwater runoff not being controlled at the site and being discharged into potentially jurisdictional waters or wetlands within the adjacent open space. The potentially significant impact identified under Impact 4.3-4 would result from the function of the Encinas Creek corridor degrading over time during operation of the proposed project, if encroachment and other disturbances are not prohibited. The following mitigation measures would reduce these impacts by providing temporary construction and grading fencing, by preserving and managing open space (including the use of permanent appropriate fencing), by providing protection for the coastal California gnatcatcher, by avoiding nesting birds and raptors, by mitigating potential impacts to the Diegan coastal sage scrub, and by controlling exterior project lighting.

Mitigation Measure BIO-1: Temporary Construction Fencing and Grading.

Temporary construction fencing (with silt barriers) shall be installed at the limits of project-related impacts (including construction staging areas and access routes) to prevent sensitive habitat impacts and to prevent the spread of silt from the construction zone into adjacent habitats to be avoided. Fencing shall be installed in a manner that does not impact habitats to be avoided. The applicant shall submit final construction plans to the city for approval at least 30 days prior to initiating any clearing, grubbing, grading, or other construction activities. These final plans shall include the type and location of fencing, including permanent fencing along any urban/wildlands interface to deter unauthorized access (if deemed necessary by the city) and/or temporary fencing to delineate the construction footprint, impact zones within the footprint, protected areas, and no-construction buffer zones.

Employees shall strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas within the fenced project impact limits. These designated areas shall be located in previously compacted and disturbed areas to the maximum extent practicable so as to prevent any runoff from entering adjacent open space and shall be shown on the construction plans. Fueling of equipment shall take place within existing paved areas greater than 100 feet from Encinas Creek. The contract shall check equipment for leaks prior to operation and repair, as necessary. "No-fueling zones" shall be designated on construction plans. Fugitive dust will be avoided and minimized through watering and other appropriate measures.

A biological monitor shall be present during all vegetation clearing activities to help ensure that habitat is not cleared beyond established limits and that no native species are harmed.

If work occurs beyond the fenced or demarcated limits of impact, all work shall cease until the problem has been remedied to the satisfaction of the city. Any riparian/wetland or upland habitat impacts that occur beyond the approved fence shall be mitigated in accordance with ratios specified in the Carlsbad HMP or as otherwise determined by the city, USFWS, U.S. Army Corp of Engineers, Regional Water Quality Control Board,

and/or CDFW. Temporary construction fencing shall be removed upon project completion.

Grading activity shall be prohibited during the rainy season (October 1–April 1). All graded areas shall be landscaped prior to October 1 of each year with either temporary or permanent landscaping materials to reduce erosion potential. Such landscaping shall be maintained and replanted if not well-established by December 1 following the initial planting.

The October 1 grading season deadline may be extended with the approval of the City Engineer subject to implementation by October 1 of special erosion control measures designed to prohibit discharge of sediments off-site during and after the grading operation. Extensions beyond November 15 may be allowed with the approval of the City Engineer in areas of very low risk of impact to sensitive coastal resources and may be approved either as part of the original coastal development permit or as an amendment to an existing coastal development permit.

If any of the responsible resource agencies prohibit grading operations during the summer grading period in order to protect endangered or rare species or sensitive environmental resources, then grading activities may be allowed during the winter by a coastal development permit or permit amendment, provided that appropriate best management practices are adopted, which may include, but are not limited to: silt fencing, gravel bag barriers, fiber rolls, construction road stabilization, dust control, concrete wash out areas, and covering and secondary containment for temporary storage areas and stockpiles. This mitigation measure addresses the impacts identified under Impacts 4.3-1 and 4.3-3 of the EIR.

Mitigation Measure BIO-2: Preservation and Management of Open Space. The project applicant shall record two types of easements: an open space easement that will be recorded on the final map, and a conservation easement or restrictive covenant that will be recorded by the County of San Diego. The easements shall be recorded over those portions of the property identified as proposed on-site preserve in Figure 9 of the approved Biological Resources Letter Report (Appendix C.1 of the EIR).

Prior to recordation of the final map, issuance of a grading permit or clearing of any habitat or vegetation, whichever occurs first, the following items shall be submitted to the city and approved as final by the City Planner or designee: Recordation of Conservation Easement, Restoration Plan, Preserve Management Plan (PMP)/Property Analysis Record (PAR), long-term management funding, and a management agreement (contract) with qualified preserve manager.

Prior to issuance of a grading permit or clearing of vegetation, the project applicant shall prepare a Restoration Plan for the revegetation of the temporary impact areas and proposed creation/substantial restoration areas within the preserve with coastal sage scrub for review and approval by the city or appointed designee. The Restoration Plan shall include 5 years of maintenance and monitoring to ensure the restoration effort is successful.

The project applicant shall prepare a perpetual management, maintenance, and monitoring plan (PMP) according to the standards contained in Section F.2 of the HMP, Volumes 2 and 3 of the Multiple Habitat Conservation Program and the citywide open

space management plan for the on-site biological conservation easement or restrictive covenant areas for review and approval by the city or appointed designee. The PMP shall include area-specific management directives for treatment of non-native invasive plant species within the project site's open space, in addition to those required to meet HMP adjacency standards. The initial treatment of non-native invasive plant species shall occur within the first year following issuance of grading permit, and periodically thereafter, according to a schedule approved by the city and as funding allows.

The applicant shall also establish a non-wasting endowment for an amount approved by the city based on a Property Analysis Record (PAR; Center for Natural Lands Management, 2008) or similar cost estimation method to secure the ongoing funding for the perpetual management, maintenance, and monitoring of the biological conservation easement area by an agency, non-profit organization, or other entity approved by the city. Upon approval of the draft PMP, the applicant shall submit the final PMP and a contract with the approved land manager to the city or appointed designee, as well as transfer the funds for the non-wasting endowment to a non-profit conservation entity.

The project applicant shall install appropriate permanent fencing, such as three-strand smooth-wire fencing, along the boundary of the open space to discourage human access and allow wildlife to move through unobstructed. The project applicant shall also install signage on the fence to educate and inform the public about the open space and to prohibit access. The fencing and signs shall be shown on all final project plans. This mitigation measure addresses the impact identified under Impact 4.3-1 of the EIR.

Mitigation Measure BIO-3: Coastal California Gnatcatcher Protection. No clearing, grubbing, grading, or other construction activities shall occur within Diegan coastal sage scrub during the breeding season of the coastal California gnatcatcher (February 15 to August 31). All grading permits, improvement plans, and the final map shall state the same. If clearing, grubbing, grading, or other construction activities would occur during the breeding season for the gnatcatcher, a pre-construction survey shall be conducted to determine whether gnatcatchers occur within the impact area(s). The pre-construction survey shall consist of one clearance survey by a permitted biologist no more than 3 days prior to the beginning of clearing, grubbing, grading, or other construction activities. If there are no gnatcatchers nesting (includes nest building or other breeding/nesting behavior) within that area, clearing, grubbing, grading, or other construction activities shall be allowed to proceed. If, however, any gnatcatchers are observed, but no nesting or breeding behaviors are noted, additional surveys for breeding/nesting behaviors shall be conducted weekly. If any gnatcatchers are observed nesting or displaying breeding/nesting behavior during the pre-construction survey or additional weekly surveys within the area, a no-work buffer shall be placed on clearing, grubbing, grading, or other construction activities within 500 feet of the nest location at which birds have been observed. The no-work buffer shall remain in place until all nesting behavior has ceased and all young have successfully fledged the nest, as determined by the qualified biologist, or until August 31, whichever happens first. This mitigation measure addresses the impact identified under Impact 4.3-1 of the EIR.

Mitigation Measure BIO-4: Nesting Bird and Raptor Avoidance. If construction activities requiring earthwork, clearing, and grubbing of vegetation must occur during the general bird breeding season for migratory birds and raptors (January 15 to September 15), the project applicant shall retain a qualified biologist to perform a pre-construction survey of potential nesting habitat to confirm the absence of active nests belonging to

migratory birds, including raptors and non-listed sensitive birds (e.g., yellow-breasted chat), afforded protection under the Migratory Bird Treaty Act and California Fish and Game Code. The pre-construction survey shall be performed no more than 3 days prior to the commencement of the activities. If the qualified biologist determines that no active migratory bird or raptor nests occur, the activities shall be allowed to proceed without any further requirements. If the qualified biologist determines that an active migratory bird or raptor nest is present, a no-work buffer shall be placed on construction activities within 500 feet of any active nest at which birds have been observed. The no-work buffer shall remain in place until the young have fledged the nest and the nest is confirmed to no longer be active, as determined by the qualified biologist.

Mitigation Measure BIO-5: Diegan Coastal Sage Scrub Mitigation. The project applicant shall compensate for the unavoidable impacts to 0.1 acre of unoccupied Diegan coastal sage scrub at a ratio of 2:1 to include substantial restoration and/or creation on-site within the project site's open space. Any mitigation must also be approved by the California Coastal Commission.

The project applicant will submit final habitat restoration plans to the city for review and approval at least 30 days prior to initiating project impacts. The Restoration Plan shall be prepared and implemented consistent with MHCP Volume II, Appendix C (Revegetation Guidelines, pages C-1 to C-2), and Volume III; HMP pp. F-8 to F-11; and Open Space Management Plan Section 3.1.5. The Restoration Plan shall, at a minimum, include an evaluation of restoration suitability specific to proposed habitat types, soil and plant material salvage/translocation, planting and seeding lists, discussion of irrigation, maintenance and monitoring program, and success criteria. All areas shall be monitored for a minimum of 5 years to ensure establishment of intended plant communities. This mitigation measure addresses the impact identified under Impact 4.3-2 of the EIR.

Mitigation Measure BIO-6: Project Lighting. All exterior lighting adjacent to Existing Hardline and open space associated with Encinas Creek shall be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from preserved habitat to the maximum extent practicable. Any lighting that faces preserved open space shall use low wattage, long wavelength bulbs (560 nanometers or longer; amber to red). The lighting shall be shown on all final project plans and approved by the city. This mitigation measure addresses the impact identified under Impact 4.3-4 of the EIR.

4.3.7 Level of Significance after Mitigation

Implementation of Mitigation Measure BIO-1 would reduce potentially significant indirect impacts to special-status resources (including special-status vegetation communities, plants, wildlife, and wetlands) and corridor function in the adjacent Encinas Creek open space from construction-related dust, erosion, and runoff to less than significant through construction BMPs and other minimization measures. Implementation of Mitigation Measure BIO-2 would further reduce these potentially significant impacts by ensuring that the adjacent open space would be protected and managed in perpetuity. Implementation of Mitigation Measures BIO-3 and BIO-4 would reduce potentially significant direct impacts on nesting birds, migratory birds, and raptors to less than significant levels through avoidance and minimization measures, including pre-construction surveys. Implementation of Mitigation Measure BIO-5 would reduce potentially significant direct impacts to Diegan coastal sage scrub to less than significant levels through

habitat restoration or creation. Implementation of Mitigation Measure BIO-6 would avoid or substantially lessen potential indirect impacts associated with lighting adjacent to Existing Hardline and open space associated with Encinas Creek by ensuring project lighting is controlled. Conformance with the HMP also requires mitigation for significant impacts identified in the preceding sections (on-site habitat conservation, habitat restoration, long-term management, and compliance monitoring and bird breeding season restrictions during construction), which are addressed by Mitigation Measures BIO-1 through BIO-6. Thus, all direct and indirect impacts to biological resources would be mitigated to a level that is **less than significant**.

4.4 Cultural Resources

This section provides a description and an evaluation of potential impacts to cultural resources and tribal cultural resources that could result from implementation of the proposed project. The analysis in this section is based on the *Cultural Resources Survey and Assessment* prepared by Helix Environmental Planning and dated March 2019 (Helix, 2019) and from consultation information provided by the City of Carlsbad (city). The cultural report is included as Appendix D.1 of this EIR and Tribal consultation information is included as Appendix D.2 of this EIR. Any applicable issues and concerns regarding potential impacts related to cultural and tribal cultural resources as a result of implementation of the proposed project are analyzed within this section.

4.4.1 Existing Conditions

Natural Setting

The project area is situated within the coastal region of northwestern San Diego County, where the climate is characterized as semi-arid steppe, with warm, dry summers and cool, moist winters, but lacking in the precipitation found within the Mediterranean climate within the peninsular range province of San Diego County (Pryde, 2004). The Pacific Ocean is located a little over a mile to the west of the project, and the Agua Hedionda Lagoon is located approximately 1 mile to the north. Encinas Creek travels along the project's northern boundary.

Five soil types are found within the study area for the project: Visalia sandy loam, 2% to 5% slopes; Las Flores fine sandy loam, 2% to 9 slopes; Las Flores fine sandy loam, 9% to 15% slopes; Diablo clay, 15% to 30% slopes; and Salinas clay loam, 2% to 9% slopes (Web Soil Survey, 2017). In addition to these soils, fill soil appears within the portion of the study area along and within Aviara Parkway. The road sits at a considerably higher elevation than the surrounding project area to the east and west and appears to have been built up during its construction in the late 1990s.

The project area is characterized primarily by previously disturbed and developed land, with limited native habitat generally located in the northern and southwestern portions of the property. The project site includes manufactured slopes along Aviara Parkway and Laurel Tree Lane. Surrounding land uses include open space and commercial to the north, and open space and residential to the south, east and west.

Cultural Context

Prehistoric Period

The earliest accepted archaeological manifestation of Native Americans in the San Diego area is the San Dieguito complex, dating to approximately 10,000 years ago (Warren, 1967). The material culture of the San Dieguito complex consists primarily of scrapers, scraper planes, choppers, large blades, and large projectile points. The San Dieguito complex is chronologically equivalent to other Paleoindian complexes across North America, and sites are sometimes called

“Paleoindian” rather than “San Dieguito”. San Dieguito material underlies La Jolla complex strata at the C.W. Harris site in San Dieguito Valley (Warren, ed. 1966).

The traditional view of San Diego prehistory has the San Dieguito complex followed by the La Jolla complex at least 7000 years ago, possibly as long as 9000 years ago (Rogers, 1966). The La Jolla complex is part of the Encinitas tradition and equates with Wallace’s (1955) Millingstone Horizon, also known as Early Archaic or Milling Archaic. The Encinitas tradition is generally “recognized by millingstone assemblages in shell middens, often near sloughs and lagoons” (Moratto, 1984:147). “Crude” cobble tools, especially choppers and scrapers, characterize the La Jolla complex (Moriarty, 1966). Basin metates, manos, discoidals, a small number of Pinto series and Elko series points, and flexed burials are also characteristic.

The Late Prehistoric period is characterized by higher population densities and intensification of social, political, and technological systems. The Late Prehistoric period is represented by the San Luis Rey complex in the northern portion of San Diego County and the Cuyamaca complex in the southern portion. Late Prehistoric artifactual material is characterized by Tizon Brownware pottery, various cobble-based tools (e.g., scrapers, choppers, and hammerstones), arrow shaft straighteners, pendants, manos and metates, and mortars and pestles. The arrow point assemblage is dominated by the Desert Side-notched and Cottonwood Triangular points, but the Dos Cabezas Serrated type also occurs (Wilke and McDonald, 1986). Subsistence is thought to be focused on the utilization of acorns and grass seeds, with small game serving as a primary protein resource and big game as a secondary resource. Fish and shellfish were also secondary resources, except immediately adjacent to the coast, where they assumed primary importance (Bean and Shipek, 1978; Sparkman, 1908). The settlement system is characterized by seasonal villages where people used a central-based collecting subsistence strategy.

Ethnohistory

Based on ethnographic data, including the areas defined for the Hokan-based Yuman-speaking peoples (Kumeyaay) and the Takic-speaking peoples (Luiseño) at the time of contact, it is now generally accepted that the Cuyamaca complex is associated with the Kumeyaay and the San Luis Rey complex with the Luiseño. The name Luiseño derives from Mission San Luis Rey de Francia and has been used to refer to the Indian people associated with that mission, while the Kumeyaay people are also known as Ipai, Tipai, or Diegueño (named for Mission San Diego de Alcalá). Agua Hedionda Creek is often described as the division between the territories of the Luiseño and the Kumeyaay people (Bean and Shipek, 1978; Luomala, 1978), although various archaeologists and ethnographers use slightly different boundaries. Traditional stories and songs of the Native people also describe the extent of traditional use areas.

At the time of Spanish contact, Yuman-speaking Kumeyaay bands occupied southern San Diego and southwestern Imperial counties and northern Baja California. The Kumeyaay lived in semi-sedentary, politically autonomous villages or rancherías. Most rancherías were the seat of a clan, although it is thought that, aboriginally, some clans had more than one ranchería and some rancherías contained more than one clan (Bean and Shipek, 1978). Several sources indicate that large Kumeyaay villages or rancherías were located in river valleys and along the shoreline of coastal estuaries (Bean and Shipek, 1978; Brackett 1951; Hoover et al., 1966; Kroeber, 1925).

In northern San Diego County and portions of Riverside County, the Late Prehistoric and historic periods are represented by the San Luis Rey (SLR) complex which is an archaeological pattern representing the latest phase of prehistory in the region occupied at the time of European contact by the Luiseño Indians. The SLR complex is divided into two phases: SLR I and SLR II. Elements of the SLR complex include small, triangular, pressure-flaked projectile points (generally Cottonwood series, but Desert Side-notched series also occurs); milling implements: mortars and pestles, manos and metates, and bedrock milling features; bone awls; Olivella shell beads; other stone and shell ornaments; and cremations (Meighan 1954; Moratto 1984; True et al. 1974). The later SLR II complex also includes several elements not found in the SLR I complex: “pottery vessels, cremation urns, red and black pictographs, and such nonaboriginal items as metal knives and glass beads” (Meighan 1954:223). SLR I was originally thought to date from A.D. 1400 to A.D. 1750, with SLR II dating between A.D. 1750 and A.D. 1850 (Meighan 1954). However, that division was based on the assumption that the Luiseño did not practice pottery manufacture until just prior to the arrival of the Spanish. The chronology has since been revised due to evidence that pottery may have been introduced to the Luiseño by their southern neighbors, the Kumeyaay, circa A.D. 1200-1600 (True et al. 1974).

Historical Background

While Juan Rodriguez Cabrillo visited San Diego briefly in 1542, the beginning of the historic period in the San Diego area is generally given as 1769. It was that year that the Royal Presidio of San Diego was founded on a hill overlooking Mission Valley. The Mission San Diego de Alcalá was constructed in its current location 5 years later. The Spanish Colonial period lasted until 1821 and was characterized by religious and military institutions bringing Spanish culture to the area and attempting to convert the Native American population to Christianity. Mission San Diego was the first mission founded in Southern California. Mission San Luis Rey, in Oceanside, was founded in 1798. Asistencias (chapels) were established at Pala (1816) and Santa Ysabel (1818).

The Mexican period lasted from 1821, when California became part of Mexico, to 1848, when Mexico ceded California to the United States under the Treaty of Guadalupe Hidalgo at the end of the Mexican-American War. Following secularization of the missions in 1834, mission lands were given as large land grants to Mexican citizens as rewards for service to the Mexican government. The society made a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos. The Pueblo of San Diego was established during the period, and transportation routes were expanded. Cattle ranching prevailed over agricultural activities.

The American period began in 1848, when California was ceded to the United States. The territory became a state in 1850. Terms of the Treaty of Guadalupe Hidalgo brought about the creation of the Lands Commission in response to the Homestead Act of 1851, which was adopted as a means of validating and settling land ownership claims throughout the state. Few of the large Mexican ranchos remained intact, due to legal costs and the difficulty of producing sufficient evidence to prove title claims. Much of the land that once constituted rancho holdings became available for settlement by immigrants to California. The project site is situated within lands formerly within the Rancho Agua Hedionda land grant, which had been part of the holdings of

Mission San Luis Rey. Following secularization of church lands, large land grants were given by the Mexican government to prominent citizens. The landholdings of Mission San Luis Rey were divided into five separate land grants: Agua Hedionda, Buena Vista, Encinitas, Guajome, and Los Vallecitos de San Marcos.

In the late nineteenth and early twentieth centuries, development in Carlsbad and the project area was spurred by agricultural pursuits. The construction of the California Southern and California Central railroads in the 1880s, linking San Diego County to San Bernardino and Los Angeles, provided the agricultural industries with a rail link to Los Angeles area markets (Nevin, 2000). In the 1920s, the majority of the entries in the census in the city were farms (City of Carlsbad, 2015). Flowers, spurred by Paul Ecke Sr. and others, became an important agricultural pursuit in the early twentieth century. Paul Ecke Sr. and Luther Gage transplanted from Los Angeles to northern San Diego County in pursuit of agricultural land after World War I, when the Los Angeles region was becoming increasingly developed (Nevin, 2000). Ecke Sr. grew poinsettias and Gage grew gladioli, ranunculi, freesias, and anemones and cultivated what would become the city's official flower, the bird-of-paradise.

After World War II, suburban development began to increase in Carlsbad and San Diego County, although agriculture continued to play an important role in the region. However, suburban development began to increase in the coastal region of northern San Diego County in the early twentieth century, and Carlsbad's population grew to 1,800 residents by 1928 (Dyett & Bhatia, 2015). The construction of U.S. Route 101 (Highway 101) brought the focus of the automobile to the region and was an important contributor the growth of the Carlsbad. The city was incorporated in 1952, consisting of approximately 7.5 square miles (City of Carlsbad, 2015). Annexations gradually expanded the city's boundaries to the south and east, resulting in the current size of 39 square miles. As urban development increased along the coast, the agricultural and flower industries dispersed throughout the county and continued to grow throughout the latter half of the twentieth century.

In the early twentieth century, the Frazee family was part of the booming agricultural industry in the western north county of San Diego region. In the early 1900s, Frank Frazee had a vegetable farm in Oceanside where his neighbor, Luther Gage, introduced him to the Ranunculus flower (The Flower Fields, 2017). In the 1930s, F. Frazee started growing the flower and taught his teenage son, Edwin, the family flower and vegetable growing business. E. Frazee took over the family business in 1940 and cultivated the Ranunculus flower, developing crops of multiple different colors (Morrow, 2004; The Flower Fields, 2017). In the mid-1900s, E. Frazee expanded Edwin Frazee Inc. into the wholesale marketing and distributing business, Frazee Flowers, Inc. (Mayer, 2004). In 1965, E. Frazee leased land in Carlsbad owned by Paul Ecke Jr. and planted the Ranunculus flowers in the plots now known as The Flower Fields (The Flower Fields, 2017). E. Frazee helped turn flowers into a thriving local industry; he and his wife, Mabel, operating one of the largest flower and vegetable businesses in California, sold wholesale flowers and vegetables to Los Angeles flower and produce markets (Mayer, 2004; Morrow, 2004).

Cultural Resources Archival Research

A records search of previously recorded archaeological resources, reports, and historic addresses of the project area and a 1-mile radius was requested from the South Coastal Information Center (SCIC) on June 21, 2017, and a focused records search update conducted at the SCIC on March 13, 2019. The records search included archaeological and historical resources, locations and citations for previous cultural resources studies, and a review of the State Office of Historic Preservation (OHP) historic properties directory.

The SCIC has a record of 96 cultural resource studies within the search radius, nine of which involved portions of the project area. Three of these studies covered larger areas which are shown as including the project, but recorded no resources within or adjacent to the project site (Hector, 2007; Scientific Resource Surveys, Inc. 1982; WESTEC 1980). Six of the studies included small portions of the project site along the boundaries, but predominantly focused on areas outside of the current project (Brian F. Mooney and Associates, 1991; Byrd and O'Neill, 2002; Gallegos and Kyle, 1988; Gallegos and Pigniolo, 1989; Gardner, 2009; Ní Ghabhláin, 2000). One of these, conducted in 1988 by Carolyn Kyle and Dennis Gallegos for portions of the Floral Trade Center, identified CA-SDI-11022 within the project property, to the east of the existing warehouse structure (Gallegos and Kyle, 1988). The report notes a historic structure north of the project area that was constructed sometime after 1920, but describes it as in poor condition and not a significant resource (Gallegos and Kyle, 1988). The additional studies on file at SCIC which involved portions of the current project area did not record any resources within the project site.

The record search results from the SCIC indicate that 41 cultural resources have been previously recorded within a 1-mile radius of the project property, one of which (CA-SDI-11022) is recorded within the project site. CA-SDI-11022 is described in the site record as a small surface scatter of approximately 15 fragments of marine shell (Kyle, 1988) and that a metavolcanic lithic flake was also observed within the shell scatter (Gallegos and Kyle, 1988). The site is mapped incorrectly at SCIC.

In addition to the resource within the property, two sites have been recorded within a quarter-mile radius of the project site: CA-SDI-9607 and CA-SDI-14064. Both are food processing sites, though CA-SDI-9607 is recorded specifically as a shell midden and CA-SDI-14064 is described as a light shell scatter, with one flake and dark soil also referenced in the description (Desautels, 1982; Harris and Tift, 1995, respectively). The remaining resources recorded within a 1-mile radius of the project include bedrock milling features, shell middens, shell and lithic scatters, isolated artifacts, and multi-component sites, which represent a wide range of uses such as habitation (long-term and temporary), food processing, and tool manufacture.

Historic Aerial Photography Review

Historic aerial photographs from 1947 to 2016 were reviewed, as were historic topographic maps from 1893 to 1997. No buildings or structures are shown on the 1893 and 1901 USGS 15-minute Oceanside topographic maps, the 1901 USGS 30-minute San Luis Rey topographic map, and the 1949 USGS 7.5-minute Encinitas quadrangle. No roads are present near the project area until the 1949 topographic map, when a road near the current location of Palomar Airport Road is shown

to the north of the project site. The existing warehouse structure and the northern driveway present within the West Parcel are first visible on the 1968 7.5-minute Encinitas quadrangle, and Palomar Airport Road is shown in its current location. Additionally, a road is shown to the east of the East Parcel at that time. Aviara Parkway is shown in its current location on the 1997 7.5-minute Encinitas quadrangle.

A review of historic aerial photographs revealed that the project site was situated along the southern side of the foothills along Canyon de las Encinas between the years of 1947 and 1953, until later years when the project property and surrounding area were subject to increasing development (NETR Online, 2019). A ranch or farmhouse and associated landscaping and outbuildings are visible just north of the northern boundary for the project area between 1947 and 1980, within modern-day Aviara Parkway, which had not yet been established (NETR Online, 2019). The ranch/farm structures are no longer visible after 1980. Cultivated fields are located to the north of the project area in 1964 and 1967, and by 1980 the existing warehouse is present and the West Parcel developed into its current use. During these same years, the East Parcel supported greenhouses and appeared to have been graded. Encinas Creek appears to have been subjected to improvements (channelization) between the years of 1967 and 1980, during which the surrounding area was increasingly developed into agricultural uses. The portion of the housing development to the southwest of the project site had been developed by 1990, and by 1997, the portion of Aviara Parkway within the project area was under construction, and the driveway within the southeastern corner of the West Parcel appears to have been constructed or under construction. Fill slopes associated with Aviara Parkway and Laurel Tree Lane are visible around the inner boundary of the East Parcel in the 1997 aerial, and by 2002, the housing development to the south of Laurel Tree Lane had been constructed. Based on aerial imagery, the project area has remained much the same since 2002.

Sacred Lands File Search

The Native American Heritage Commission (NAHC) maintains a confidential Sacred Lands File (SLF) which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on June 19, 2017, for an SLF search and list of Native American contacts. The response, found in the cultural report (Appendix D.1), received on June 21, 2017, indicated: “A search of the SLF was completed for the project with negative results.”

Built Environment Research

A detailed legal history of the property was reviewed and included property ownership records, maps, property sales listings, and historical Tax Collector information (Holtz, 2016). Construction dates and details of later modifications were obtained from parcel records and refined based on aerial photography and interviews. The city has no building permit for the structure on-site on file (Stewart and Maikisch, 1994).

Historic maps of the project area reviewed include 7.5-minute (1948, 1949, 1968, 1975, and 1997) and 15-minute (1893, 1898, and 1901) USGS quadrangle maps. Sanborn Fire Insurance Maps do not include coverage of the site vicinity (Holtz, 2016). Aerial photographs consulted include 1939, 1947, 1953, 1964, 1967, 1970, and 1979 (Holtz, 2016; NETR Online, 2019).

Occupancy history was developed as part of a prior environmental assessment (Stewart and Maikisch, 1994) and confirmed as part of the current effort (Holtz, 2016).

Most of the West Parcel consists of a large warehouse with loading dock and surrounding parking area. The warehouse was built for commercial activities related to agricultural retail, packing, and shipping operations. PanGIS conducted an intensive survey on March 7, 2019, to document the structure, which is reported on in detail in the *Cultural Resources Survey and Assessment* (Appendix D.1). The exterior and interior of the structure were examined and photographed. Field notes included information on architectural style and features, construction methods, modifications, and property condition.

The warehouse is square in shape, 200 feet per side, and is oriented just west of north. The roof is low pitched, gabled on the north and south sides, and clad in corrugated sheet metal with skylight openings. It sits atop a structure of heavy steel girders running east-west. The building is clad in corrugated sheet metal and sits on a single-level concrete slab floor. Interior and exterior doors consist of standard-sized interior doors as well as large wooden sliding doors and metal roll-up doors. Aluminum-framed sliding windows are present on the north side of the building on both office floors.

Archaeological Survey

The property was surveyed on July 19, 2017, by Helix and two Native American monitors from the San Luis Rey Band – Luiseño and Red Tail Monitoring and Research (Kumeyaay). In general, ground visibility throughout a majority of the project was very low (50% or less) due to the presence of vegetation, asphalt, or existing structures or equipment. No archaeological cultural material was observed within the project area during the survey, and the previously recorded prehistoric site within the project area (CA-SDI-11022) appears to have been destroyed in the late 1990s by the construction of Aviara Parkway. During the survey, the area surrounding the recorded site location within the project area was carefully inspected, but no remnant of the shell scatter was observed. The area surrounding the recorded site location was inspected and found to be heavily disturbed.

4.4.2 Regulatory Setting

State

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Public Resources Code (PRC) 21084.1 and CEQA Guidelines, Section 15064.5 discuss significant cultural resources as “historical resources,” and define them as:

- Resource(s) listed or determined eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (CRHR) (CEQA Guidelines Section 15064.5[a][1]);
- Resource(s) either listed in the NRHP [National Register of Historic Places] or in a “local register of historical resources” or identified as significant in a historical resource survey

meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless “the preponderance of evidence demonstrates that it is not historically or culturally significant” (CEQA Guidelines Section 15064.5[a][2]); and/or

- Resources determined by the Lead Agency to meet the criteria for listing on the CRHR (CEQA Guidelines Section 15064.5[a][3]).

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
2. It is associated with the lives of persons important to local, California, or national history.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
4. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under CEQA Guidelines Section 15064.5(a)(4), a resource may also be considered a “historical resource” for the purposes of CEQA at the discretion of the lead agency.

All resources that are eligible for listing in the CRHR must have integrity, which is the authenticity of a historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination.

Assembly Bill 52 and Related Public Resources Code Sections

Assembly Bill (AB) 52 was approved by Governor Brown on September 25, 2014. The act amended PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation or a Notice of Intent to adopt a Negative Declaration or Mitigated Negative Declaration (MND) is filed.

The primary intent of AB 52 is to include California Native American tribes early in the environmental review process and to establish a new category of resources related to Native Americans, known as tribal cultural resources, that require consideration under CEQA. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American [T]ribe” that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial

evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for a tribal cultural resources update to CEQA Guidelines Appendix G, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency's formal notification and the lead agency must begin consultation within 30 days of receiving the tribe's request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project's impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to PRC Section 21080.3.1 and does not provide comments to the lead agency, or otherwise does not engage in the consultation process, or if the lead agency has complied with section 21080.3.1(d) and the California Native American tribe has not requested consultation within 30 days, then the lead agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, then that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Local

The section below includes a summary of the city's ordinances, regulations, and planning policies applicable to the proposed project. Where provisions are required by law or ordinance (e.g., the Carlsbad Municipal Code) it is presumed that the proposed project would adhere to the requirements. Where policies or guidelines are provided (i.e., they are not specific regulatory

requirements) consistency of the project with the policies identified are either described directly within the individual regulatory setting section below or, if more detail is required, consistency is described further in the impact analysis that follows (Section 4.4.4, *Project Impact Analysis*).

City of Carlsbad General Plan

The city's General Plan contains policies that address cultural resources in the city. Specific policies applicable to cultural resources and how the cultural resources impact analyses of development projects shall be conducted are contained in the Arts, History, Cultural, and Education Element and are presented in this section. These applicable policies have guided the impact analysis for cultural resources contained in Section 4.4.4, *Project Impact Analysis*. In particular, the impact analysis and mitigation measures identified in this cultural resources analysis are consistent with the City of Carlsbad Cultural Resource Guidelines and monitoring would be required during construction consistent with the policies set forth below. Furthermore, the city has led consultation with the required organizations and individuals. On January 31, 2019, the city submitted letters requesting consultation to four Native American individuals and organizations on the city's AB 52 Notification List. As a result of this outreach, the city received letters via email from the San Luis Rey Band of Mission Indians and the Rincon Band of Luiseño Indians officially requesting formal consultation; the city conducted this consultation and it informed the mitigation measures identified for the project, which are provided in Section 4.4.6, Environmental Mitigation Measures.

Historic Resources

7-P.6 Ensure compliance with the City of Carlsbad Cultural Resource Guidelines to avoid or substantially reduce impacts to historic structures listed or eligible to be listed in the National Register of Historic Places or the California Register of Historical Resources.

Archaeological and Paleontological Resources

7-P.7 Implement the City of Carlsbad Cultural Resources Guidelines to avoid or substantially reduce impacts to archaeological and paleontological resources.

7-P.8 During construction of specific development projects, require monitoring of grading, ground disturbing, and other major earthmoving activities in previously undisturbed areas or in areas with known archaeological or paleontological resources by a qualified professional, as well as a tribal monitor during activities in areas with cultural resources of interest to local Native American tribes. Both the qualified professional and tribal monitor shall observe grading, ground-disturbing, and other earth-moving activities.

7-P.9 Ensure that treatment of any cultural resources discovered during site grading complies with the City of Carlsbad Cultural Resource Guidelines. Determination of the significance of the cultural resource(s) and development and implementation of any data recovery program shall be conducted in consultation with interested Native American tribes. All Native American human remains and associated grave goods shall be returned to their most likely descendent and repatriated. The final disposition of artifacts not directly associated with Native American graves shall be negotiated during consultation

with interested tribes; if the artifact is not accepted by Native American tribes, it shall be offered to an institution staffed by qualified professionals, as may be determined by the City Planner. Artifacts include material recovered from all phases of work, including the initial survey, testing, indexing, data recovery, and monitoring.

7-P.10 Require consultation with the appropriate organizations and individuals (e.g., Information Centers of the California Historical Resources Information Systems [CHRIS], the Native American Heritage Commission [NAHC], and Native American groups and individuals) to minimize potential impacts to cultural resources that may occur as a result of a proposed project.

7-P.11 Prior to occupancy of any buildings, a cultural resource monitoring report identifying all materials recovered shall be submitted to the City Planner.

Local Coastal Program

The project is located in the Mello II segment of the city's Local Coastal Program (City of Carlsbad, 2017b). The following archaeological policy is provided for in the Mello II segment of the city's coastal zone:

Policy 8-4: Archaeological and Paleontological Resources

The environmental impact review process will determine where development will adversely affect archaeological and paleontological resources. A site-specific review should also determine the most appropriate methods for mitigating these effects. Most importantly, the City of Carlsbad should require the implementation of these measures.

Through preparation of this EIR for the proposed project, including the analysis and mitigation measures put forth in this section, the city is adhering to this policy. Furthermore, the city will require adoption and implementation of the mitigation measures through a mitigation monitoring and reporting program, which will be required with adoption of the project should it be approved by City of Carlsbad decision-makers.

City of Carlsbad Municipal Code

Section 22.06.020 of the Carlsbad Municipal Code includes the following criteria for cultural resource assessment:

A historic resource may be considered and approved by council for inclusion in the historic resources inventory based on one or more of the following:

- A. It exemplifies or reflects special elements of the city's cultural, social, economic, political, aesthetic, engineering or architectural history; or
- B. It is identified with persons or events significant in local, state or national history; or
- C. It embodies distinctive characteristics of a style, type, period or method of construction, is a valuable example of the use of indigenous materials or craftsmanship or is representative of a notable work of an acclaimed builder, designer or architect; or

- D. It is an archaeological, paleontological, botanical, geological, topographical, ecological or geographical site which has the potential of yielding information of scientific value; or
- E. It is a geographically definable area with a concentration of buildings, structures, improvements, or objects linked historically through location, design, setting, materials, workmanship, feeling and/or association, in which the collective value of the improvements may be greater than the value of each individual improvement. (Ord. NS-433 Section 3, 1997; Ord. NS-141 Section 5, 1991; Ord. 9776 Section 1, 1985).

City of Carlsbad Tribal, Cultural, and Paleontological Guidelines

In 1990, the city developed guidelines for the treatment of cultural resources. The guidelines were consistent with the cultural and historical resource guidelines set forth by the National Historic Preservation Act (NHPA), as amended, and CEQA, established standards of performance for resource investigation, and presented a systematic method of preserving identified resources. Carlsbad City Council Policy No. 83, adopted in 2016, called for the city to: “recognize [the city’s] responsibility to protect with improved certainty the important historical and cultural values of current tribal cultural resources within the city limits and to establish an improved framework for the city’s consultations with Native American tribes that are traditionally and culturally affiliated with the City of Carlsbad, including the San Luis Rey Band of Mission Indians.”

In 2017, updated Tribal, Cultural, and Paleontological Guidelines were released to address the regulatory changes and the addition of new procedures to address additional requirements that had emerged since 1990 (City of Carlsbad, 2017a). The guidelines, which can be found in their entirety at <http://www.carlsbadca.gov/civicax/filebank/blobdload.aspx?BlobID=34010>, provide a framework for the roles and responsibilities of those responsible for compliance with the Guidelines and provide the processes by which cultural resources are assessed under the Guidelines.

4.4.3 Thresholds and Methodology

Thresholds

A significant impact would occur to cultural resources if the proposed project would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

A significant impact would occur to tribal cultural resources if the proposed project would:

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

- i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).
- ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Methodology

The analysis of impacts to historic architectural resources, archaeological resources, and human remains is based on the *Cultural Resources Survey and Assessment* (Appendix D.1) prepared by qualified personnel who meet or exceed the Secretary of the Interior's Professional Qualification Standards in history and archaeology (Helix, 2019).

Historic Architectural Resources

Key steps in completing the assessment included a survey of the historic-age building within the project site, archival research, and field documentation. Research into the project site's development history included a review of property ownership records, maps, property sales listings, and historical Tax Collector information. Construction dates and details of later modifications were obtained from parcel records and refined based on aerial photography and interviews with the current owner.

Under CEQA (PRC Section 21084.1), the evaluation of impacts to historic resources consists of a two-part inquiry: (1) a determination of whether the project site contains or the immediate surroundings contain, any historic resources that may be impacted by the project; and, if any such resources exist, (2) a determination of whether the project would result in a "substantial adverse change" to the significance of any such resources.

Archaeological Resources

The *Cultural Resources Survey and Assessment* included: (1) a cultural resource records search conducted at the SCIC to review recorded archaeological resources within a 1-mile radius of project site, as well as a review of cultural resource reports, the OHP historic properties directory, and historic topographic maps on file; (2) an SLF search received from the NAHC; (3) a review of historic aerial imagery and other technical studies; and (4) a pedestrian survey of the project site. No Sanborn Fire Insurance Map coverage was available for the project site and vicinity.

The potential for the project site to contain buried archaeological resources is assessed based on the findings of the cultural resource records search (i.e., presence and proximity of known resources) and SLF search, land use history research, subsurface geological conditions, and the proposed excavation parameters for the project.

Tribal Cultural Resources

The analysis of impacts to tribal cultural resources is based on the consultation between the city and the responding tribes, information provided by the tribes, and the *Cultural Resources Survey and Assessment*. The potential for the project site to contain tribal cultural resources was assessed based on information provided by tribes and supplemented by the findings of the cultural resource records search (i.e., presence and proximity of known resources), the SLF search, land use history research, subsurface geological conditions, and the proposed excavation parameters for the proposed project. The NAHC was contacted on June 19, 2017, to request a search of the SLF of the project site.

Human Remains

The potential for the project site to contain human remains was assessed based on the findings of the cultural resource records search (i.e., presence and proximity of known resources), the SLF search, land use history research, subsurface geological conditions, and the proposed excavation parameters for the project.

4.4.4 Project Impact Analysis

Impact 4.4-1: Would the proposed project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Historic Architectural Resources

As discussed in the *Cultural Resources Survey and Assessment* (Appendix D.1), the Carlsbad Floral Trade Center warehouse at 1205 Aviara Parkway (P-37-036606) is the only extant historic-age building on the project site. This building was constructed more than 45 years ago, meaning it meets the general age requirement to qualify as a potential historical resource. As such, the building was evaluated for eligibility for listing under the National and California registers. As a commercial warehouse, 1205 Aviara Parkway is best classified as a building. As a wholesale flower storage and shipping center, it can be best evaluated in the historic context of agricultural development of Carlsbad. Architecturally, the warehouse can be best evaluated in the context of 1960s industrial buildings.

The warehouse was originally constructed in 1968 at approximately half of its current size, with a loading dock on the east side of the building. In 1969, the warehouse was extended to the east and west and the loading dock moved to the north side; it has retained this configuration to the present day. By 1970, aerials show the East Parcel being used for agricultural crops, possibly for vegetable or flowers (Stewart and Maikisch, 1994).

The Carlsbad Floral Trade Center located at 1205 Aviara Parkway (P-37-036606) is recommended as not eligible for listing in the NRHR, CRHR or as having local significance. The resource was evaluated under Criterion 1 and was recommended ineligible under Criterion 1 as it does not have a significant association with important historic events and was not instrumental to the development of the flower industry. The resource was also built after the period of significance when the former owner Edwin Frazee was instrumental in the development of the

flower industry and therefore ineligible under Criterion 2. The warehouse is not the work of a master architect or craftsman and does not possess high artistic value and was found ineligible under Criterion 3. Finally, the warehouse was found to be ineligible under Criterion 4 as it is a common property type and is not likely to yield important information on history or prehistory. As such, P-37-036606 does not qualify as a historic resource under CEQA provisions, and the project would not result in a significant adverse impact on the built environment resource addressed in this report. Furthermore, the project site is located within an area of low sensitivity for architectural history, per the Tribal, Cultural, and Paleontological Guidelines (City of Carlsbad, 2017a). The existing, surrounding built environment was all developed post-1980; as such, no impacts on historic resources in the vicinity of the project site would occur with development of the proposed project.

Archaeological Resources

One archaeological resource was identified within the project site. CA-SDI-11022, initially recorded in 1988, was destroyed in the late 1990s by the construction of Aviara Parkway and the existing asphalt driveway that leads from the parkway down slope to the warehouse location. No surface indication of the site or any other cultural material was identified during the survey or additional research of the project site. Given this, **no impacts** to CA-SDI-11022 as a result of the proposed project would occur.

Although no impacts to significant cultural resources are anticipated, there is a potential for subsurface cultural material. The ground visibility during the survey was limited as a result of vegetation, structures, and pavement being present throughout much of the project site. Additionally, the project area is located south of Encinas Creek and is underlain by young alluvial soils, indicating a potential for buried cultural resources.

The general vicinity of the project site has been occupied/used by the Luiseño and Kumeyaay people for thousands of years, and the record search revealed 41 previously recorded cultural resources within a 1-mile radius of the property, all of which are pre-contact cultural sites. The closest sites to the project area are shell scatters, but several major habitation sites and numerous temporary camps are located within a 1-mile radius, some of which include human remains. In addition, a ranch or farmhouse with associated landscaping and outbuildings was present north of the project area from at least 1947 until 1980, which indicates a potential for historic-period features or cultural material to be present subsurface. This would be considered a **potentially significant impact**.

Impact 4.4-2: Would the proposed project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Archaeological resources not qualifying as historical resources under CEQA are considered for their potential to qualify as unique archaeological resources. Review of previous investigations undertaken in the vicinity of the project site, as well as review of the prehistoric context for the area, provides an understanding of the potential for encountering prehistoric archaeological resources in the project site during construction. When completing analysis of subsurface archaeological sensitivity, important factors to consider include elevation, soil conditions, proximity to water, proximity to raw materials, and ethnographic and historic information. It is

also necessary to evaluate the historic land use and past development and disturbances on the project site in determining the possibility for the preservation of subsurface prehistoric archaeological materials.

As discussed above under Impact 4.4-1, one archaeological resource (CA-SDI-11022), has been previously recorded within the project site; but is since believed to be destroyed and no additional materials were identified within the project site during survey. As site CA-SDI-11022 is no longer extant within the project site, it is therefore not eligible for listing in the CRHR and does not otherwise qualify as and historical or unique archaeological resource pursuant to CEQA.

However, as described above, the general vicinity of the project site has been occupied/used by the Luiseño and Kumeyaay people for thousands of years, and the record search revealed 41 previously recorded cultural resources within a 1-mile radius of the property, all of which are pre-contact cultural sites. The closest sites to the project area are shell scatters, but several major habitation sites and numerous temporary camps are located within a 1-mile radius, some of which include human remains. In addition, a ranch or farmhouse with associated landscaping and outbuildings was present north of the project area from at least 1947 until 1980, which indicates a potential for historic-period features or cultural material to be present subsurface. This would be considered a **potentially significant impact**.

Impact 4.4-3: Would the proposed project disturb any human remains, including those interred outside of formal cemeteries?

Although the project would not disturb any known human remains, human remains have been identified at three archaeological sites within a mile of the project. Grading and excavation associated with the proposed project would extend into previously undisturbed subsurface areas or other locations where there is some possibility to encounter buried human remains. As a result, although unlikely, construction may disturb human remains, including those interred outside of dedicated cemeteries, which would be a **potentially significant impact**.

Impact 4.4-4: Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?**
- ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?**

Tribal Consultation

The city has engaged in consultations with Native American tribes pursuant to AB 52. Letters and other materials reflecting the city's consultations with Native American tribes and the NAHC are

provided in Appendix D.2 (detailed notes of conversations are confidential and on file with the city). This section summarizes these consultations.

On January 31, 2019, the city submitted letters requesting consultation to four Native American individuals and organizations on the city's AB 52 Notification List. As a result of this outreach, the city received letters via email from the San Luis Rey Band of Mission Indians and the Rincon Band of Luiseño Indians officially requesting formal consultation.

Through the consultation process with the city, the San Luis Rey Band of Mission Indians (SLRBMI) provided its knowledge of the project site, cited concerns about the proposed project and requested mitigation that was consistent with the city's guidelines and included Native American monitoring. SLRBMI was provided the cultural report and draft mitigation measures for review. SLRBMI did not identify any known tribal cultural resources (as defined in PRC Section 21074) within the project site. The city discussed proposed mitigation with SLRBMI throughout the consultation process. In December 2019, the city and the SLRBMI tentatively agreed upon the draft recommended mitigation measures including archaeological and Native American monitoring for ground disturbance in accordance with city guidelines.

Through the consultation process with the city, the Rincon Band of Luiseño Indians (Rincon) provided its knowledge of the project site. They stated that they have knowledge of recorded archaeological sites in the general project area and one Luiseno Place name: *Páalimay*, located within 1 mile of the project site. Rincon was provided the cultural report, draft mitigation measures, and geotechnical reports for review. Rincon did not identify any known tribal cultural resources (as defined in PRC Section 21074) within the project site. The city discussed proposed mitigation with Rincon throughout the consultation process.

Rincon requested revisions to the draft mitigation measures during consultation. As a result, the city re-opened consultation with SLRBMI on the proposed revisions. SLRBMI did not concur with all the proposed revisions. The city has included the current draft mitigation measures in the EIR. On January 10, 2020 the City received a letter from Rincon concluding consultation for the Project. Consultation will continue with SLRBMI and shall conclude before the city can take action on the Final EIR.

Analysis

The *Cultural Resources Survey and Assessment Report* includes a prehistoric and historical context of the project site and vicinity. The report also includes a summary of the record search results, and a land use analysis of the project site. This information was analyzed to assess the sensitivity for cultural resources during ground disturbance.

The records search results indicate that one archaeological site (now destroyed) was recorded within the project site and that 41 archaeological sites were present within a 1-mile radius of the project site. The NAHC responded to the SLF request in a letter stating that the SLF search did not reveal the presence of Native American cultural resources within or adjacent to the project site.

The determination that the project site itself has a high sensitivity for archaeological resources is based on many factors which are described in this section. In the course of the city's consultation with the tribes, the city has not obtained evidence or information during consultation, that sacred lands or tribal cultural resources overlap with or occur within the project site. The city concludes that the project site does not contain any previously known tribal cultural resources and that the project site has a high sensitivity for buried archaeological resources that, if encountered, could potentially be considered a tribal cultural resource as defined in PRC Section 21074, 5020.1(k), or 5024.1.

Based on all available information, including the information provided by the tribes during consultations, the city does not have evidence of known tribal cultural resources as defined in PRC Section 21074(a)(1) that are listed or eligible for listing in the California Register, or in a local register of historical resources as defined in PRC Section 5020.1(k), or that are determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to PRC Section 5024.1, within the project site. The tribes provided information to the city during the consultation process under AB 52. This information indicates that sites that are known to be located in the vicinity of the project site.

As described above, no sensitive tribal cultural resources have been found on or near the project site. While there is no identified tribal cultural resource on the project site, there is potential that subsurface archaeological resources may be encountered during ground-disturbing activity. Given the sensitivity of the project site, previously unknown archaeological resources identified during ground-disturbing activities could be determined by the tribes to be a potential tribal cultural resource. If not treated properly, ground-disturbing activities therefore could cause a substantial adverse change in the significance of a known tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and would be considered a **potentially significant impact**.

4.4.5 Level of Significance before Mitigation

Implementation of the proposed project would result in potentially significant impacts, as discussed above under Impacts 4.4-1, 4.4-2, 4.4-3, and 4.4-4.

4.4.6 Environmental Mitigation Measures

The following mitigation measure would reduce the proposed project's potentially significant impacts identified under Impacts 4.4-1, 4.4-2, 4.4-3, and 4.4-4. With respect to Impact 4.4-1, the proposed project could cause a substantial adverse change in the significance of an unknown historical resource pursuant to Section 15064.5. With respect to Impact 4.4-2, the proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. With respect to Impact 4.4-3, the proposed project could disturb human remains, including those interred outside of formal cemeteries. With respect to Impact 4.4-4, the proposed project could cause a significant impact to unknown archaeological resources during ground-disturbing activities which could be determined by the tribes to be a potential tribal

cultural resource. Mitigation Measure CUL-1 would require the implementation of a cultural resources monitoring program during initial grading and other-ground disturbing activities, which would reduce potentially significant impacts to a less-than-significant level.

Mitigation Measure CUL-1: Cultural Resources Monitoring and Recovery Program. Based on the potential for subsurface cultural resources, a cultural resources monitoring program, including participation of Native American groups with interest in the project site, shall be implemented for initial grading and other ground-disturbing activities, including removal of pavement and structural foundations associated with the warehouse within the project site. The following measures are required for the project, consistent with the Tribal, Cultural, and Paleontological Guidelines (City of Carlsbad, 2017a: pp 75-77):

- a. Prior to the commencement of ground-disturbing activities, the project developer shall contract with a qualified professional archaeologist and shall enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with the San Luis Rey Band of Mission Indians, or another Traditionally and Culturally Affiliated Native American tribe (TCA Tribe) for monitoring during ground-disturbing activities. The agreement will contain provisions to address the proper treatment of any tribal cultural resources and/or Luiseño Native American human remains inadvertently discovered during the course of the project. The agreement will outline the roles and powers of the Luiseño Native American monitors and the archaeologist and shall include the provisions below. A copy of said archaeological contract and Tribal Monitoring agreement shall be provided to the City of Carlsbad prior to the issuance of a grading permit.
- b. A Luiseño Native American monitor shall be present during all ground-disturbing activities. Ground-disturbing activities may include, but are not be limited to, archaeological studies, geotechnical investigations, clearing, grubbing, trenching, excavation, preparation for utilities and other infrastructure, and grading activities.
- c. The landowner shall relinquish ownership of all cultural resources collected during ground-disturbing activities and from any previous archaeological studies or excavations on the project site to the contracted TCA Tribe referenced in CR-1(a) for proper treatment and disposition per the Cultural Resources Treatment and Monitoring Agreement for reburial and treated in accordance with the TCA Tribe's cultural and spiritual traditions within an appropriate protected location determined in consultation with the TCA Tribe and protected by open space or easement, etc., where the cultural items will not be disturbed in the future, and shall not be curated, unless ordered to do so by a federal agency or a court of competent jurisdiction. When tribal cultural resources are discovered during the project, if the archaeologist collects such resources, a Luiseño Native American monitor must be present during any testing or cataloging of those resources.
- d. All historical cultural resources uncovered by the archaeologist will be collected and treated following the guidelines and regulations set forth under 36 CFR 79, federal regulations for collection of cultural materials.
- e. The archaeologist and Luiseño Native American monitor shall be present at the project's on-site preconstruction meeting to consult with grading and excavation contractors concerning excavation schedules and safety issues, as well as to consult with the principal archaeologist concerning the proposed archaeologist techniques and/or strategies for the project.
- f. Luiseño Native American monitors and archaeological monitors shall have joint authority to temporarily divert and/or halt construction activities within the immediate vicinity of a find.

If archaeological artifact deposits, cultural features or tribal cultural resources are discovered during construction, all earth-moving activity within 100 feet, or otherwise determined as appropriate and necessary by the archaeologist and Luiseño Native American monitor, around the immediate discovery area must be diverted until the Luiseño Native American monitor and the archaeologist can assess the nature and significance of the find.

- g. If a significant tribal cultural resource(s) and/or unique archaeological resource(s) are discovered during ground-disturbing activities for this project, the San Luis Rey Band of Mission Indians and the Rincon Band of Luiseño Indians shall be notified and consulted with by the city regarding the significance of the resources and the respectful and dignified treatment of those resources. All sacred sites, significant tribal cultural resources and/or unique archaeological resources encountered within the project area shall be avoided and preserved as the preferred mitigation, if feasible. If, however, a data recovery plan is authorized by the city as the lead agency under CEQA, San Luis Rey Band of Mission Indians, Rincon Band of Luiseño Indians, and the contracted TCA Tribe referenced in CR-1(a) shall be notified and consulted regarding the drafting of any such recovery plan. The recovery plan shall be finalized with the TCA Tribe. For significant artifact deposits or cultural features that are part of a data recovery plan, an adequate artifact sample to address research avenues previously identified for sites in the area will be collected using professional archaeological collection methods. If the Qualified Archaeologist collects such resources, the Luiseno Native American monitor must be present during any testing or cataloging of those resources. Moreover, if the Qualified Archaeologist does not collect the cultural resources that are unearthed during the ground-disturbing activities, the Luiseno Native American monitor, may at their discretion, collect said resources and provide them to the contracted TCA Tribe referenced in CR-1(a) for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions.
- h. If suspected Native American human remains are encountered, California Health and Safety Code Section 7050.5(b) states that no further disturbance shall occur until the San Diego County Medical Examiner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b) remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. Suspected Native American remains shall be examined in the field and kept in a secure location at the site. A Luiseño Native American monitor shall be present during the examination of the remains. If the San Diego County Medical Examiner determines the remains to be Native American, the NAHC must be contacted by the Medical Examiner within 24 hours. The NAHC must then immediately notify the "Most Likely Descendant" about the discovery. The Most Likely Descendant shall then make recommendations within 48 hours and engage in consultation concerning treatment of remains as provided in Public Resources Code 5097.98.
- i. In the event that fill material is imported into the project area, the fill shall be clean of tribal cultural resources and documented as such. Commercial sources of fill material are already permitted as appropriate and will be culturally sterile. If fill material is to be utilized and/or exported from areas within the project site, then that fill material shall be analyzed and confirmed by an archeologist and Luiseño Native American monitor that such fill material does not contain tribal cultural resources.
- j. No testing, invasive or non-invasive, shall be permitted on any recovered tribal cultural resources without the written permission of the contracted TCA Tribe referenced in CR-1(a).
- k. Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusions of the monitoring program

shall be submitted by the archaeologist, along with the Luiseño Native American monitor's notes and comments, to the City of Carlsbad for approval. Said report shall be subject to confidentiality as an exception to the Public Records Act and will not be available for public distribution.

This mitigation measure addresses the impacts identified under Impacts 4.4-1, 4.4-2, 4.4-3, and 4.4-4 of the EIR.

4.4.7 Level of Significance after Mitigation

Implementation of Mitigation Measure CUL-1 would avoid and/or substantially lessen the previously identified potentially significant impacts under Impacts 4.4-1, 4.4-2, and 4.4-3 by ensuring that any unanticipated archaeological resources that qualify as historical resources or unique archaeological resources pursuant to CEQA are appropriately identified, documented, evaluated, and treated promptly, so they are not inadvertently damaged or destroyed. With implementation of Mitigation Measure CUL-1, impacts to any unanticipated archaeological resources and human remains that qualify as historical resources, unique archaeological resources, or tribal cultural resources pursuant to CEQA would be less than significant. Thus, impacts to cultural resources would be mitigated to a level that is **less than significant**.

Based on the tribal consultations and the city's analysis of substantial evidence pursuant to CRHR criteria while considering potential significance to the tribes, the city has determined that, while there is not a Tribal Cultural Resource (TCR) present within the project site, there is a reasonable possibility that TCRs may be encountered during the project's ground-disturbing activities. If TCRs are encountered, the proposed project may result in potentially significant impacts on TCRs. Input from the tribal consultation was included within the project mitigation measures. Implementation of Mitigation Measure CUL-1 would ensure that if any unanticipated tribal cultural resources are encountered, the Tribes would be notified and consulted regarding the respectful and dignified treatment of those resources. Pursuant to PRC Section 21083.2(b), avoidance is the preferred method of preservation for archaeological and tribal cultural resources. With implementation of Mitigation Measure CUL-1, the potentially significant impact identified under Impacts 4.4-3 to any unanticipated tribal cultural resources would be **less than significant**.

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4.5 Energy

This section provides an analysis of impacts on energy resources that would occur with construction and operation of the proposed project. This section provides a summary of the proposed project's anticipated energy needs, impacts, and conservation measures. Information found herein, as well as other aspects of the proposed project's energy implications, are discussed in additional detail in Sections 4.2, *Air Quality*, and 4.7, *Greenhouse Gas Emissions* of this EIR.

4.5.1 Existing Conditions

Existing Electricity Sales

San Diego Gas & Electric (SDG&E) is the electricity provider for the city. SDG&E, a Sempra Energy Utility, is a regulated public utility that provides electrical services to approximately 3.6 million people in 25 communities and two counties (San Diego and southern Orange counties) across a 4,100-square-mile service area (SDG&E, 2019a). In 2017, SDG&E's total electricity sales in the city were estimated to be 735 gigawatts per hour (GWh) (City of Carlsbad, 2019).

SDG&E produces and purchases its energy from a mix of conventional and renewable generating sources. **Table 4.5-1, *Electric Power Mix Delivered to Retail Customers in 2018***, depicts the electric power mix delivered to SDG&E retail customers compared to the statewide power mix for 2018, the most recent year in which data is available.

**TABLE 4.5-1
ELECTRIC POWER MIX DELIVERED TO RETAIL CUSTOMERS IN 2018**

Energy Resource	2018 SDG&E	2018 CA Power Mix (for comparison)
Total Sales/Total Usage (GWh)	18,767	285,488
Eligible Renewable^a	43%	31%
Biomass & bio-waste	2%	2%
Geothermal	0%	5%
Small hydroelectric	0%	2%
Solar	20%	11%
Wind	21%	11%
Coal	0%	3%
Large Hydroelectric	0%	11%
Natural Gas	29%	35%
Nuclear	0%	9%
Other	0%	<1%
Unspecified sources of power^b	27%	11%
Total	100%	100%

a The Eligible Renewables category is further delineated into the specific sources: biomass & waste, geothermal, small hydroelectric, solar, and wind

b "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

SOURCES: CEC, 2019.CEC, 2018, SDG&E, 2019b.

SDG&E is required to commit to the use of renewable energy sources for compliance with the Renewables Portfolio Standard (RPS). The RPS requires at least 33% of its energy portfolio to come from renewable sources by 2020. As of 2017, nearly 45% of SDG&E's generating capacity is from renewable energy sources, surpassing the original RPS goal. Senate Bill (SB) 350, Clean Energy and Pollution Reduction Act of 2015. (Chapter 547, Statutes of 2015) increased the state RPS goals to 50% by 2030 and included interim targets of 40% by 2024 and 45% by 2027. SB 350 was codified as Sections 454.51 and 454.52 of the Public Utilities Code. Eligible renewable resources are defined in the RPS to include biodiesel; biomass; hydroelectric and small hydro (30 megawatts [MW] or less); aqueduct hydro power plants; digester gas; fuel cells; geothermal; landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable derived biogas; multi-fuel facilities using renewable fuels; solar photovoltaic (PV); solar thermal electric; wind; and other renewables that may be defined later. SB 100 (Chapter 312, Statutes of 2018) further increases the RPS to 50% by December 31, 2026, and to 60% by December 31, 2030.

SB 100 further increased California's RPS and requires retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44% of retail sales by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, and that the California Air Resources Board (CARB) should plan for 100% eligible renewable energy resources and zero-carbon resources by December 31, 2045.

Existing Natural Gas Supply

Natural gas is used for cooking, space heating, water heating, electricity generation, and as an alternative transportation fuel. SDG&E is responsible for providing natural gas supply to the project site. In 2013, SDG&E's total natural gas sales in the city of Carlsbad were estimated to be 23.6 million therms or 2,400 million kilo-British thermal units (kBtu) (City of Carlsbad, 2015).

Existing Transportation Energy

Transportation energy is calculated from fuels used to power on-road and off-road vehicles. Based on available fuel consumption data from the California Energy Commission (CEC), in 2017, San Diego County consumed a total of 1.38 billion gallons of gasoline and 103 million gallons of diesel fuel (CEC, 2017). In the city of Carlsbad, transportation is the largest contributor to greenhouse gas (GHG) emissions, comprising 39% of total emissions or 273,745 metric tons of carbon dioxide equivalent (MTCO_{2e}, City of Carlsbad, 2015).

Existing Project Site

The project site consists of approximately 9.5 acres of developable land, bisected by Aviara Parkway, creating an East Parcel and a West Parcel, south of Palomar Road. Approximately 7.19 acres located west of Aviara Parkway are currently developed with a 38,000-square-foot warehouse, a 10,000-square-foot loading dock with a 350-foot-long shed, a 50,000-square-foot concrete parking area for trucks, and about 85,000 square feet of gravel roads and parking. The approximately 2.31 acres East Parcel was previously graded but is currently undeveloped.

4.5.2 Regulatory Setting

State

The following state regulations and policies provide an overall context for the consideration of site-specific issues at the project site. It is assumed that state regulations, codes, and laws would be adhered to, both as they apply to development of the proposed project and related project activities.

State of California Integrated Energy Policy

In 2002, the Legislature passed SB 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for Zero Emission Vehicles (ZEV) and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

The CEC has adopted the 2015 Integrated Energy Policy Report, which assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources, protect the environment, ensure reliable, secure, and diverse energy supplies, enhance the state's economy, and protect public health and safety. The 2015 Integrated Energy Policy Report covers a broad range of topics, including energy efficiency, building energy efficiency standards, achieving 50% renewables by 2030, and the California Energy Demand Forecast (CEC, 2016d).

Title 24, Building Standards Code and California Green Building Standards Code

The CEC first adopted the Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations [CCR], Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the State. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods. The California Building Standards Commission (CBSC) adopted Part 11 of the Title 24 Building Energy Efficiency Standards, referred to as the California Green Building Standards (CALGreen) Code.

The purpose of the CALGreen Code is to “improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality.” The CALGreen Code establishes mandatory measures for new residential and nonresidential buildings, which include requirements for energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen

Code was updated in 2016 to include new mandatory measures for residential as well as nonresidential uses. The 2016 measures took effect on January 1, 2017 (California Building Standards Commission, 2010). The most recent update is the 2019 CALGreen Code, which took effect on January 1, 2020. Buildings constructed under the proposed project would be required to comply with the applicable provisions of Title 24 and the CALGreen Code in effect at the time of building permit issuance.

Renewables Portfolio Standards

First established in 2002 under SB 1078, California's RPS requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33% by 2020 and 50% by 2030.

On September 10, 2018, SB 100 further increased California's RPS and requires retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44% of retail sales by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, and that the California Air Resources Board (CARB) should plan for 100% eligible renewable energy resources and zero-carbon resources by December 31, 2045. The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy. The CEC is California's primary energy policy and planning agency, and commits to reducing energy costs, curtailing greenhouse gas emissions, and ensuring a safe, resilient, and reliable supply of energy.

Senate Bill 375

SB 375 was signed into law in 2008 and is intended to provide a means for achieving Assembly Bill (AB) 32 GHG target reduction goals from cars and light trucks through long-range regional growth strategies and transportation plans. SB 375 is directed toward California's 18 Metropolitan Planning Organizations (MPOs). The San Diego Association of Governments (SANDAG) is San Diego County's MPO. Under SB 375, each MPO is required to develop a "Sustainable Communities Strategy," (SCS) a newly required element of the Regional Transportation Plan (RTP). SB 375 does not take over local planning functions, and a SCS does not in any way supersede a General Plan, specific plan, or local zoning ordinance. Additionally, SB 375 does not require any consistency between the SCS and these planning and development regulatory documents. However, the MPOs are required to develop the SCS through integrated land use and transportation planning and demonstrate an ability to attain the proposed reduction targets by 2020 and 2035.

California Air Resources Board

California Assembly Bill 1493 (AB 1493, Pavley)

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO₂) emissions, AB 1493 (commonly referred to as the Pavley regulations) requires CARB to set GHG emission standards for new passenger vehicles, light duty trucks, and other

vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. Phase I of the legislation established standards for model years 2009–2016 and Phase II established standards for model years 2017–2025. Implementation of the regulation generally requires improved corporate average fuel economy (CAFE) standards for vehicles and reduced fuel consumption per mile traveled.

CARB’s Advanced Clean Car Program

The Advanced Clean Cars emissions-control program was approved by CARB in 2012 and is closely associated with the Pavley regulations. The program requires a greater number of ZEV models for years 2015 through 2025 to control smog, soot and GHG emissions. This program includes the Low-Emissions Vehicle regulations to reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles; and the ZEV regulations to require manufactures to produce an increasing number of pure ZEV’s (meaning battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles between 2018 and 2025.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted an Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling in order to reduce public exposure to diesel particulate matter emissions (Title 13 CCR Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles

In addition to limiting exhaust from idling trucks, CARB approved the Truck and Bus Regulation in 2008 to reduce nitrogen oxide (NO_x), respirable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}) emissions from existing diesel vehicles operating in California (13 CCR, Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. The phasing of this regulation has full implementation by 2023.

CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB in 2007 aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation in all equipment for large and medium fleets by 2023 and for small fleets by 2028.

While the goals of these measures are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

Executive Order B-55-18

On September 10, 2018, Governor Brown issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

San Diego Forward: The Regional Plan

San Diego Association of Governments (SANDAG) is the federally designated metropolitan planning organization (MPO) for San Diego County region and is responsible for transportation planning. On October 9, 2015, the SANDAG's Board of Directors adopted San Diego Forward: The Regional Plan. This plan combines the Regional Comprehensive Plan from 2004 with the 2050 RTP and SCS, which was adopted in 2012. The Regional Plan identifies the five following strategies to move the San Diego region toward sustainability:

- Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.
- Protect the environment and help ensure the success of smart growth land use policies by preserving sensitive habitat, open space, cultural resources, and farmland.
- Invest in a transportation network that gives people transportation choices and reduces GHG emissions.
- Address the housing needs of all economic segments of the population.
- Implement the Regional Plan through incentives and collaboration.

While the Regional Plan sets important context to the overall development of within the city, the Regional Plan does not contain specific policies or requirements that apply to the proposed project.

Local

The section below includes a summary of the city's ordinances, regulations, and planning policies related to energy that are applicable to the proposed project. Where provisions are required by law or ordinance (e.g., the Carlsbad Municipal Code) it is presumed that the proposed project would adhere to the requirements. Where policies or guidelines are provided (i.e., they are not specific regulatory requirements) consistency of the project with the policies identified is described in the impact analysis that follows (Section 4.5.4, *Project Impact Analysis*).

City of Carlsbad General Plan

The city's General Plan contains policies and goals that address energy consumption in the city. The following goal and policy in the Sustainability Element is applicable. Consistency of the project with this goal and policy is addressed in Section 4.10, *Land Use and Planning*, specifically in **Table 4.10-2, General Plan Consistency Determination Summary**.

9-G.3 Promote energy efficiency and conservation in the community

9-P.12 Continue pursuit of sustainable energy sources

City of Carlsbad Climate Action Plan

The City Climate Action Plan (CAP) sets a baseline for GHG emissions, forecasts future emissions, and establishes a long term strategy to reduce emissions. The CAP was prepared concurrently with the City's General Plan and includes actions to carry out the General Plan's goals and policies, consistent with the Community Vision articulated during Envision Carlsbad. The CAP is also correlated with the General Plan EIR, with the CAP GHG emissions reduction target synchronized with the EIR. Emissions reduction targets are established through 2035 and are achievable through enforceable measures, and monitoring and reporting processes (Climate Action Plan Checklist Consistency, 2019). These GHG reductions are consistent with the state's goals to reduce GHG emissions to 1990 levels by 2020 and by 80% below 1990 levels by 2050 (City of Carlsbad, 2015a). For individual projects, consistency with the CAP is determined through compliance with CAP-implementing ordinances.

On January 13, 2020, the City Attorney's office released a memorandum (as presented within the January 21, 2020 City Council Agenda materials) detailing that the vehicle miles traveled (VMT) calculation used in the CAP was based on an incorrect input resulting in lower GHG emissions reported in the inventory (City of Carlsbad 2020). The memorandum concluded that the emissions forecasts for 2020 and 2035 were no longer accurate and the City may not meet the GHG targets for those years. Further, it concluded that the CAP was no longer considered a qualified GHG reduction plan under CEQA Guidelines Section 15183.5 and could not be used to tier off for determining significance of individual projects' GHG emissions. However, City ordinances adopted to implement the CAP continue to be in effect and projects would need to comply with all applicable ordinances.

The city is preparing an update to the CAP and it is anticipated that the city will have a qualified CAP prior to the Final EIR on this project. The applicant has prepared a stand-alone GHG analysis for purposes of determining the significance level of the project's GHG emissions as they relate to CEQA. It is anticipated that the new qualified CAP will not require any additional GHG reduction measures for the project, and that the project's GHG analysis will be sufficient to demonstrate consistency with the new CAP. This is because the project's GHG analysis relies on meeting a quantitative metric derived from data anticipated to be used in the updated CAP. In addition, the project would comply with all applicable City ordinances, including those adopted to implement the CAP.

4.5.3 Thresholds and Methodology

Thresholds

A significant impact would occur to energy if the proposed project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Methodology

The potential for impacts associated with the proposed project's energy usage the construction activities and long-term operations of the proposed project was conducted as described below.

Construction

The proposed project would be constructed with overlapping development activities. Construction of the proposed project would occur in phases over approximately 28 months; construction is expected to be complete at the end of 2022. Construction energy consumption would result primarily from transportation fuels (e.g., diesel and gasoline) used for haul trucks, heavy-duty construction equipment, and construction workers traveling to and from the project site. Construction activities can vary substantially from day to day, depending on the specific type of construction activity and the number of workers and vendors traveling to the project site (see Chapter 3, *Project Description*, of this EIR for construction program details). This analysis considers these factors and provides the estimated maximum construction energy consumption for the purposes of evaluating the associated impacts on energy resources.

To forecast energy use during construction, a conservative estimate of construction activities (i.e., maximum daily equipment usage levels) was developed. The energy usage required for construction of the proposed project has been estimated based on the number and type of construction equipment that would be used during construction of the proposed project, the extent that various equipment is used in terms of equipment operating hours or miles driven, and the estimated duration of construction activities. Energy for construction worker commuting trips has been estimated based on the predicted number of workers for the various phases of construction and the estimated VMT based on default trip lengths provided by the California Emissions Estimator Model (CalEEMod).

The construction equipment would likely be diesel-fueled (with the exception of construction worker commute vehicles, which would primarily be gasoline-fueled). For the purposes of this assessment, it is conservatively assumed heavy-duty construction equipment and haul trucks would be diesel-fueled. However, as discussed in Section 4.2, *Air Quality*, of this EIR, per MM-AQ-1, off-road diesel construction equipment greater than 50 horsepower would be required to adhere to Tier 4 engine standards. Nonetheless, assuming heavy-duty construction equipment and haul trucks would be diesel-fueled represents a worst-case scenario intended to represent the maximum potential energy use during construction. The estimated fuel economy for heavy-duty construction equipment is based on fuel consumption factors from the CARB off-road vehicle (OFFROAD) emissions model, which is a state-approved model for estimating emissions from

off-road heavy-duty equipment. The estimated fuel economy for haul trucks and worker commute vehicles is based on fuel consumption factors from the CARB on-road vehicle emissions model (EMFAC), which is a state-approved model for estimating emissions of on-road vehicles and trucks. Both OFFROAD and EMFAC are incorporated into the CalEEMod, which is a state-approved emissions model used for the proposed project's air quality and GHG emissions assessment. Therefore, this energy assessment is consistent with the modeling approach used for other environmental analyses in the EIR and consistent with general CEQA standards.

Operation

Operation of the proposed project would require energy in the form of electricity and natural gas for building heating, cooling, cooking, lighting, water demand and wastewater treatment, consumer electronics, and other energy needs, and transportation-fuels, primarily gasoline, for on-road vehicles traveling to and from the project site.

The energy usage required for proposed project operations and routine and incidental maintenance activities is estimated based on the anticipated increase in energy demand from the new buildings. The energy usage takes into account compliance with building energy standards pursuant to the Title 24 Building Standards Code and CALGreen Code. Transportation energy is calculated from the trip generation rate of six trips per dwelling unit per day in the Transportation Impact Analysis (TIA) (Michael Baker International, 2019; Found in Appendix J of this EIR). VMT is estimated based on default trip lengths as estimated by CalEEMod. Energy usage from water demand (e.g., electricity used to supply, convey, treat, and distribute) is estimated based on the increased water demand from the new residential buildings. The assessment also includes a discussion of the proposed project's compliance with relevant energy-related regulatory plans and measures, as well as beneficial impacts from installation of a solar PV system. These measures are also discussed in Section 4.2, *Air Quality*, and Section 4.7, *Greenhouse Gas Emissions*, of this EIR.

Building energy use factors, water demand factors, and vehicle trip lengths from CalEEMod are used to estimate building energy use and VMT. The estimated fuel economy for vehicles is based on fuel consumption factors from the CARB EMFAC emissions model. As discussed above, EMFAC is incorporated into CalEEMod, which is a state-approved emissions model used for the proposed project's air quality and GHG emissions assessment. Therefore, this energy assessment is consistent with the modeling approach used for other environmental analyses in the EIR and consistent with general CEQA standards. The proposed project's estimated energy demands were then analyzed relative to SDG&E's existing and planned energy supplies in the project buildout year to determine if SDG&E would be able to meet the proposed project's energy demands.

Per the GHG Emissions Calculations (Appendix F.2 of this EIR), the proposed project would require 501 megawatt hours (MWh) of electricity and 2.444 million kBtu of natural gas per year. In order to provide a more conservative analysis, the energy demands of the proposed project are assumed to be all net new demand.

4.5.4 Project Impact Analysis

Impact 4.5-1: Would the proposed project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction and Demolition

Construction of the proposed project would result in energy consumption from the use of heavy-duty construction equipment, on-road trucks, and construction workers commuting to and from the project site.

Electricity would be used during construction to provide temporary power for lighting and electronic equipment (e.g., computers, etc.) and to power certain construction equipment (e.g., hand tools or other electric equipment) and would generally not result in a substantial increase in on-site electricity use. Electricity use during construction would be variable depending on lighting needs and the use of electric-powered equipment and would be temporary for the duration of construction activities. Welders and air compressors would be electric. It is expected that construction electricity use would generally be considered as temporary and negligible over the long-term. Heavy-duty construction equipment and haul trucks do not typically use natural gas. Thus, natural gas is not expected to be consumed in any substantial quantities during construction of the proposed project.

For the purposes of this analysis, heavy-duty construction equipment is assumed to use diesel fuel, which is the most conservative scenario for maximum potential energy use during construction.¹ The estimated fuel usage for off-road equipment is based on the number and type of equipment that would be used during construction activities, hour usage estimates, the total duration of construction activities, and hourly equipment fuel consumption factors from the OFFROAD model. On-road equipment would include trucks to haul material to and from the project site and vendor trucks to deliver supplies necessary for project construction. The estimated fuel usage for on-road trucks is based on the engineering estimates that form the basis of the construction-related impact analyses and fuel consumption information from the CARB EMFAC model. The number of construction workers that would be required would vary based on the phase of construction and activity taking place. The transportation fuel required by construction workers to travel to and from the project site would depend on the total number of worker trips estimated for the duration of construction activity. The estimated fuel usage for construction worker commutes is based on the estimated number of workers for different phases of construction, the average distance that the workers would travel on local and regional roadways from CalEEMod, and emissions factors in the EMFAC model.

A summary of the annual fuel consumption during construction of the proposed project is provided in **Table 4.5-2, Project Construction Fuel Usage**. As shown in Table 4.5-2, on- and off-road vehicles would consume an estimated annual average of 26,735 gallons of diesel fuel and 33,123 gallons of gasoline fuel for each year of construction of the proposed project.

¹ Note that air quality mitigation measures contained within this Draft EIR would require construction equipment to adhere to Tier 4 engine standards, which would result in an improvement to results of this conservative analysis.

A complete listing of the equipment by phase, emission factors, and calculation parameters used in this analysis is included within the emissions calculation worksheets that are provided in Appendix F.2 of this EIR.

**TABLE 4.5-1
PROJECT CONSTRUCTION FUEL USAGE**

Source	Gallons of Diesel Fuel Per Year	Gallons of Gasoline Fuel Per Year
Construction:		
Heavy-Duty Construction Equipment	16,162	-
Haul Trucks	1,623	-
Vendor Trucks	8,949	-
Worker Trips	-	33,123
Annual Average (approximately up to a 2.5-year construction duration)	26,735	33,123

SOURCE: ESA, 2019.

For comparison purposes, the proposed project’s construction energy demand from transportation fuel is compared to the San Diego County transportation fuel sales. As shown in **Table 4.5-3, Comparison of Project Construction and County Fuel Usage**, the proposed project would represent a very small fraction of the County’s total fuel consumption. Construction of the proposed project would result in short-term and temporary energy demand lasting 2 years.

**TABLE 4.5-3
COMPARISON OF PROJECT CONSTRUCTION AND COUNTY FUEL USAGE**

Source	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
San Diego County (in 2017) ^a	201,960,784	1,377,000,000
Annual Project Construction	26,735	33,123
Percent of County	0.013%	0.0024%

^a California Energy Commission, California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2017. Available at: https://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed May 2019. Diesel is adjusted to account for retail (51%) and non-retail (49%) diesel sales.

SOURCE: ESA, 2019.

Construction of the proposed project would require the consumption of energy for necessary on-site activities and to transport materials, soil, and debris to and from the project site. The amount of energy used would not represent a substantial fraction of the available energy supply in terms of equipment and transportation fuels. Furthermore, compliance with the previously discussed anti-idling and emissions regulations would result in a more efficient use of construction-related energy and the minimization or elimination of wasteful and unnecessary consumption of energy. Therefore, construction of the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy and would not increase the need for new energy infrastructure. For these reasons, construction energy impacts would be **less than significant**.

Operation

Operation of the proposed project would require the consumption of energy for electricity, natural gas, and transportation energy. Each source of operational energy consumption is described below with a summary of the total impact to regional energy supply at the end of the analysis.

Electricity

Operation of the proposed project would increase the demand for electricity resources including the electricity used to supply, convey, distribute, and treat water resources. The proposed project’s estimated operational electricity demand, including from water demand, is provided in **Table 4.5-4, Project Operational Energy Usage**. As shown in Table 4.5-4, the project would result in an estimated consumption of electricity totaling approximately 501,215 kWh per year.

**TABLE 4.5-4
 PROJECT OPERATIONAL ENERGY USAGE**

Source	Natural Gas Per Year (million kBtu)	Electricity Per Year (million kWh)	Gallons of Diesel Fuel Per Year	Gallons of Gasoline Fuel Per Year
Operations:				
Proposed Project ^a				
Building Electricity and Transportation	2.44	0.16	18,640	179,276
Water Electricity ^b	—	0.343	—	—
Total	2.44	0.501	18,640	179,276

NOTES:

^a Project gasoline and diesel are calculated based on the estimated VMT and fuel consumption factors from the CARB EMFAC model. Electricity and natural gas are calculated in Section 4.7, *Greenhouse Gas Emissions*, of this EIR using CalEEMod (includes water-related electricity for conveyance and treatment).

^b Electricity for water supply, treatment, distribution, and wastewater treatment.

SOURCE: ESA, 2019.

The proposed project would minimize energy demand through compliance with the applicable provisions of Title 24 and the CALGreen Code in effect at the time of building permit issuance. Therefore, due to the development of on-site solar generation and a surplus electrical supply associated with the proposed project as well as the incorporation of Title 24 and the CALGreen Code features, operation of the project would not result in the wasteful, inefficient, and unnecessary consumption of electricity.

For the 2017 fiscal year, SDG&E had an annual electric sale to customers of approximately 14,682 million kWh (SDG&E, 2018). The proposed project’s electricity demand represents approximately 0.0034 % of the SDG&E network sales for 2017. In addition, the projected SDG&E demand in 2023) would be approximately 14,662 million kWh per year which is a slight decrease from 2017 (SDG&E, 2018). In 2023, the proposed project would represent approximately the same, 0.0034%, of load forecasted compared to the 2017 demand. Calculations are found in Appendix F.2 of this EIR.

Natural Gas

The proposed project would increase the demand for natural gas resources. The proposed project's estimated operational natural gas demand, as shown in Table 4.5-4, *Project Operational Energy Usage*, is projected to generate an annual demand for natural gas totaling approximately 2.44 million kBtu.

As described above, the proposed project would minimize natural gas demand through compliance with the applicable provisions of Title 24 and the CALGreen Code in effect at the time of building permit issuance. Therefore, with the incorporation of these features, operation of the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of natural gas.

According to the 2018 California Gas Report, based on the proposed project's estimated natural gas consumption as shown in **Table 4.5-5, *Project Energy Usage and State and Regional Energy Supply***, the proposed project would account for approximately 0.002% of SDG&E's 2023 sales. Gas throughput in the SDG&E service area is expected to slightly decline from 2019 to 2023, ranging from 287 million cubic feet (MMCF)/day to 302 MMCF/day due to less regional natural gas demand from improved building energy efficiency standards and the State's overall move towards more renewable energy per the Renewables Portfolio Standards (California Gas and Electrical Utilities, 2018).

Transportation Energy

The proposed project's estimated operational transportation fuel demand is provided in **Table 4.5-5, *Project Energy Usage and State and Regional Energy Supply***, below. Transportation and trip estimates were based off of the Transportation Impact Analysis (MBI, 2019). The proposed project would be in compliance with the city's General Plan Mobility Element and would use a transportation demand management (TDM) plan to reduce single occupant vehicle trips as described in the Project Description, Section 3.5.6, *Circulation and Utility Improvements* and Appendix J *Transportation Impact Analysis*. Key TDM strategies include: car sharing, transit incentives, telework, and bike storage facilities (MBI, 2019).

Conclusion Regarding Operation Energy Consumption

Operation of the proposed project would result in energy usage from building energy demand and transportation-related energy associated with vehicles traveling to and from the project site. The amount of energy used would not represent a substantial fraction of the available energy supply in terms of building energy or transportation fuels and would not increase the need for new energy infrastructure. The proposed project is consistent with Title 24 standards and CalGreen Code as well as the city's General Plan. Therefore, with implementation of Title 24 standards and CalGreen Code through design of the proposed project, implementation of the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of building energy or transportation energy and the project would not increase the need for new energy infrastructure or preempt opportunities for future energy conservation. Therefore, operational energy impacts would be **less than significant**.

**TABLE 4.5-5
PROJECT ENERGY USAGE AND STATE AND REGIONAL ENERGY SUPPLY**

Source	Natural Gas Per Year (million kBtu)	Electricity Per Year (million kWh)	Diesel Fuel Per Year (gallons)	Gasoline Fuel Per Year (gallons)
SDG&E (2023) ^a / SDG&E (2023) ^b	107,583	14,662	—	—
San Diego County (Transportation Sector) (2017) ^c	—	—	201,960,784	1,377,000,000
Operations:				
Building Electricity and Transportation	2.44	0.16	18,640	179,276
Water Electricity ^f	—	0.343	—	—
Total	2.44	0.501	18,640	179,276
Percent of SDG&E	0.002%	0.0034%		
Percent of San Diego County (Transportation Sector)			0.009%	0.013%

NOTES:

^a California Gas and Electric Utilities. 2018. California Gas Report, 2018. Available at: https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf. Accessed May 2019. Converted from 287 million cubic feet per day and a conversion factor of 1,027 Btu per cubic foot.

^b SDG&E, 2018.

^c CEC, 2017. Diesel is adjusted to account for retail (51%) and non-retail (49%) diesel sales.

^e Project gasoline and diesel are calculated based on the estimated VMT and fuel consumption factors from the CARB EMFAC model. Electricity and natural gas are calculated in Section 4.7, *Greenhouse Gas Emissions*, using CalEEMod (includes water-related electricity for conveyance and treatment).

^f Electricity for water supply, treatment, distribution, and wastewater treatment.

SOURCE: ESA, 2019.

Impact 4.5-2: Would the proposed project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The proposed project would be designed in a manner that is consistent with relevant energy conservation plans designed to encourage development that results in the efficient use of energy resources. The proposed project would comply with CALGreen and 2019 Title 24 requirements to reduce energy consumption by implementing energy efficient building designs, improving energy and water efficiency in buildings, adding electric vehicle charging for 10% of total parking spaces, decreasing water use (20% reduction per CALGreen), and installing energy-efficient appliances and equipment. The proposed project would install a 386 kilowatts of direct current (kWdc) PV system, which would generate 976,857 kWh/year, to supply residential electricity through solar panels. These sustainability and efficiency features would be assessed during building commissioning, which would verify that all building systems are functioning as designed. In addition, as a condition of building permit approval, the project applicant would demonstrate achievement of water and energy efficiencies through the Title 24 Compliance Reports provided to the City. The proposed project would be consistent with the San Diego Forward: The Regional Plan, in particular the regional energy strategy goals for energy efficiency in new construction and renewable energy. The proposed project would also be consistent with

the City of Carlsbad General Plan to decrease automobile use by implementing TDM measures. This would result in a reduction of 10% to 15% in vehicle miles traveled (MBI, 2019). and.

Overall, the proposed project's features would support and promote the use of renewable energy and energy efficiency and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the impacts of the proposed project would be **less than significant**.

4.5.5 Level of Significance before Mitigation

Implementation of the proposed project would not result in significant energy resources impacts; therefore, no mitigation measures are proposed.

4.5.6 Environmental Mitigation Measures

No mitigation measures are proposed, as no significant energy resources impacts have been identified.

4.5.7 Level of Significance after Mitigation

No significant impact to energy resources has been identified.

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4.6 Geology and Soils

This section provides an evaluation of the proposed project's impacts related to geology and soils within the project site and vicinity. Also included is an evaluation of the potential for the proposed project to adversely affect paleontological resources. Information contained in this section is summarized from geotechnical reports that were prepared for the project site (GeoSoils, Inc., 2018a, 2018b, and 2019) and the Paleontological Resource Assessment (Department of PaleoServices SDNHM, 2019) (See Appendices E.1 through E.6).

Additional background information on geotechnical and seismic hazards was obtained from various sources including the United States Geological Survey (USGS), California Geological Survey (CGS),¹ the United States Department of Conservation, and Southern California Earthquake Data Center.

4.6.1 Existing Conditions

Regional Geology

The project site is located within the Peninsular Ranges geomorphic province of southern California. This province is characterized by elongated mountain ranges and valleys that trend in a northwesterly direction and align with the tectonic plate boundary of the Pacific Ocean and the North American Plate (Norris and Webb, 1990). The Peninsular Ranges province extends from the base of the east-west aligned Santa Monica-San Gabriel Mountains and continues south into Baja California, Mexico. The mountain ranges within the province are generally underlain by basement bedrock units that include altered sedimentary rocks, altered volcanic rocks, and granitic intrusive rocks. Along the coastal plain, basement rocks of the Jurassic- to Cretaceous-age Santiago Peak Volcanics and the Cretaceous-age Peninsular Ranges Batholith are nonconformably overlain by a "layer cake" sequence of sedimentary strata of late Cretaceous, Eocene, Oligocene, Miocene, Pliocene, and/or Pleistocene age (Givens and Kennedy, 1979; Hanna, 1926; Kennedy, 1975; Kennedy and Moore, 1971; Kennedy and Peterson, 1975; Peterson and Kennedy, 1974; Walsh and Deméré, 1991). The San Diego County region was originally a broad area of sedimentary rocks that were subjected to tectonic activity and metamorphism that included uplift of areas. The uplifted areas were then eroded away and deposited along the sea margins. Regional geologic mapping shows the project site and the surrounding area as being mantled by late Holocene (geologic time period from current to 11,700 years ago) unconsolidated alluvial flood plain deposits (GeoSoils, Inc., 2019). Middle Eocene-age sedimentary bedrock, belonging to the Santiago Formation, underlies the alluvial deposits.

The middle Eocene Santiago Formation records a series of nearshore marine, estuarine, and fluvial paleoenvironments deposited in, or adjacent to, a large depositional basin (the San Diego Embayment) that spanned a relatively short distance from east to west and was actively accumulating sediments over a period of approximately 15 million years (50 to 34 million years ago; Ma). Deposition was abruptly interrupted around the Eocene-Oligocene boundary coincident with a global drop in sea level resulting from initiation of continental glaciation in Antarctica.

¹ The CGS was formerly called the California Division of Mines and Geology (CDMG).

Deposition of strata in the region resumed by at least the end of the Oligocene (~28 Ma) and continued through the Miocene and into the Pliocene (~4 Ma), although the majority of this later record was subsequently removed by local erosion. During the Pleistocene, dramatic changes in global sea level, combined with regional uplift, created the flat mesas and deep valleys characteristic of the coastal San Diego region today. During periods of high sea level, marine transgressions (coastal flooding) led to wave-erosion of planar marine abrasion platforms (ancient seafloors) into the soft Eocene rocks, and subsequent deposition of shallow marine and nonmarine sediments by prograding deltas from the east. During periods of low sea level, marine regressions resulted in the carving out of deep river valleys by the prehistoric rivers and streams of San Diego County. A final marine transgression at the beginning of the Holocene followed by stabilization of sea level during the late Holocene led to the formation of the modern alluvial flood plains observed in the central portions of the river valleys in the vicinity of the project site.

Site Geology

The natural topography of the project site previously was altered with development and the construction of Aviara Parkway and Laurel Tree Lane. Both Aviara Parkway and the portion of Laurel Tree Lane closest to Aviara Parkway are elevated above the two parcels that comprise the project site and relatively steep slopes are adjacent to the roadways, as shown in **Figure 4.6-1, *Slope Analysis Map***. The West Parcel is also at the base of an incline that flanks the southwest and southeast corner of the project site. Across the entire project site, approximately 7.33 acres have a maximum slope of 15%, 0.52 acres has a slope of 15% to 25%, 0.57 acres have a slope of 25% to 40%, and 0.65 acres has a slope of greater than 40%.

Groundwater was encountered during the preliminary investigation in only one boring on the East Parcel at a depth of about 21.5 feet below ground surface (bgs). As a result, it was determined that groundwater is at a higher elevation than regional conditions due to relatively low permeability subsurface materials that prevent or greatly slow the downward infiltration of water. In areas of perched groundwater like this, conditions can vary across short distances with changes in permeability of the underlying materials.

Based on the findings of the geotechnical borings that were drilled on the project site, the materials that underlie the site include the following (GeoSoils, Inc., 2019):

Artificial Fill

Undocumented fill was observed across much of the site that ranged in thickness from approximately 3 to 7 feet on the West Parcel and about 17 to 20 feet on the East Parcel.

Artificial Fill Roadway

Artificial roadway fill materials were not encountered in the borings but were noted in the geotechnical report as being associated with the embankments ascending to Aviara Parkway on both parcels, and Laurel Tree Lane on the East Parcel. This roadway fill was estimated at 23 feet thick or more for Aviara Parkway and approximately 16 feet thick or more for Laurel Tree Lane.



Aviara Apartments Project
Figure 4.6-1
 Slope Analysis Map

SOURCE: REC Consulting In., 2017



Quaternary Alluvium

Unconsolidated alluvial flood plain deposits were encountered beneath the fill on the East Parcel at thicknesses of 9 to 13 feet. On the West Parcel, the alluvium ranged up to about 3 feet thick. The alluvium consisted of dark reddish-brown, fine-grained sandy clay, with traces of pebbles. These deposits were observed to be damp and loose enough to be susceptible to compression. The deposits are primarily Holocene in age (less than about 11,000 years old), and were deposits in modern streambeds. Overall, the alluvium is inclined in a southwesterly direction that mimics the natural topography (GeoSoils, Inc., 2019).

Tertiary Santiago Formation

Santiago Formation is exposed in a hillslope in the southwestern corner of the project site (as mapped by Kennedy and Tan, 2007, and confirmed in the geotechnical investigation report [GeoSoils, Inc., 2019]), and also underlies artificial fill and localized young alluvial deposits site-wide at depths of approximately 3 to 17 feet below existing grade. The formation is middle Eocene-age (i.e., 56 to 33.9 million years ago) and consists of weathered and unweathered silty sandstone and claystone described as moist and dense/medium stiff to stiff. The unweathered silty sandstone was generally encountered up to 6 ½ feet below the weathered portion.

The Santiago Formation was named by Woodring and Popenoe (1945) for deposits exposed in the foothills of the Santa Ana Mountains in Orange County. These deposits generally consist of a basal conglomerate layer overlain by a gray to buff, micaceous, feldspathic sandstone with siltstone interbeds, and massive buff to yellow sandstone, and includes both marine and nonmarine strata. According to the geotechnical report, the Santiago Formation deposits observed at the site consisted of varying shades of gray to brown silty sandstone and brown/gray claystone (GeoSoils, Inc., 2019).

Landslides and Slope Failures

Mass wasting (i.e., landslides, debris flows, mudflows, etc.) is the downward movement of earth materials when the forces of gravity exceed the forces resisting slope movement, usually influenced by ground or surface water. Mass wasting can occur as a result of static gravitational or dynamic forces (i.e., earthquake-induced). Landslides may occur on slopes of 15% or less; however, the probability is greater on steeper slopes, especially those that exhibit old landslide features such as scarps, slanted vegetation, and transverse ridges. Landslide-susceptible areas are characterized by steep slopes and downslope creep of surface materials. Debris flows consist of a loose mass of rocks and other granular material that, if saturated and present on a steep slope, can move downslope. The rate of rock and soil movement can vary from a slow creep over many years to a sudden mass movement. Landslides occur throughout the state of California, but the density of incidents increases in zones of active faulting or where other adverse geologic structures are present.

Slope stability can depend on a number of complex variables. The geology, structure, and amount of groundwater in the slope affect slope failure potential, as do external processes (i.e., climate, topography, slope geometry, and human activity). The factors that contribute to slope movements include those that decrease the resistance in the slope materials and those that increase the stresses on the slope. Slope failure under static forces occurs when those forces initiating failure overcome the forces resisting slope movement. For example, a soil slope may be considered stable until the earth materials therein become saturated with water (e.g., during heavy rains or due to a broken pipe or sewer line). Under saturated conditions, the water pressure in the individual pores within the soil increases, reducing the strength of the soil. Cutting into the slope and removing the lower portion, or slope toe, can reduce or eliminate the slope support, thereby increasing stress on the slope.

Earthquake motions can induce significant horizontal and vertical dynamic stresses in slopes that can trigger failure. Earthquake-induced landslides can occur in areas with steep slopes that are susceptible to strong ground motion during an earthquake.

According to an analysis of existing slope inclines, the project site includes areas of slope inclines that are as much as 40%, as seen in Figure 4.6-1, *Slope Analysis Map*. According to the preliminary geotechnical report, no indications of past slope instability were observed at the site, although the city indicates that the hills to the south of the West Parcel have a moderate to high mud flow potential (GeoSoils, Inc., 2019). This potential on the West Parcel is alleviated by project debris impact walls in areas potentially susceptible to mudflows emanating from up-slope swales. In addition, the on-site soils are considered highly erosive, which can be a factor in slope stability as it may lead to undermining slope structure.

Fault Rupture

Fault rupture is defined as the displacement that occurs along the surface of a fault during an earthquake. Based on criteria established by CGS, faults are classified as either Holocene-active, pre-Holocene, or age-undetermined (CGS, 2018). Faults are considered active when they have shown evidence of movement within the past 11,700 years (i.e., Holocene epoch). Pre-Holocene faults are those whose recency of past movement is older than 11,700 years. An age-undetermined fault is one whose age of most recent movement is unknown or is unconstrained by dating methods, or by limitations in stratigraphic resolution.

The Alquist-Priolo Earthquake Fault Zoning Act (formerly known as the Alquist-Priolo Special Studies Zones Act) established state policy to identify active faults and determine a boundary zone on either side of a known fault trace, called the Alquist-Priolo Earthquake Fault Zone. The delineated width of an Alquist-Priolo Earthquake Fault Zone is based on the location precision, complexity, or regional significance of the fault and can be between 200 and 500 feet or more in width on either side of the fault trace. If a site lies within a designated Alquist-Priolo Earthquake Fault Zone, a geologic fault rupture investigation must be performed to demonstrate that a proposed building site is not threatened by surface displacement from the fault, before development permits may be issued.

There are no known Holocene-active faults crossing the project site, and thus the site has low potential for the proposed project to be adversely affected by surface rupture from fault movement (GeoSoils, Inc., 2019). The closest active fault to the site is the Rose Canyon fault located approximately 5.3 miles to the west. The project site is not located within or near a designated Alquist-Priolo Earthquake Fault Zone.

Ground Shaking

The project site is located within the very seismically active Southern California region, and within 50 miles of many Holocene-active faults that are capable of producing very strong ground shaking.

The effects of seismic shaking are dependent on the distance between the site and causative fault and the on-site geology. Based on the latest forecasting by the USGS, the Southern California region is expected to have a high likelihood of experiencing one or more magnitude 6.7 events over the following 30 years (USGS, 2015). The secondary effects of seismic shaking potentially include soil liquefaction, lateral spreading, and landslides.

As noted above, the Rose Canyon fault is the closest to the project site, but there are also other active faults in the region including the Newport-Inglewood Fault Zone, the Elsinore Fault Zone, and the Coronado Bank Fault Zone. The Rose Canyon fault is considered capable of a maximum magnitude 7.2 earthquake.

Subsidence and Settlement

Subsidence is characterized as a sinking of ground surface relative to surrounding areas, and can occur when underlying soils fail to support new loadings such as structures or placement of additional fill materials. Subsidence in areas of thick alluvial deposits can also be associated with regional fluid (groundwater and/or petroleum) withdrawal, peat oxidation, or hydrocompaction. Subsidence can result in the development of ground cracks and damage to subsurface vaults, pipelines and other improvements. Regional subsidence typically occurs along bounding faults, and may also be due to tectonic activity.

Settlement can occur from rapid to slow consolidation of compressible soils, shrinkage of expansive soil, and liquefaction (discussed below). Settlement occurs when susceptible soils are loaded by structures, fills, and/or earthquake-induced ground motions, and deform in response. Consolidation settlement occurs in saturated soils from the volume change caused by squeezing out water from the pore spaces. Consolidation occurs over short to long periods of time and is followed by secondary compression, which is a continued change in void ratio under the continued application of the load. Soils tend to settle at different rates and by varying amounts depending on the soil strength properties, the load weight or changes in properties over an area, which is referred to as differential settlement.

According to the preliminary geotechnical report, the potential for subsidence was evaluated during the assessment of the site and considered to be a negligible hazard that would be addressed through typical site development preparations (GeoSoils, Inc., 2019).

Liquefaction

Liquefaction is a form of earthquake-induced ground failure that occurs when relatively shallow, poorly consolidated, granular, water-saturated soils behave similarly to a liquid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions exist:

(1) shallow (50 feet bgs or less) groundwater, (2) low-density non-cohesive (granular) soils, and (3) high-intensity ground motion. Liquefaction is typified by a buildup of pore-water pressure in the affected soil layer to a point where a total loss of inherent shear strength occurs, thus causing the soil to behave as a liquid. Saturated, loose to medium dense, near surface non-cohesive soils and sometimes cohesive soils exhibit the highest liquefaction potential. Liquefaction usually results in horizontal and vertical movement of soils from lateral spreading of liquefied materials and post-earthquake settlement of liquefied materials. The effects of liquefaction on level ground include potential seismic settlement, sand boils, ground oscillation ground cracks, and bearing capacity failures below structures.

According to the preliminary geotechnical report, the project site is not located within an area identified as having a high potential for liquefaction. The CGS documents historic-high groundwater levels in the area as being greater than 50 feet bgs, and the regional groundwater was not encountered in the borings carried out during the site-specific investigation. However, perched groundwater was encountered in one boring located on the East Parcel at a depth of 21.5 feet bgs and reportedly has been as high as 10 feet bgs on the northern margin of the property (GeoSoils, Inc., 2019). The fine-grained nature of the Santiago Formation is not prone to liquefaction. Therefore, the site has a low susceptibility for liquefaction and associated ground deformation.

Seismically Induced Settlement

Settlement of the ground surface can be accelerated and accentuated by earthquake-induced ground motions. During an earthquake, settlement can occur as a result of the relatively rapid compaction and settling of subsurface materials (particularly loose, uncompacted, and variable sandy sediments above the water table) due to vibrations and the rearrangement of soil particles during prolonged ground shaking. Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different amounts). Areas underlain by inadequately prepared artificial fill can be susceptible to this type of settlement.

According to the findings of the preliminary geotechnical report for the project site, the potential for seismically induced settlement is considered low (GeoSoils, Inc., 2019).

Soils and Soil Stability

Compressible or Collapsible Soils

Compression and collapse are considered to have a greater potential in soils with high porosities, low densities such as windblown silt deposits that are often found in more arid climates. These deposits, known as loess, do not occur on-site, but are described herein as an example of compressible/collapsible soil. Loess deposits are characterized by relatively low density and cohesion, and appreciable strength and stiffness in the dry state, but are susceptible to significant

deformations as a result of wetting. Typical collapsible soils are geologically young, low in plasticity and density, and high in porosity.

Based on the geotechnical borings completed at the project site, the underlying subsurface soil does include undocumented artificial fill and young alluvium, but the site would not be considered susceptible to significant collapse, provided the recommendations in the geotechnical report are incorporated into development practices which would include removal, placement of engineered fill, and recompaction of any unsuitable soils.

Expansive Soils

Expansive soils include clay minerals characterized by their ability to undergo significant volume change (shrink or swell) due to variation in moisture content. Sandy soils are generally not expansive, while clayey soils generally are expansive. Changes in soil moisture content can result from rainfall, irrigation, pipeline leakage, perched groundwater, drought, or other factors. Volumetric change of expansive soil may cause excessive cracking and heaving of structures with shallow foundations, concrete slabs-on-grade, or pavements supported on these materials.

According to the preliminary geotechnical report, the soil samples collected from the site have a low to moderate potential for expansion (GeoSoils, Inc., 2019).

Corrosive Soils

Soil corrosion is a geologic hazard that affects buried metals and concrete materials that are in direct contact with soil or bedrock, containing water-soluble chlorides and sulfates. Depending on the chemical constituents of the soil or bedrock, or groundwater, electrochemical corrosion processes can degrade the structural integrity of the buried metal or concrete. Soil corrosion is a complex phenomenon, with a multitude of variables involved. Pitting corrosion and stress-corrosion cracking are a result of soil corrosion, which can eventually lead to substantive damage.

Corrosivity tests conducted as part of the geotechnical investigation for the project site indicated that the on-site soils are slightly to moderately acidic, which could be severely corrosive to exposed, buried metals when saturated (GeoSoils, Inc., 2019). However, the potential for sulfate attack on concrete was considered negligible (GeoSoils, Inc., 2019).

Soil Erosion

Erosion is discussed in more detail in Section 4.8, *Hydrology and Water Quality*.

Erosion is the wearing-away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind and groundwater. Excessive soil erosion can eventually lead to damage of building foundations and roadways. In general, areas that are most susceptible to erosion are those that would be exposed during the construction phase when earthwork activities disturb soils and require stockpiling. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, or landscaping, however changes in drainage patterns can also cause areas to be susceptible to the effects of erosion, if not managed appropriately. See Section 4.8, *Hydrology and Water Quality*, for further discussion of drainage control at the site.

Paleontological Setting

The paleontological setting and analysis is based on the Paleontological Resource Assessment (Department of PaleoServices SDNHM, 2019). Paleontological resources are the fossilized remains or impressions of plants and animals, including vertebrates (animals with backbones; mammals, birds, fish, etc.), invertebrates (animals without backbones; starfish, clams, coral, etc.), and microscopic plants and animals (microfossils). They are valuable, non-renewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived. Fossils can be used to determine the relative ages of the depositional layers in which they occur and of the geologic events that created those deposits. The age, abundance, and distribution of fossils depend on the geologic formation in which they occur and the topography of the area in which they are exposed. The geologic environments within which the plants or animals became fossilized usually were quite different from the present environments in which the geologic formations now exist.

The project site is located in the coastal plain of San Diego County, within the peninsular Ranges Geomorphic Province of California. While sediments dating back to the Cretaceous (66 Ma) are preserved in the province, continuous sedimentation began in the middle Eocene (around 50 to 34 Ma). Middle Eocene Santiago Formation includes a series of nearshore marine, estuarine, and fluvial deposits. Deposition was abruptly interrupted around the Eocene-Oligocene boundary coincident with a global drop in sea level resulting from continental glaciation in Antarctica. Deposition in the region resumed by at least the end of the Oligocene (~28 Ma) and continued through the Miocene and into the Pliocene (~4 Ma), although the majority of this later record was subsequently removed by local erosion. During the Pleistocene, dramatic changes in global sea level, combined with regional uplift, created the flat mesas and deep valleys characteristic of the coastal San Diego region today. During periods of high sea level, marine transgressions (coastal flooding) led to wave-erosion of planar marine abrasion platforms (ancient seafloors) into the soft Eocene rocks, and subsequent deposition of shallow marine and non-marine sediments. During periods of low sea level, marine regressions resulted in the carving out of deep river valleys by the prehistoric rivers and streams of San Diego County. A final marine transgression at the beginning of the Holocene followed by stabilization of sea level during the late Holocene led to the formation of the modern alluvial flood plains observed in the central portions of the river valleys in the vicinity of the project site.

As previously noted in the description of the site's geology, the site consists of undocumented fill (including roadway fills), unconsolidated alluvial flood plain deposits, and Tertiary Santiago Formation (GeoSoils, Inc., 2019). The Santiago Formation is exposed in a hillslope in the southwestern corner of the project site, as mapped by Kennedy and Tan (2007), and confirmed in the geotechnical investigation report (GeoSoils, Inc., 2019), and also underlies artificial fill and localized young alluvial deposits site-wide at depths of approximately 3 to 17 feet below existing grade.

Regarding the potential for paleontological significance, because artificial fill has been previously disturbed and may have been imported to its current location, any fossils these deposits may contain have lost their original stratigraphic and geographic context, and are thus not considered to be scientifically significant. As well, no fossils are currently known from young alluvial

deposits in the vicinity of the project site. The lack of recorded fossil collection localities is primarily due to the relatively young geologic age of these deposits (less than about 11,000 years old).

Three informal members of the Santiago Formation have been recognized in the Encinitas-Carlsbad-Vista area of San Diego County (Wilson, 1972), and are referred to as members A, B, and C. The lowest, member, A, of the Santiago Formation, is composed predominantly of green mudstone and sandy mudstone interbedded with blue, tuffaceous sandstone and lenticular, concretionary sandstone. The middle member, B, consists of continental, estuarine, and marine deposits composed of green and gray, very fine- to medium-grained, arkosic sandstone with calcitic concretions and interbeds of clayey sandstone and claystone (Wilson, 1972). The upper member, C, unconformably overlies member B, and consists of continental and paralic deposits composed of white to gray-white, friable, cross-bedded, fine- to very coarse-grained, arkosic sandstone with green to green-brown siltstone, silty mudstone, and claystone interbeds (Wilson, 1972). Both members B and C of the Santiago Formation have produced scientifically important marine and estuarine invertebrate fossil remains, as well as terrestrial vertebrate fossil remains (Deméré and Walsh, 1993). Several localities discovered from deposits of member B in Carlsbad and Oceanside, San Diego County, have produced well-preserved vertebrate fossils, including fossil reptiles (e.g., turtles, snakes, lizards, crocodiles), birds, and mammals (e.g., opossums, insectivores, primates, miacid carnivores, rodents, brontotheres, rhinoceros, uinathere, tapirs, protoreodonts, and other early artiodactyls) (Golz and Lillegraven, 1977; Theodor, 1999; Muhlbachler and Deméré, 2009; Tomiya, 2013; Walsh, 1996). Also known from the Santiago Formation are remains of estuarine invertebrates (Deméré and Boettcher, 1985; Givens and Kennedy, 1976; Wilson, 1972), and terrestrial land plants (Deméré and Walsh, 1993).

The Santiago Formation deposits observed at the site consisted of varying shades of gray to brown silty sandstone and brown/gray claystone; however, information on the informal membership of the Santiago Formation present at the site is not provided by the geotechnical report (GeoSoils, Inc., 2019).

The San Diego Natural History Museum (SDNHM) has 56 recorded fossil localities from fluvial, estuarine, and marine deposits of the Santiago Formation within a 1-mile radius of the project site. The deposits include trace fossils (e.g., burrows and sponge borings) and fossil remains or impressions of plants and marine invertebrates, marine vertebrates, terrestrial vertebrates and an unidentified mammal tooth.

4.6.2 Regulatory Setting

The following regulations provide an overall context for the consideration of site-specific issues at the project site. When provisions are requirements (e.g., code, regulation, or ordinance), it is assumed these regulatory requirements would be adhered to with project implementation. For example, it is assumed that all requirements of the Carlsbad Municipal Code (CMC) or California Building Code (CBC) would be adhered to. In addition, it is also assumed that state and federal regulations, codes, and laws would be adhered to, both as they apply to development of the proposed project and related project activities.

State

The following state regulations provide an overall context for the consideration of site-specific issues at the project site. However, as noted above, it is assumed that all applicable codes and regulations would be adhered to with development of the proposed project.

California Building Code

The CBC, which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress facilities, and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The 2019 edition of the CBC is based on the 2018 International Building Code (IBC) published by the International Code Council. The code is updated triennially, and the 2019 edition of the CBC was published by the California Building Standards Commission and took effect starting January 1, 2020. The 2019 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, *Minimum Design Loads for Buildings and Other Structures*, to provide requirements for general structural design and means for determining earthquake loads², as well as other loads (such as wind loads) for inclusion into the CBC. Seismic design provisions of the CBC generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently, structures should be able to: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage but with some nonstructural damage; and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current CBC recommendations does not constitute any kind of guarantee that substantial structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a structure designed in accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a seismic design category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC ranges from A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major

² A load is the overall force to which a structure is subjected in supporting a weight or mass, or in resisting externally applied forces. Excess load or overloading may cause structural failure.

fault). Seismic design specifications are determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load-bearing of soils (1806), as well as foundations (Section 1808), shallow foundations (Section 1809), deep foundations (Section 1810) and expansive soils (Section 1803.5.3). For Seismic Design Categories D, E, and F, Chapter 18 requires an analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. Chapter 18 also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

National Pollution Discharge Elimination System Permits

The National Pollution Discharge Elimination System (NPDES) program in California is administered by the State Water Resources Control Board (SWRCB) and its Regional Water Quality Control Board (RWQCB). As part of the Federal Clean Water Act (CWA), the NPDES permit system was established to regulate both point source discharges and non-point source discharges to surface water of the United States, including the discharge of soils eroded from construction sites. The NPDES program consists of characterizing receiving water quality, identifying harmful constituents (including siltation), targeting potential sources of pollutants (including excavation and grading operations), and implementing a comprehensive stormwater management program. Construction and industrial activities typically are regulated under statewide general permits that are issued by the SWRCB. The SWRCB also issues Waste Discharge Requirements that serve as NPDES permits under the authority delegated to the RWQCBs, under the CWA.

Local

The section below provides a summary of the city's ordinances, regulations, and policies applicable to the proposed project. Where provisions are required by law or ordinance (e.g., the CMC) it is presumed that the proposed project would adhere to the requirements. Where policies or guidelines are provided (i.e., they are not specific regulatory requirements) consistency of the project with the policies identified are either described directly within the individual regulatory setting section below or, if more detail is required, consistency is described further in the impact analysis that follows (Section 4.6.4, *Project Impact Analysis*).

City of Carlsbad Technical Guidelines for Geotechnical Reports

The City of Carlsbad produced a document called Technical Guidelines for Geotechnical Reports in 1993, which are to be followed for all development projects and some building permits. These guidelines outline the minimum standards and information required to ensure the safe development of a project. These guidelines are intended for use by city staff, applicants, and professional consultants, and outline the minimum standards and basic information that are

required to help ensure the safe development and completion of a project. These guidelines would be implemented by city staff during the building permit process.

City of Carlsbad Title 18, Chapter 18.04 (Building Code)

The CMC Title 18, Chapter 18.04 contains the City's Building Code which adopts the 2019 California Building Code with amendments.

City of Carlsbad Title 15 (Grading and Drainage)

The CMC Title 15 covers the city's grading and drainage control requirements which include best management practices (BMPs) that are required for construction activities. contains the City's Building Code which adopts the 2019 California Building Code with amendments.

City of Carlsbad General Plan

Geology and Soils

The Public Safety Element of the city's General Plan regulates the placement of structures within city limits. Specifically, the General Plan goals and policies summarized in this section are related to geology and soils. **Table 4.10-2, *General Plan Consistency Determination Summary*** (provided in Section 4.10.4, *Project Impact Analysis* of the Land Use and Planning section) provides a summary of the applicable General Plan goals and policies, including those for geology and soils, and a project consistency discussion for each. The specific goals and policies listed in this section are addressed in the Table 4.10-2 consistency analysis.

Goals

6-G.1 Minimize injury, loss of life, and damage to property resulting from fire, flood, hazardous material release, or seismic disasters.

Policies

Geology and Seismicity

6-P.9 Allow for consideration of seismic and geologic hazards at the earliest possible point in the development process, preferably before comprehensive engineering work has commenced.

6-P.10 Maintain geotechnical report guidelines identifying specific requirements for various levels of geotechnical evaluation, including reconnaissance studies, preliminary geotechnical investigation reports, and as-graded geotechnical reports

6-P.11 Use information in Figure 6-4 as a generalized guideline for planning purposes and in determining the type and extent of geotechnical report to be required for a proposed development project. When a geotechnical report is required, require submission of the report and demonstration that a project conforms to all mitigation measures recommended in the report prior to city approval of the proposed development.

6-P.12 Require a geotechnical investigation and report of all sites proposed for development in areas where geologic conditions or soil types are susceptible to liquefaction. Also require

demonstration that a project conforms to all mitigation measures recommended in the geotechnical report prior to city approval of the proposed development (as required by state law).

6-P.13 Prohibit location of critical structures directly across known earthquake faults unless a geotechnical and/or seismic investigation is performed to show that the earthquake fault is neither active nor potentially active.

6-P.14 Require applicants to conduct detailed geologic and seismic investigations at sites where the construction of critical structures (high-occupancy structures and those that must remain in operation during emergencies) and structures over four stories are under consideration.

6-P.17 Continue to regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards on sites having a history or threat of seismic dangers, erosion, subsidence, or flooding.

Paleontological Resources

The city's General Plan contains policies that address the management of paleontological resources. The following policies from the Open Space, Conservation, and Recreation and the Arts, History, Cultural, and Education Element are applicable:

Special Resource Areas; Lagoons

4-P.32 Where appropriate, designate as open space those areas that preserve historic, cultural, archeological, paleontological, and education resources.

Archaeological and Paleontological Resources

7-P.7 Implement the City of Carlsbad Cultural Resources Guidelines to avoid or substantially reduce impacts to archaeological and paleontological resources.

7-P.8 During construction of specific development projects, require monitoring of grading, ground disturbing, and other major earthmoving activities in previously undisturbed areas or in areas with known archaeological or paleontological resources by a qualified professional, as well as a tribal monitor during activities in areas with cultural resources of interest to local Native American tribes. Both the qualified professional and tribal monitor shall observe grading, ground-disturbing, and other earth-moving activities.

City of Carlsbad Tribal, Cultural, and Paleontological Resource Guidelines

The City of Carlsbad Tribal, Cultural, and Paleontological Guidelines set forth the paleontological sensitivity model for the city and outline procedures to be followed prior to, during, and after construction of a project. These Tribal, Cultural, and Paleontological Guidelines were developed by the city to satisfy a variety of local, state, and federal requirements, to the greatest extent that they apply to any given project and for requirements over which the City has either jurisdiction or the ability to execute. These guidelines are referenced in the City of

Carlsbad General Plan. The paleontological resource analysis contained in Section 4.6.4, Environmental Impact Analysis, has been prepared consistent with the direction provided by these guidelines

4.6.3 Thresholds and Methodology

Thresholds

A significant impact would occur to geology and soils if the proposed project would:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving the following:
 - 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 (now California Geological Survey) Special Publication 42
 - Strong seismic ground shaking
 - Seismic-related ground failure, including liquefaction
 - Landslides
- Result in substantial soil erosion or the loss of topsoil.
- 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.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.³
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Methodology

The potential for creation of significant impacts related to geology and soils through construction and operation of the proposed project was determined by a thorough review of the existing conditions that were informed by the geotechnical reports prepared for the site, and data from the USGS, CGS, the United States Department of Conservation, and Southern California Earthquake Data Center.

Direct impacts to paleontological resources occur when earthwork activities (e.g., mass grading, utility trenching) cut into the geologic units within which fossils are buried and physically destroy the fossil remains. As such, only earthwork activities that will disturb potentially fossil-bearing sedimentary deposits (i.e., those rated with a high or moderate paleontological potential) have the potential to significantly impact paleontological resources. Paleontological mitigation typically is

³ The CBC, based on the IBC and the now-defunct UBC, no longer includes a Table 18 1 B. Instead, CBC Section 1803.5.3 describes the criteria for analyzing expansive soils.

recommended to reduce any negative impacts to paleontological resources to less-than-significant levels.

The analysis of paleontological resources is based on the Paleontological Resources Assessment Report (Appendix E.6) which includes a review of the SDNHM paleontological collection database and other documentation regarding disturbances to the project site and its subsurface geological conditions. The objective of the record search through the SDNHM was to determine the geological formations underlying the project site, whether any paleontological localities have previously been identified within the project site or in the same or similar formations near the project site, and the potential for excavations associated with the proposed project to encounter paleontological resources.

Although no known resources were identified within the project site from the SDNHM search, this did not preclude the possibility of previously unknown buried paleontological resources within the project site that may be impacted during construction of the project. The potential to encounter paleontological resources during project construction is determined in the impact analysis by reviewing the results of the records search, the depth of native versus fill soils, land use history, past disturbances, and the proposed earthwork and excavation parameters for the project.

4.6.4 Project Impact Analysis

Impact 4.6-1: Would the proposed project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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.

No Holocene-active faults have been recognized as crossing or being immediately adjacent to the project site (GeoSoils, Inc., 2019). The CGS does not delineate any part of the project site as being within an Alquist-Priolo Earthquake Fault Zone (California Geological Survey, 2018). The closest active fault to the project site is the Rose Canyon Fault, located approximately 5.3 miles to the west. Since there are no active faults on or adjacent to the project site, the proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the California State Geologist for the area. Thus, there would be **no impact** related to this threshold.

Impact 4.6-2: Would the proposed project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

The project site is located in a seismically active region with numerous active faults that are considered capable of producing seismic events in the future. The Rose Canyon fault, which is approximately 5.3 miles to the west (GeoSoils, Inc., 2019; California Geological Survey, 2018) is the Holocene-active fault closest to the project site. Given the proximity of known faults, there is potential for high-intensity groundshaking associated with the earthquakes in this region. The

intensity of such an event would depend on the causative fault and the distance to the epicenter, the strength and duration of shaking, and the nature of the geologic materials on which the proposed project would be constructed. With regard to the last factor, the geologic material on which the proposed project would be constructed would be removed, compacted, or replaced as necessary pursuant to further subsurface investigations of areas where near-surface structures are planned. All fill and backfill materials would be observed and tested by the geotechnical engineer prior to their use in order to evaluate their suitability in accordance with current building code requirements. The properties of fill and backfill material that would be investigated, consistent with Chapter 18 of the CBC, may include grain size, shear strength, compressibility, expansion, compaction, and corrosivity characteristics.

The structural elements of the proposed project would be required to undergo appropriate design-level geotechnical evaluations prior to final design and construction in accordance with the version of Chapter 18 of the CBC in effect at the time building permits are requested. Implementing the regulatory requirements of the applicable CBC, city ordinances (Titles 15 and 18 of the CMC), the CGS Guidelines for Evaluating and Mitigating Seismic Hazards in California, and ensuring all buildings and structures are constructed in compliance with the law is the responsibility of state licensed project engineers and the city's building officials as detailed in Chapter 18 of the CBC. Construction of all improvements would be designed from data collected in the geotechnical investigations to ensure that the conditions are suitable to support the improvements and any unsuitable material would be excavated and compacted until it meets CBC criteria. Compliance with the CBC and local ordinances (Titles 15 and 18 of the CMC) would minimize the potential for damage from strong seismic ground shaking. The proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. The impact would be **less than significant**.

Impact 4.6-3: Would the proposed project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

The regional groundwater table is reported as deeper than 50 feet below the existing ground surface, however perched groundwater was observed at the site at a depth of approximately 21.5 feet bgs on the East Parcel. The preliminary geotechnical report concluded that the project site has a low susceptibility of damage from liquefaction, provided that the recommendations contained in the report are incorporated into project design and construction (GeoSoils, Inc., 2019).

As noted above, the proposed project would be required to undergo appropriate design level geotechnical evaluations prior to final design and construction in accordance with the version of Chapter 18 of the CBC in effect at the time building permits are requested. Implementing the regulatory requirements of the applicable CBC, county and city ordinances, and the CGS Guidelines for Evaluating and Mitigating Seismic Hazards in California would ensure all improvements are founded on subsurface soils that are not susceptible to the effects of liquefaction. Compliance with the law is the responsibility of state licensed project engineers and the city's building officials as detailed in Chapter 18 of the CBC. Construction of all

improvements would be designed from data collected in the geotechnical investigations to ensure that the conditions are suitable to support the improvements and any unsuitable material would be excavated and compacted until it meets CBC criteria. Compliance with the CBC and local ordinances would minimize the potential for damage from seismic related ground failure, including liquefaction, and the impact would be **less than significant**.

Impact 4.6-4: Would the proposed project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

As shown in Figure 4.6-1, *Slope Analysis Map*, the project site includes a range of slope inclinations that are as high as 40%. While the preliminary geotechnical report found no evidence of past landslides or mass wasting events, landslides are not uncommon in slopes steeper than 15%. The findings from the geotechnical report conclude that slope stability is a concern at the site. In addition, the report notes that the hills to the southwest of the site have been identified as susceptible to mudflows.

Project construction would include earthwork activities and grading of the site that would be detailed within a grading plan submitted to and approved by the city. The grading plan would be consistent with the recommendations of the preliminary geotechnical report, a final design level geotechnical report, and the current version of the CBC. The project design would include debris impact walls, drainage control measures and setbacks as necessary to ensure that adverse effects from slope stability are minimized. Implementation of these recommendations would ensure that any proposed structures and other improvements would not cause or be adversely affected by any slope failure, if one did occur.

The city requires that all development meet the latest standards of the CBC, which includes identification of slope stability and factor of safety minimum requirements (Chapter 1803A.5.11). The proposed project, including off-site improvements, would be in accordance with the city's grading permit and building code requirements, which would be consistent with the most recent version of the CBC in effect at the time building permits are requested. These requirements would ensure that improvements would not be adversely affected by a landslide.

The final design level geotechnical report would be prepared by a California registered Geotechnical Engineer or Engineering Geologist and recommendations would include final design parameters for the walls, foundations, foundation slabs, and surrounding related improvements (utilities, roadways, parking lots and sidewalks) for all proposed improvements, prior to issuance of a building permit. Therefore, with implementation of the seismic design requirements of the final design level geotechnical report into construction specifications as required by CMC Title 18, Chapter 18.04, the impacts associated with landslides would be **less than significant**.

Impact 4.6-5: Would the proposed project result in substantial soil erosion or the loss of topsoil?

Erosion is discussed in more detail in Section 4.8, *Hydrology and Water Quality*. Erosion of exposed soils can occur as a result of the forces of wind or water. Substantial earth work and

excavation would occur during project construction. Projects that disturb more than 1 acre of land during construction, such as the proposed project, are required to file a Notice of Intent with the SWRCB to be covered under the NPDES Construction General Permit for discharges of stormwater associated with construction activity. Prior to construction of the proposed project, the project applicant would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) as required by the Construction General Permit, which would describe best management practices (BMPs) that would be implemented to reduce runoff and subsequent erosion. The SWRCB also issues the NPDES Municipal Separate Storm Sewer System (MS4) Permit for the San Diego Region (Order No. R9-2013-0001). The MS4 permit imposes a number of basic programs, called Minimum Control Measures, on all permittees in order to maintain a level of acceptable runoff conditions through the implementation of practices, devices, or designs generally referred to as BMPs, that mitigate stormwater quality problems, including erosion, during construction and operational phases of a project. During construction of the proposed project, all activities would be required to adhere to the applicable BMPs that would be prescribed in order to prevent erosion and runoff during construction. Therefore, adherence to these NPDES requirements as enforced by the SWRCB would ensure that erosion control BMPs are implemented during construction which would reduce potential impacts to less than significant levels.

During operation of the proposed project, improvements would include required drainage control measures consistent with NPDES MS4 requirements such that the potential for erosion or loss of topsoils would be reduced to less than significant levels. Given the developed nature of the proposed project, the project site would not be readily susceptible to erosion.

Overall, the proposed project would not result in substantial soil erosion or the loss of topsoil, on- or off-site. The impact would be **less than significant**.

Impact 4.6-6: Would the proposed project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

The potential for on- or off-site landslides is discussed above in Impact 4.6-4.

Lateral spread displacement can occur during strong earthquakes, especially when conditions such as free-face, sloping ground surfaces and liquefiable layers are present. According to the preliminary geotechnical report, the project site does not have conditions present that make it susceptible to lateral spreading (GeoSoils, Inc., 2019).

Subsidence is the gradual settling or sinking of the ground, most often caused by the removal of water, oil, natural gas, or mineral resources from the ground. There is no historic evidence of subsidence in the city, and no major extraction of water or petroleum is planned in the vicinity of the project site in the future. Based on the site location, existing soil characteristics, and the implementation of required site preparations consistent with current CBC requirements and the city's building code requirements (Title 18), the potential for subsidence would be **less than significant**.

Collapsible soils undergo settlement upon wetting, even without the application of additional load. Water weakens the bonds between soil particles and reduces the bearing capacity of the soil. Collapsible soils are typically lightly colored, have low plasticity, and relatively low densities. The project site does not include conditions that would lead to collapse (GeoSoils, Inc., 2019).

Thus, the potential impact from unstable geologic unit or soils would be **less than significant**.

Impact 4.6-7: Would the proposed project be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?⁴

Expansive soils are fine-grained soils that can undergo a significant increase in volume with an increase in water content and a significant decrease in volume with a decrease in water content. Changes in the water content of an expansive soil can result in severe distress to structures constructed upon the soil. Laboratory testing of project soil indicated that the site includes soils with a low to moderate potential for expansion (GeoSoils, Inc., 2019).

Regardless, the structural elements of the proposed project would be required to undergo appropriate design-level geotechnical evaluations prior to final design and construction, which would include any necessary measures, such as the removal of expansive soils, if present, to ensure that expansive soil hazards are minimized. Any new fill materials imported to the site would be required to meet minimum standards for expansion potential to ensure that adverse effects from expansion are minimized. Implementing the regulatory requirements of the applicable CBC, county and city ordinances, the CGS Guidelines for Evaluating and Mitigating Seismic Hazards in California, and ensuring all buildings and structures are constructed in compliance with the law is the responsibility of state licensed project engineers and the city's building officials through the building permit process. Therefore, with implementation of the recommendations from the final design level geotechnical report in accordance with CBC code requirements, would make the potential for adverse effects from expansive soils **less than significant**.

Impact 4.6-8: Would the proposed project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The proposed project would connect to existing wastewater infrastructure and would not include the use of septic tanks or alternative waste water disposal systems. Therefore, there would be **no impact** related to this significance threshold.

Impact 4.6-9: Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Direct impacts to paleontological resources occur when earthwork activities (e.g., mass grading, utility trenching), cut into the geologic units within which fossils are buried, and physically

⁴ The CBC, based on the IBC and the now-defunct UBC, no longer includes a Table 18 1 B. Instead, CBC Section 1803.5.3 describes the criteria for analyzing expansive soils.

destroy the fossil remains. As such, only earthwork activities that would disturb potentially fossil-bearing sedimentary deposits (i.e., those rated with a high or moderate paleontological potential) have the potential to significantly impact paleontological resources.

The purpose of the impact analysis is to determine which (if any) of the project-related earthwork activities may disturb potentially fossil-bearing geologic units, and where and at what depths this earthwork will occur. The paleontological impact analysis involved analysis of available project documents, and comparison with geological and paleontological data gathered during the records searches and literature review.

Potential impacts to paleontological resources are typically assigned a paleontological sensitivity rating based on the potential fossil yield of an impacted geologic unit. Following the City of Carlsbad Tribal, Cultural, and Paleontological Guidelines (City of Carlsbad, 2017), a three-tiered scale is used here that assigns each geologic unit underlying the project site a High, Moderate, or Low Sensitivity rating, as summarized in **Table 4.6-1, Paleontological Sensitivity Ratings**.

**TABLE 4.6-1
 PALEONTOLOGICAL SENSITIVITY RATINGS**

Sensitivity Rating	Description
High	Geologic formations with high sensitivity are known to contain paleontological localities with significant fossils comprising unique invertebrate fossil assemblages or unique vertebrate fossil remains.
Moderate	Geologic formations with moderate sensitivity are known to contain paleontological localities in localized outcrops. Formations that have not been adequately studied and yet have some proven potential to produce localities may also be assigned a moderate potential.
Low	Geologic units with low sensitivity are geologic units that, based on their relatively young age and/or high-energy depositional history, are judged unlikely to produce important fossil remains. Typically, low potential units produce fossil remains in low abundance, or only produce common/widespread invertebrate fossils whose taphonomy, phylogeny, and ecology is already well understood. Also included in this category are geologic formations composed of volcaniclastic (derived from volcanic sources) or metasedimentary rocks, but that nevertheless have a limited probability for producing fossils from certain localized outcrops. Volcanic or plutonic igneous rocks that do not yield fossil remains are also assigned a low potential.

SOURCE: City of Carlsbad, 2017.

The project-specific geotechnical report (GeoSoils, Inc., 2019) indicates that the project site is underlain by undocumented artificial fill, Holocene-age alluvial deposits, and the middle Eocene-age Santiago Formation. A records search of the SDNHM paleontological collection database indicates that there are 67 recorded SDNHM fossil collection localities within a 1-mile radius of the project site. Eleven of these localities are from geologic units that do not occur within the project site. The remaining 56 localities are from the Santiago Formation.

The project-specific geotechnical report (GeoSoils, Inc., 2019) recommends that all artificial fill, young alluvial deposits, and weathered Santiago Formation be removed to expose unweathered bedrock of the Santiago Formation prior to the importation of compacted artificial fill for the creation of a level building pad. To achieve this, GeoSoils (2019) indicates that remedial grading

of the site is necessary. Remedial grading is anticipated to extend 3 to 7 feet below existing grade in the West Parcel and 17 to 20 feet below existing grade in the East Parcel.

As previously noted above, only the Santiago Formation has a significant potential for paleontological resources. Artificial fill has no paleontological potential because of the disturbed nature of these sediments and any contained fossils and Holocene alluvial deposits within the project site are assigned a low paleontological potential based on the high energy depositional environment of these strata and their relatively young geologic age (generally less than 11,000 years old).

The Santiago Formation is assigned a high paleontological potential based on the numerous fossil localities documented from these deposits in close proximity to the project site, along with the important terrestrial vertebrate faunas recovered from deposits of the Santiago Formation elsewhere in Orange County and San Diego County.

The Santiago Formation is documented on the West and East Parcels. It is variably exposed at the surface (in natural and cut slopes in the southwestern corner of the West Parcel), underlying artificial fill at shallow depths (across previously developed portions of the West Parcel), or underlying Holocene alluvial deposits and artificial fill at greater depths (East Parcel). Because remedial grading is planned to expose unweathered bedrock of the Santiago Formation, these strata will be impacted by construction at or near the maximum depths of remedial grading. As a result, construction of the proposed project would have the potential to directly or indirectly destroy a previously unknown unique paleontological resource not identified in the analysis conducted for the proposed project. This would be considered a **potentially significant impact**.

4.6.5 Level of Significance before Mitigation

Implementation of the proposed project would result in a potentially significant impact, as discussed above under Impact 4.6-9.

4.6.6 Environmental Mitigation Measures

The following mitigation measure would reduce the proposed project's potentially significant impact identified under Impact 4.6-9, which would result from the potential for construction activities to directly or indirectly destroy a previously unknown paleontological resource not identified in the analysis conducted for the proposed project. The following mitigation measure would reduce impacts to paleontological resources by implementing a monitoring, recovery, and treatment program for paleontological resources.

Mitigation Measure GEO-1: Paleontological Resources – Monitoring, Recovery and Treatment Program. Prior to the commencement of construction, a qualified Principal Paleontologist shall be retained to oversee the mitigation program. The city defines a Principal Paleontologist as a person with a graduate degree in paleontology, geology, or related field, and who has at least 1 year of prior experience as a principal investigator. In addition, a regional fossil repository shall be designated to receive any discovered fossils. Because the proposed project is in San Diego County, the recommended repository is the San Diego Natural History Museum.

The Principal Paleontologist shall attend the pre-construction meeting to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. As well, the Principal Paleontologist shall conduct a paleontological resource contractor awareness training workshop to be attended by earth excavation personnel.

The Principal Paleontological shall oversee the implementation of required monitoring, recovery, and treatment of resources within both the West Parcel and East Parcel. A paleontological monitor (working under the direction of the Principal Paleontologist) shall be on-site on a full-time basis during all original cutting of previously undisturbed deposits of the Santiago Formation (high paleontological potential) to inspect exposures for unearthed fossils. Site conditions differ slightly between the parcels.

Monitoring is required during earthwork within the following areas:

- West Parcel: Earthwork that is 3 feet below existing grade or more and any work with any grade changes to the existing slopes in the southwestern corner of the parcel.
- East Parcel: Earthwork that is 17 feet below existing grade or more.

If fossils are discovered, the Principal Paleontologist or paleontological monitor shall recover them. Bulk sedimentary matrix samples may also be collected for stratigraphic horizons that appear likely to contain microvertebrate fossils. In most cases, this fossil salvage can be completed in a short period of time. However, some fossil specimens (e.g., a bone bed or a complete large mammal skeleton) may require an extended salvage period. In these instances, the Principal Paleontologist (or paleontological monitor) has the authority to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner.

Fossil remains collected during monitoring and salvage shall be prepared (including washing of sediments to recover microvertebrate fossils), repaired, sorted, and cataloged as part of the mitigation program. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be deposited (as a donation) in the designated fossil repository. Donation of the fossils shall be accompanied by financial support for initial specimen storage.

A final summary paleontological mitigation report shall be completed that outlines the results of the mitigation program. This report shall include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, inventory lists of catalogued fossils, and significance of recovered fossils. The final paleontological mitigation report shall be submitted to the city or an appointed designee for review and approval prior to the release of the grading bond. This mitigation measure addresses the impact identified under Impact 4.6-9 of the EIR.

4.6.7 Level of Significance after Mitigation

Implementation of Mitigation Measure GEO-1 would reduce potentially significant paleontological impacts resulting from construction of the proposed project to levels that would be less than significant. With the implementation of the mitigation measures, the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Thus, impacts related to paleontological resources would be **less than significant**.

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4.7 Greenhouse Gas Emissions

This section analyzes the potential effects of the proposed project's impacts related to greenhouse gas (GHG) emissions. The analysis is supported by *Aviara Apartments Project Greenhouse Gas Emissions Analysis* (Helix, 2020), which is provided in Appendix F.1. As well, the GHG emissions calculations are provided in Appendix F.2.

4.7.1 Existing Conditions

Of the 9.5-acre project site, approximately 8.2 net acres of developable land is present (Helix, 2020). The project site includes two parcels: (1) the East Parcel, which is approximately 2.31 acres, and (2) the West Parcel, which is approximately 7.19 acres. The West Parcel is currently developed with a 38,000-square-foot warehouse, a 10,000-square-foot loading dock with a 350-foot-long shed, a 50,000-square-foot concrete parking area for trucks, and about 85,000 square feet of gravel roads and parking. The East Parcel is currently undeveloped vacant land with existing native and non-native vegetation, but the site has previously been graded.

Background and Context

Global climate change refers to changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation and storms. Historical records indicate that global climate changes have occurred in the past due to natural phenomena; however, data from the Intergovernmental Panel on Climate Change indicates that the current global conditions differ from past climate changes in rate, magnitude, and that the changes are being attributed to anthropogenic (human-caused) activities (IPCC, 2014). The term GHG refers to gases that trap long-wave radiation or heat in the atmosphere, which heats the surface of the Earth. Without human intervention, the Earth maintains an approximate balance between the GHG emissions in the atmosphere and the storage of GHGs in the oceans and terrestrial ecosystems. GHGs are the result of both natural and anthropogenic activities. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions.

The State of California recognized that anthropogenic GHG emissions are contributing to changes in the global climate and that such changes are having and will have adverse effects on the environment, the economy, and public health (CARB, 2017b). While worldwide contributions of GHG emissions are expected to have widespread consequences, it is not possible to link particular changes to the environment of California or elsewhere to GHGs emitted from a particular source or location. In other words, emissions of GHGs have the potential to cause global impacts rather than local impacts. Increased concentrations of GHGs in the Earth's atmosphere have been linked to global climate change resulting in unusual environmental consequences such as rising surface temperatures, melting icebergs and snowpack, rising sea levels, and the increased frequency and magnitude of severe weather conditions (IPCC, 2014). Existing climate change models also show that climate warming portends a variety of impacts on agriculture, including loss of microclimates that support specific crops, increased pressure from invasive weeds and diseases, and loss of productivity due to changes in water reliability and availability (OPR, CNRA, 2018). In addition, rising temperatures and shifts in microclimates

associated with global climate change are expected to increase the frequency and intensity of wildfires (USGCRP, 2018) (OPR, 2018).

State law defines GHGs to include the following compounds: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).¹ The most common GHG that results from human activity is CO₂, which represents 76% of total anthropogenic GHG emissions in the atmosphere (as of 2010 data) (IPCC, 2014), followed by CH₄ and N₂O. Scientists have established a Global Warming Potential (GWP) to gauge the potency of each GHG’s ability to absorb and re-emit long-wave radiation and these GWP ratios are available from IPCC. The GWP of a gas is determined using CO₂ as the reference gas with a GWP of 1 over 100 years. For example, a gas with a GWP of 10 is 10 times more potent than CO₂ over 100 years. The sum of each GHG multiplied by its associated GWP is referred to as carbon dioxide equivalents (CO₂e). The measurement unit CO₂e is used to report the combined potency of GHG emissions.

Historically, GHG emission inventories have been calculated using the GWPs from the IPCC’s Second Assessment Report (SAR). In 2007, IPCC updated the GWP values based on the latest science at the time in its Fourth Assessment Report (AR4). The updated GWPs in the IPCC AR4 have begun to be used in recent GHG emissions inventories. In 2013, IPCC again updated the GWP values based on the latest science in its Fifth Assessment Report (AR5) (IPCC, 2013). However, United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines for national inventories require the use of GWP values from the AR4. To comply with international reporting standards under the UNFCCC, official emission estimates for California and the U.S. are reported using AR4 GWP values. Therefore, statewide and national GHG inventories have not yet updated their GWP values to the AR5 values. By applying the GWP ratios, project-related CO₂e emissions can be tabulated in metric tons per year. Typically, the GWP ratio corresponding to the warming potential of CO₂ over a 100-year period is used as a baseline. Compounds that are regulated as GHGs are discussed below and their respective GWPs are summarized in **Table 4.7-1, Reported GWP Values for Regulated Greenhouse Gases**

**TABLE 4.7-1
 REPORTED GWP VALUES FOR REGULATED GREENHOUSE GASES**

Regulated GHG Compound	IPCC SAR GWP	IPCC AR4 GWP	IPCC AR5GWP
Carbon Dioxide (CO₂)	1	1	1
Methane (CH₄)	21	25	28
Nitrous Oxide (N₂O)	310	298	265
Hydrofluorocarbons (HFCs)	140 to 11,700	124 to 14,800	138 to 12,400
Perfluorocarbons (PFCs)	6,500 to 9,200	7,390 to 17,700	6,630 to 17,400
Sulfur Hexafluoride (SF₆)	23,900	22,800	23,500

SOURCES: Intergovernmental Panel on Climate Change, Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2014, https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf. Accessed: February 2020

¹ CEQA Guidelines Section 15364.5; Health and Safety Code, Section 38505(g).

Carbon Dioxide (CO₂): CO₂ is the most abundant GHG in the atmosphere and is primarily generated from fossil fuel combustion from stationary and mobile sources. CO₂ is the reference gas (GWP of 1) for determining the GWPs of other GHGs.

Methane (CH₄): CH₄ is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. The GWP of CH₄ is 21 in the IPCC SAR, 25 in the IPCC AR4, and 28 in the IPCC AR5.

Nitrous Oxide (N₂O): N₂O produced by human-related sources including agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N₂O is 310 in the IPCC SAR, 298 in the IPCC AR4, and 265 in the IPCC AR5.

Hydrofluorocarbons (HFCs): HFCs are fluorinated compounds consisting of hydrogen, carbon, and fluorine. They are typically used as refrigerants in both stationary refrigeration and mobile air conditioning systems. The GWPs of HFCs ranges from 140 for HFC-152a to 11,700 for HFC-23 in the IPCC SAR, 124 for HFC-152a to 14,800 for HFC-23 in the IPCC AR4, and 138 for HFC-152a to 12,400 for HFC-23 in the IPCC AR5.

Perfluorocarbons (PFCs): PFCs are fluorinated compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. The GWPs of PFCs range from 6,500 to 9,200 in the IPCC SAR, 7,390 to 17,700 in the IPCC AR4, and 6,630 to 17,400 in the IPCC AR5.

Sulfur Hexafluoride (SF₆): SF₆ is a fluorinated compound consisting of sulfur and fluoride. It is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. SF₆ has a GWP of 23,900 in the IPCC SAR, 22,800 in the IPCC AR4, and 23,500 in the IPCC AR5.

The California Air Resources Board (CARB) compiles the State's GHG emissions inventory. The most updated inventory is referred to as the 2018 edition, which reports the State's GHG emissions inventory from calendar year 2016. Based on the 2016 GHG inventory data (i.e., the latest year for which data are available from CARB), California emitted 429.4 million metric tons of CO₂e (MMTCO₂e) including emissions resulting from imported electrical power (CARB, 2017a).

Between 1990 and 2016, the population of California grew by approximately 9.5 million (from 29.8 to 39.3 million) (United States Census Bureau, 2009; California Department of Finance, 2018a; California Department of Finance, 2018b). This represents an increase of approximately 32% from 1990 population levels. In addition, the California economy, measured as gross state product, grew from \$773 billion in 1990 to \$2.62 trillion in 2016 representing an increase of approximately 239% (just over three times the 1990 gross state product) (California Department of Finance, 2020). Despite the population and economic growth, California's net GHG emissions decreased from 1990 (431 MMTCO₂e) to 2016. According to CARB, California is on track to meet the 2020 GHG reduction target codified in California Health and Safety Code (HSC),

Division 25.5, also known as The Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) as demonstrated by the declining trend coupled with implementation of the state’s GHG reduction programs (such as the Renewables Portfolio Standard (RPS), Low Carbon Fuel Standard (LCFS), vehicle efficiency standards, and declining caps under the Cap and Trade Program) (CEC, 2006a). **Table 4.7-2, State of California Greenhouse Gas Emissions**, identifies and quantifies statewide anthropogenic GHG emissions and sinks (e.g., carbon sequestration due to forest growth) in 1990 and 2016. As shown in the table, the transportation sector is the largest contributor to statewide GHG emissions at 39% in 2016.

**TABLE 4.7-2
 STATE OF CALIFORNIA GREENHOUSE GAS EMISSIONS**

Category	Total 1990 Emissions (MMTCO₂e)	Percent of Total 1990 Emissions	Total 2016 Emissions (MMTCO₂e)	Percent of Total 2016 Emissions
Transportation	150.7	35%	169.38	39%
Electric Power	110.6	26%	68.58	16%
Commercial	14.4	3%	13.73	4%
Residential	29.7	7%	25.63	5%
Industrial	103.0	24%	89.61	21%
Recycling and Waste ^a	–	–	8.81	2%
High GWP/Non-Specified ^b	1.3	<1%	19.78	5%
Agriculture/Forestry	23.6	6%	33.84	8%
Forestry Sinks	-6.7	–	– ^c	–
Net Total (IPCC SAR)	426.6	100%	–	–
Net Total (IPCC AR4)^d	431	100%	429.4	100%

^a Included in other categories for the 1990 emissions inventory.
^b High GWP gases are not specifically called out in the 1990 emissions inventory.
^c Forestry sinks was not calculated for 2016 pending a revised methodology under development.
^d CARB revised the State’s 1990 level GHG emissions using GWPs from the IPCC AR4.
 SOURCES: (CARB, 2007; CARB, 2017a).

Effects of Global Climate Change

The scientific community’s understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain significant scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth’s climate system and inability to accurately model it, the uncertainty surrounding climate change may never be completely eliminated. Nonetheless, IPCC’s AR5 states that, “it is *extremely likely* that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forces [*sic*] together”

(IPCC, 2013) A report from the National Academy of Sciences concluded that 97% to 98% of the climate researchers most actively publishing in the field support the tenets of the IPCC in that climate change is very likely caused by human (i.e., anthropogenic) activity (Anderegg et al., 2010) According to CARB, the potential impacts in California due to global climate change may include: loss in snow pack; sea-level rise; more extreme heat days per year; more high ozone days; more large forest fires; more drought years; increased erosion of California's coastlines and seawater intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation (USGCRP, 2018). Below is a summary of some of the potential effects that could be experienced in California as a result of global warming and climate change.

Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore, its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would exacerbate air quality. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (CalEPA, 2013). However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires.

Water Supply

There is a high degree of uncertainty with respect to the overall impact of global climate change on future water supplies in California. Studies indicate considerable variability in predicting precise impacts of climate change on California hydrology and water resources. Increasing uncertainty in the timing and intensity of precipitation will challenge the operational flexibility of California's water management systems. Warmer, wetter winters would increase the amount of runoff available for groundwater recharge; however, this additional runoff would occur at a time when some basins are either being recharged at their maximum capacity or are already full. Conversely, reductions in spring runoff and higher evapotranspiration because of higher temperatures could reduce the amount of water available for recharge (CNRA, 2018).

Hydrology and Sea-Level Rise

Climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain, or snow events, coincidental high tide and high runoff events); sea-level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. Sea-level rise can be a product of global warming through two main processes: expansion of seawater as the oceans warm, and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events (CNRA, 2018).

Agriculture

California has a massive agricultural industry that represents 11.3% of total U.S. agricultural revenue. Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, a changing climate presents significant risks to agriculture due to “potential changes to water quality and availability; changing precipitation patterns; extreme weather events including drought, severe storms, and floods; heat stress; decreased chill hours; shifts in pollinator lifecycles; increased risks from weeds, pest and disease; and disruptions to the transportation and energy infrastructure supporting agricultural production” (CNRA, 2018).

Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists expect that the average global surface temperature could rise by 2-11.5°F (1.1-6.4°C) by 2100, with significant regional variation (National Research Council, 2010). Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Sea level could rise as much as two feet along most of the United States coastline. With climate change, ecosystems and wildlife will be challenged by the spread of invasive species, barriers to species migration or movement in response to changing climatic conditions, direct impacts to species health, and mismatches in timing between seasonal life-cycle events such as species migration and food availability (CNRA, 2014).

In 2009, the California Natural Resources Agency (CNRA) published the *California Climate Adaptation Strategy* as a response to the Governor’s Executive Order (EO) S-13-2008 (CNRA, 2009a). In 2014, the CNRA rebranded the first update of the 2009 adaptation strategy as the *Safeguarding California Plan* (CNRA, 2014). A 2018 update to *Safeguarding California* builds from the 2009 document to guide California towards improved climate resiliency (CNRA, 2018). *Safeguarding California* lists specific recommendations for state and local agencies to best adapt to the anticipated risks posed by a changing climate. In accordance with the 2009 *California Climate Adaptation Strategy*, the California Energy Commission (CEC) was directed to develop a website on climate change scenarios and impacts that would be beneficial for local decision makers. The website, known as Cal-Adapt, became operational in 2011.² The information provided on the Cal-Adapt website represents a projection of potential future climate scenarios comprised of local average values for temperature, sea-level rise, snowpack and other data representative of a variety of models and scenarios, including potential social and economic factors. According to the Cal-Adapt website, the portion of the state in which the project site is located could result in an average increase in temperature of approximately 4.2 to 7.2°F to 78.1 to 81.1°F by 2070–2099, compared to the baseline 1961–1990 period (73.9°F historical annual mean).

² The Cal-Adapt website address is: <http://cal-adapt.org>.

4.7.2 Regulatory Setting

Federal

The following federal regulations provide an overall context for the consideration of site-specific issues at the project site. It is assumed that federal regulations, codes, and laws would be adhered to, both as they apply to development of the proposed project and related project activities.

Clean Air Act

In *Massachusetts v. Environmental Protection Agency* (2007) 549 U.S. 497, the U.S. Supreme Court held in April of 2007 that the United States Environmental Protection Agency (EPA) has statutory authority under Section 202 of the federal Clean Air Act (CAA) to regulate GHGs. The court did not hold that the EPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA. The EPA adopted a Final Endangerment Finding for the six defined GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) on December 7, 2009. The Endangerment Finding is required before the EPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently with the United States Supreme Court decision. The EPA also adopted a Cause or Contribute Finding in which the EPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Light-Duty Vehicle Greenhouse Gas and Fuel Efficiency Standards

In August 2012, the EPA and U.S. Department of Transportation adopted standards for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2020, vehicles are required to achieve a combined standard of 41.7 mpg and 213 grams of CO₂ per mile. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO₂ per mile. According to the EPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle (EPA, 2018). In 2017, the EPA recommended no change to the GHG standards for light-duty vehicles for model years 2022–2025. On April 2, 2018, the EPA Administrator signed the Mid-term Evaluation Final Determination that finds that the model year 2022–2025 GHG standards are not appropriate in light of the record before the EPA and, therefore, should be revised. In August 2018, the EPA proposed the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule that would, if adopted, maintain the Corporate Average Fuel Economy (CAFE) and CO₂ standards applicable in model year 2020 for model years 2021 through 2026. In September 2019, the EPA published the final rule in the federal register (EPA and NHTSA, 2019)). The EPA also published the final rule for the One National Program on Federal Preemption of State Fuel Economy Standards that finalizes critical parts of the SAFE Vehicles Rule and makes clear that federal law preempts state and local tailpipe GHG emissions standards as well as zero emission vehicle (ZEV) mandates. California and 22 other states and environmental groups in September 2019 in U.S. District Court in Washington, filed lawsuits to challenge the Federal determination in September that California

cannot set vehicle emission standards and zero-emission vehicle mandates. The Court has not yet ruled on the lawsuits.

Energy Independence and Security Act

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
- Requiring approximately 25% greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200% greater efficiency for light bulbs, or similar energy savings, by 2020.
- While superseded by the EPA and National Highway Traffic Safety Administration (NHTSA) actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, carbon capture, and international energy programs, and the creation of green jobs.³

Voluntary Programs

The EPA is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG emissions in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO₂ gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The EPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

State

The following state regulations provide an overall context for the consideration of site-specific issues at the project site. It is assumed that state regulations, codes, and laws would be adhered to, both as they apply to development of the proposed project and related project activities.

³ A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

California Air Resources Board

CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards [CAAQS]), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

On July 26, 2007, CARB adopted emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. This regulation aims to reduce emissions by the installation of diesel soot filters and encouraging the retirement, replacement, or repowering of older, dirtier engines with newer emission controlled models. Additionally, in 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). In April 2014, amendments to the Truck and Bus Regulation were approved by CARB to help ensure that the air quality benefits originally envisioned by the regulation will be achieved, by providing some additional compliance flexibility and options to vehicle owners (CARB, 2014). Refer to Section 4.2, *Air Quality* (see specifically section 4.2.2), of this EIR for additional details regarding these regulations. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

California Greenhouse Gas Reduction Targets

Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed EO S-3-05, which proclaimed that California was vulnerable to the impacts of climate change. It declares that increased temperatures could reduce snowpack in the Sierra Nevada Mountains; could further exacerbate California's air quality problems; and potentially cause a rise in sea levels. In an effort to avoid or reduce the impacts of climate change, EO S-3-05 called for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80% below 1990 levels by 2050. EOs are binding on state agencies only.

Executive Order B-30-15

On April 29, 2015, Governor Brown issued EO B-30-15, which established a new interim Statewide reduction target to reduce GHG emissions to 40% below 1990 levels by 2030, ordered all State agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets, and directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

Executive Order B-55-18

EO B-55-18 was signed by Governor Brown on September 10, 2018. The order establishes an additional Statewide policy to achieve carbon neutrality by 2045 and maintain net negative emissions thereafter. As per EO B-55-18, CARB is directed to work with relevant State agencies to develop a framework for implementation and accounting that tracks progress toward this goal and to ensure future Climate Change Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

California Global Warming Solutions Act of 2006

Assembly Bill 32

In 2006, the California State Legislature adopted AB 32 (codified in the California HSC, Division 25.5 – California Global Warming Solutions Act of 2006), which focused on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆ and represented the first enforceable statewide program to limit emissions of GHGs from all major industries with penalties for noncompliance. The law further required that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

Senate Bill 32

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, and both were signed by Governor Brown (Office of Governor Edmund G. Brown Jr., 2016). SB 32 and AB 197 amended HSC Division 25.5 and established a new climate pollution reduction target of 40% below 1990 levels by 2030 and included provisions to ensure the benefits of state climate policies reach into disadvantaged communities.

2008 Climate Change Scoping Plan

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (HSC Section 38561 (h)). CARB developed an AB 32 Scoping Plan that contains strategies to achieve the 2020 emissions cap (CARB, 2018). The initial scoping plan was approved in 2008, and contained a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives (CARB, 2018).

2014 Climate Change Scoping Plan Update

The first update to the Scoping Plan was approved by CARB in May 2014 and built upon the initial Scoping Plan with new strategies and recommendations (CARB, 2018). As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. CARB also updated the State’s projected 2020 emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy.

2017 Climate Change Scoping Plan

CARB adopted the 2017 Climate Change Scoping Plan at a public meeting held in December 2017 (CARB, 2017b). The 2017 Scoping Plan outlines the strategies the State will implement to achieve the 2030 GHG reduction target of 40% below 1990 levels by 2030 established by SB 32. The 2017 Scoping Plan is also intended to “substantially advance” toward the EO S-3-05 2050 climate goal to reduce GHG emissions by 80% below 1990 levels by 2050.

The 2017 Scoping Plan built on the Cap-and-Trade Regulation, the LCFS, improved vehicle, truck and freight movement emissions standards, increasing renewable energy goals, and adopted strategies to reduce methane emissions from agricultural and other wastes by using it to meet our energy needs. The 2017 Scoping Plan also comprehensively addressed GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The 2017 Scoping Plan considered a number of different alternatives to achieve the 2030 GHG reduction goal (CARB, 2017b).

CARB stated that the Scoping Plan Scenario ultimately adopted was “the best choice to achieve the State’s climate and clean air goals” (CARB, 2017b). Under the Scoping Plan Scenario, the majority of the reductions would result from continuation of the Cap-and-Trade regulation. Additional reductions are achieved from electricity sector standards (i.e., utility providers to supply 50% renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the LCFS, implementing the short-lived climate pollutant strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan.

Senate Bill 375

SB 375 was signed into law in 2008 and is intended to provide a means for achieving AB 32 GHG emissions target reduction goals from cars and light trucks through long-range regional growth strategies and transportation plans. SB 375 is directed toward California’s 18 Metropolitan Planning Organizations (MPOs). The San Diego Association of Governments (SANDAG) is San Diego County’s MPO. Under SB 375, each MPO is required to develop a “Sustainable Communities Strategy,” a newly required element of the Regional Transportation Plan (RTP). SB 375 does not take over local planning functions, and a Sustainable Community Strategy does not in any way supersede a General Plan, specific plan, or local zoning ordinance. Additionally, SB 375 does not require any consistency between the Sustainable Communities Strategy and these planning and development regulatory documents. However, the MPOs are

required to develop the Sustainable Communities Strategies through integrated land use and transportation planning and demonstrate an ability to attain the proposed reduction targets by 2020 and 2035.

Title 24, Part 6, California Code of Regulations

The CEC first adopted the Energy Efficiency Standards for Residential and Nonresidential Buildings in the California Code of Regulations, Title 24, Part 6 in 1978 in response to a legislative mandate to reduce energy consumption in the State. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically, usually every three years, to allow for the consideration and inclusion of new energy efficiency technologies and methods. Effective January 1, 2020, California adopted updated energy efficiency standards for residential and non-residential buildings as part of the 2019 Title 24 standards in order to reduce California's energy consumption.

Title 24, Part 11, California Code of Regulations

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to “improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality” (California Building Standards Commission, 2010). The CALGreen Code is updated periodically, usually every three years, to include new mandatory measures for residential and non-residential uses including energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The 2016 measures took effect on January 1, 2017. The most recent update is the 2019 CALGreen Code, which took effect on January 1, 2020 (California Building Standards Commission, 2020).

Renewables Portfolio Standard

SB 1078 (Chapter 516, Statutes of 2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20% of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, EO S-14-08 was signed, which expanded the RPS to 33% renewable power by 2020. Pursuant to EO S-21-09, CARB prepared regulations to supplement the RPS with a Renewable Energy Standard that would result in a total renewable energy requirement for utilities of 33% by 2020. On April 12, 2011, SB X1-2 was signed to increase California's RPS to 33% by 2020. SB 350 (Chapter 547, Statutes of 2015) further increased the RPS to 50% by 2030. The legislation also included interim targets of 40% by 2024 and 45% by 2027.

On September 10, 2018, Governor Jerry Brown signed SB 100, which further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44% of retail sales by December 31, 2024; 52% by December

31, 2027; and 60% by December 31, 2030. The measure also directed CARB to plan for 100% eligible renewable energy resources and zero-carbon resources by December 31, 2045.

Assembly Bill 341

In 2011, AB 341 established the policy goal of no less than 75% of solid waste generated be source reduced, recycled or composted by the year 2020.

Senate Bill 1383

In September 2016, Governor Jerry Brown signed into law SB 1383, which creates goals for short-lived climate pollutant (SLCP) reductions in various industry sectors. The SLCPs included under this bill – including methane, fluorinated gases, and black carbon – are GHGs that are much more potent than carbon dioxide and can have detrimental effects on human health and climate change. SB 1383 required CARB to adopt a strategy to reduce methane by 40%, hydrofluorocarbon gases by 40%, and anthropogenic black carbon by 50% below 2013 levels by 2030. The methane emission reduction goals include a 75% reduction in the level of statewide disposal of organic waste from 2014 levels by 2025. Pursuant to SB 1383, CARB adopted its *Short-Lived Climate Pollutant Reduction Strategy* in March 2017, which focuses on converting organic wastes into energy, reducing food wastes, reducing emissions from residential wood stoves, and accelerating the phase out of HFCs.

San Diego Forward: The Regional Plan

San Diego Association of Governments (SANDAG) is the federally designated MPO for San Diego County region and is responsible for transportation planning. On October 9, 2015, the SANDAG Board of Directors adopted San Diego Forward: The Regional Plan (Regional Plan) (SANDAG, 2015). This plan combines the Regional Comprehensive Plan (RCP) with the 2050 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), which was adopted in 2012. The Regional Plan identifies the five following strategies to move the San Diego region toward sustainability:

- Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.
- Protect the environment and help ensure the success of smart growth land use policies by preserving sensitive habitat, open space, cultural resources, and farmland.
- Invest in a transportation network that gives people transportation choices and reduces GHG.
- Address the housing needs of all economic segments of the population.
- Implement the Regional Plan through incentives and collaboration.

Local

The section below includes a summary of the city's ordinances, regulations, and planning policies applicable to the proposed project. Where provisions are required by law or ordinance (e.g., the Carlsbad Municipal Code) it is presumed that the proposed project would adhere to the requirements. Where policies or guidelines are provided (i.e., they are not specific regulatory requirements) consistency of the project with the policies identified are either described directly

within the individual regulatory setting section below or, if more detail is required, consistency is described further in the impact analysis that follows (Section 4.7.4, *Project Impact Analysis*).

City of Carlsbad General Plan

The most relevant element of the City's General Plan when considering GHG emissions is the Sustainability Element, which emphasizes sustainable development by decreasing automobile use and increasing active transportation. The Sustainability Element contains broad strategies and defines the City's commitment to GHG reduction.

The City of Carlsbad has considered sustainability a core value as part of the Carlsbad Community Vision since before the development of the current General Plan. The sustainability framework contained in the General Plan focuses on reducing the City's contribution to global climate change through GHG reduction; water conservation, recycling, and supply; green building; sustainable energy and energy security; and sustainable food. As of 2011, the City emitted approximately 705,744 MTCO₂e with Transportation being the largest sector (39%) (City of Carlsbad, 2015b). The following goals and policies are applicable:

Goals

Land Use and Community Design

- Goal 2-G.1 Maintain a land use program with amount, design and arrangement of varied uses that serve to protect and enhance the character and image of the city as expressed in the Carlsbad Community Vision, and balance development with preservation and enhancement of open space.
- Goal 2-G.2 Promote a diversity of compatible land uses throughout the city, to enable people to live close to job locations, adequate and convenient commercial services, and public support systems such as transit, parks, schools, and utilities.
- Goal 2-G.3 Promote infill development that makes efficient use of limited land supply, while ensuring compatibility and integration with existing uses. Ensure that infill properties develop with uses and development intensities supporting a cohesive development pattern.
- Goal 2-G.18 Ensure that new development fosters a sense of community and is designed with the focus on residents, including children, the disabled and the elderly, by providing: safe, pedestrian-friendly, tree-lined streets; walkways to common destinations such as schools, bikeways, trails, parks and stores; homes that exhibit visual diversity, pedestrian-scale and prominence to the street; central gathering places; and recreation amenities for a variety of age groups.

Mobility

- Goal 3-G.1 Keep Carlsbad moving with livable streets that provide a safe, balanced, cost-effective, multi-modal transportation system (vehicles, pedestrians, bikes, transit), accommodating the mobility needs of all community members, including children, the elderly and the disabled.
- Goal 3-G.2 Improve connectivity for residents, visitors and businesses.
- Goal 3-G.3 Provide inviting streetscapes that encourage walking and promote livable streets.

Open Space, Conservation, & Recreation

- Goal 4-G.1 Develop a balanced and integrated open space system reflecting a variety of considerations – resource conservation, production of resources, recreation, and aesthetic and community identity – and ensuring synergies between various open space components and capability with land use planning.

Sustainability

- Goal 9-G.3 Promote energy efficiency and conservation in the community.
- Goal 9-G.4 Reduce the City’s reliance on imported water

Policies

Community Character and Design

- Policy 2-P.46 Require new residential development to provide pedestrian and linkages, when feasible, which connect with nearby shopping centers, community centers, parks, schools, points of interest, major transportation corridors and the Carlsbad Trail System.

Pedestrian and Bicycle Movement

- Policy 3-P.32 Require developers to improve pedestrian and bicycle connectivity consistent with the city’s bicycle and pedestrian master plans and trails master planning efforts. In addition, new residential developments should demonstrate that a safe route to school and transit is provided to nearby schools and transit stations within a half mile walking distance.

Sustainable Energy

- Policy 9-P.12 Continue pursuit of sustainable energy sources.

City of Carlsbad Climate Action Plan

The City Climate Action Plan (CAP) sets a baseline for GHG emissions, forecasts future emissions, and establishes a long term strategy to reduce emissions. The CAP was prepared concurrently with the City’s General Plan and includes actions to carry out the General Plan’s goals and policies, consistent with the Community Vision articulated during Envision Carlsbad. The CAP is also correlated with the General Plan EIR, with the CAP GHG emissions reduction target synchronized with the EIR. Emissions reduction targets are established through 2035 and are achievable through enforceable measures, and monitoring and reporting processes (Climate Action Plan Checklist Consistency, 2019). These GHG reductions are consistent with the state’s goals to reduce GHG emissions to 1990 levels by 2020 and by 80% below 1990 levels by 2050 (City of Carlsbad, 2015a). For individual projects, consistency with the CAP is determined through compliance with CAP-implementing ordinances.

On January 13, 2020, the City Attorney’s office released a memorandum (as presented within the January 21, 2020 City Council Agenda materials) detailing that the vehicle miles traveled (VMT) calculation used in the CAP was based on an incorrect input resulting in lower GHG emissions reported in the inventory (City of Carlsbad 2020). The memorandum concluded that the emissions forecasts for 2020 and 2035 were no longer accurate and the City may not meet the GHG targets for those years. Further, it concluded that the CAP was no longer considered a qualified GHG reduction plan under CEQA Guidelines Section 15183.5 and could not be used to

tier off for determining significance of individual projects' GHG emissions. However, City ordinances adopted to implement the CAP continue to be in effect and projects would need to comply with all applicable ordinances.

The city is preparing an update to the CAP and it is anticipated that the city will have a qualified CAP prior to the Final EIR on this project. The applicant has prepared a stand-alone GHG analysis for purposes of determining the significance level of the project's GHG emissions as they relate to CEQA. It is anticipated that the new qualified CAP will not require any additional GHG reduction measures for the project, and that the project's GHG analysis will be sufficient to demonstrate consistency with the new CAP. This is because the project's GHG analysis relies on meeting a quantitative metric derived from data anticipated to be used in the updated CAP. In addition, the project would comply with all applicable City ordinances, including those adopted to implement the CAP.

Carlsbad Municipal Code Chapters 18.21 and 18.30

On March 12, 2019, the City Council for City of Carlsbad adopted Ordinance No. CS-347 to amend the Carlsbad Municipal Code (CMC) Chapters 18.21 and 18.30 regarding requirements for energy efficiency measures and photovoltaic systems in new or existing high-rise residential (four habitable stories or more) and non-residential buildings, and water heating systems in new non-residential buildings (City of Carlsbad, 2019a). If residential parking is available, 10% of the total number of parking spaces on a building site provided for all types of parking facilities shall be electric vehicle charging spaces (EV spaces) capable of supporting installed and future electric vehicle supply equipment (EVSE). When multiple EV spaces are required, 50%, but in no case less than one, shall be EVSE Installed spaces. The remainder of the required EV spaces may be EVSE Installed, EVSE Ready, or EVSE Capable spaces.

Consistent with CMC Section 18.30.130, the photovoltaic system may be sized based on gross floor area of 15 kilowatt direct current (kWdc) per 10,000 square feet for buildings greater than or equal to 10,000 square feet or based on time-dependent valuation that will offset 80% of the building's time-dependent valuation energy on an annual basis unless exempted via provisions in CMC 18.30.130(b). The exemptions allow the Building Official to waive or reduce, by the maximum extent necessary, the provisions of CMC 18.30.130 if the Official determines there are sufficient practical challenges to make satisfaction of the requirements infeasible or through the use of alternate on-site renewable generation systems such as wind energy systems. For residential buildings serving multiple dwelling units, a central water-heating system that includes a gas or propane water heating system and a recirculation system with an automatic controller for the pump operation are required (City of Carlsbad, 2019b).

4.7.3 Thresholds and Methodology

Thresholds

A significant impact would occur to GHG emissions if the proposed project would:

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

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

Methodology

The project's GHG emissions were calculated for both construction and operation using the California Emission Estimator Model (CalEEMod 2016.3.2). Emission sources included off-road heavy construction equipment and vehicles, on-road vehicles, area sources (landscaping maintenance equipment), energy (building electricity and natural gas usage), water and wastewater, solid waste, and vegetation. It is assumed that construction would begin in June 2020 and be completed in the fall of 2022. The first full year of operation, as modeled, is anticipated to be 2023. (Helix, 2020).

Several project design features have been included in the project's GHG analysis including: a solar photovoltaic system of 386 kW, a 20 percent reduction in water use, electric vehicle charging for 10% of the total parking spaces per the 2019 CalGreen Code, and a transportation demand management (TDM) plan to reduce vehicle miles travelled associated with the project by 10 to 15 percent. Development of the project would result in a one-time loss of 4.4 acres of vegetation, but would additionally provide 153 new trees as part of the landscape plan (Helix, 2020). The model conducted as part of the GHG analysis also assumes compliance with other legislative rules and regulations such as AB 341 and CALGreen (Helix, 2020).

The project's emissions were compared to the City-specific efficiency metric threshold, which was established in the City's 2012 GHG inventory (Helix, 2020). The efficiency metric threshold was calculated using the project emissions divided by the service population (residents plus employees) to achieve an overall GHG efficiency of the project relative to regulatory GHG reduction goals (Helix, 2020). An efficiency metric threshold for 2023 was interpolated using a 5.2% reduction per year between the 2020 and 2030 GHG emissions targets. Achievement of the 2023 efficiency metric threshold would mean consistency with the State's GHG reduction targets per SB 32 and the State's Scoping Plan and progress to the 2050 targets per EO S-3-05. Therefore, the project's 2023 efficiency metric threshold is 4.03 metric tons of carbon dioxide equivalent per service population (MTCO_{2e}/SP) per year (Helix, 2020).

4.7.4 Project Impact Analysis

Impact 4.7-1: Would the proposed project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

As shown in **Table 4.7-3, *Estimated Construction GHG Emissions***, construction related GHG emissions for the project would be 875 MTCO_{2e} (Helix, 2020). Construction emissions are amortized over 30 years and added to operational emissions per Association of Environmental Professionals (AEP) and SCAQMD guidance (AEP, 2010; SCAQMD 2009). The total operational GHG emissions would be 2,126 MTCO_{2e} for the proposed project as shown in **Table 4.7-4, *Operational GHG Emissions***. The project incorporates mandated legislative requirements such as AB341 and CalGreen.

**TABLE 4.7-3
 ESTIMATED CONSTRUCTION GHG EMISSIONS**

Phase	Emissions (MTCO₂e)
West Site Demolition	39
Combined Site Preparation	11
Combined Grading	51
Combined Underground Utilities	27
East Site Building Construction	271
West Site Building Construction	414
East Site Paving	11
East Site Architectural Coating	4
West Site Paving	18
West Site Architectural Coating	9
One-time Loss of Sequestered Carbon	20
TOTAL¹	875
Amortized Construction Emissions ²	29

SOURCE: Helix, 2020.

¹ The total presented is the sum of the unrounded values.

² Construction emissions are amortized over 30 years in accordance with AEP and SCAQMD recommendations.

MT=metric tons; CO₂e=carbon dioxide equivalent

**TABLE 4.7-4
 OPERATIONAL GHG EMISSIONS**

Emission Sources	Proposed Project (MTCO₂e)
Area Sources	4
Energy Sources	164
Vehicular (Mobile) Sources	1,782
Solid Waste Sources	57
Water Sources	94
Operational Subtotal	2,101
Construction (amortized over 30 years)	29
Carbon Sequestration	-4
TOTAL PROJECT EMISSIONS	2,126

As presented in **Table 4.7-4**, total project GHG emissions would be 2,126 MTCO₂e for the proposed project. Full calculations are included in Appendix F.2 (Helix, 2020). Project emissions are compared to the City’s efficiency metric threshold for the buildout year of 2023. As described in Section 4.7.3, *Thresholds and Methodology*, the City’s efficiency metric for 2023 is linearly extrapolated between 2020 and 2030 as shown in Appendix F.2 (Helix, 2020). The result is an efficiency metric of 4.03 MTCO₂e/SP per year. Using the average household size based on the City’s Growth Management Plan of 2.36 persons per unit, the project’s service population is estimated to be 776 persons (MBI, 2019b). Therefore, the project’s

efficiency metric is 2.74 MTCO₂e/SP per year, which is less than the 2023 efficiency metric threshold established for the City in compliance with SB 32. For these reasons, impacts related to GHG emissions would be **less than significant**.

Impact 4.7-2: Would the proposed project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

A significant impact would occur if the proposed project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions. Consistency is evaluated with regard to 2019 Title 24 Standards, SANDAG’s San Diego Forward: Regional Plan, and the City of Carlsbad General Plan.

As part of project design, the project would meet all requirements in the CALGreen Code for new construction of residential buildings, including a 20% reduction in water and wastewater, 10% electric vehicle charging spaces, and installation of a 386 kW PV system. In addition, the project would comply with all legislative and regulatory requirements such as AB 341 to reduce, recycle, or compost solid waste by 75% by utilizing waste collection services that are approved in the City and that meet the applicable requirements for waste diversion, recycling, and/or composting. Verification of increased water and energy efficiencies will be demonstrated based on a performance approach, using a CEC approved water and energy compliance software program, in the Title 24 Compliance Reports provided by the project applicant to the City prior to issuance of a building permit (Helix, 2020).

San Diego Forward: The Regional Plan

The SANDAG Regional Plan identifies five main strategies to improve sustainability. The proposed project would be consistent with the SANDAG Regional Plan, as shown below in **Table 4.7-5, Project Consistency with the SANDAG Regional Plan**.

**TABLE 4.7-5
 PROJECT CONSISTENCY WITH THE SANDAG REGIONAL PLAN**

Sustainability Strategy	Consistency
Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.	Consistent: The project site is located within the Urban Area Transit Strategy Boundary, according to the Smart Growth Concept Map, and near other transportation infrastructure (e.g., Aviara Parkway, Laurel Tree Lane, McClellan-Palomar Airport, Interstate-5, and North County Transit District (NCTD) BREEZE Routes 444 and 445) and jobs. The project would be focus housing growth in an infill development with existing and planned infrastructure.
Protect the environment and help ensure the success of smart growth land use policies by preserving sensitive habitat, open space, cultural resources, and farmland.	Consistent: The proposed project would build high-density housing near transit. The project site is zoned for high-density urban uses so it would not cause development on any sites used for open space, farmland, or cultural resources. Additionally, a 50-foot native vegetation buffer would separate the project from the Encinas Creek riparian corridor.
Invest in a transportation network that gives people transportation choices and reduces greenhouse gas emissions.	Consistent: The proposed project would build high-density housing near transit. It would also maintain existing sidewalks and bikeways, develop a new sidewalk, implement a TDM program, and pay Transportation Impact Fees for transit improvements (MBI, 2019a).

Sustainability Strategy	Consistency
Address the housing needs of all economic segments of the population	Consistent: The proposed project would include 82 affordable units, available to residents with incomes from 90% of the Area Median Income (AMI) to 30% of the AMI.
Implement the Regional Plan through incentives and collaboration.	Consistent: The proposed project would develop affordable housing and high-density housing near transit.

City of Carlsbad General Plan

The City of Carlsbad General Plan includes strategies such as mixed-use development, higher-density infill development, integrated transportation and land use planning, promotion of bicycle and pedestrian movements, and promotion of TDM. It also includes goals and policies to promote energy efficiency, waste reduction, and resource conservation and recycling (Helix, 2020). The proposed project would be consistent with these particular goals and policies of the General Plan that are related to sustainability and GHG emissions, as shown below in **Table 4.7-6, *Project Consistency with the City of Carlsbad General Plan***.

As documented in Table 4.7-5 and Table 4.7-6, the proposed project would not conflict with an applicable plan, policy or regulation pertaining to reducing GHG emissions. For these reasons, potential impacts related to conflicts with applicable GHG-related plans, policies and regulations would be **less than significant**.

**TABLE 4.7-6
 PROJECT CONSISTENCY WITH THE CITY OF CARLSBAD GENERAL PLAN**

Goal or Policy	Consistency
Goal 2-G.1: Maintain a land use program with amount, design and arrangement of varied uses that serve to protect and enhance the character and image of the city as expressed in the Carlsbad Community Vision, and balance development with preservation and enhancement of open space.	Consistent: The project site is zoned for high-density urban uses so it would not cause development on any sites used for open space. It would prevent urban sprawl because it is an infill development close to transit. The project would enhance the character and image of the city by providing high quality architecture, street trees, landscaping, open space, and a market rate and affordable apartment community. Additionally, a 50-foot native vegetation buffer would separate the project from the Encinas Creek riparian corridor. The project would include 82 affordable units (or 25% of all units), which would exceed the requirements of Carlsbad Municipal Code CMC Chapter 21.85 and Planning Commission Resolution No. 7114. The housing would help the City meet its SANDAG identified share in the regional housing needs assessment (RHNA).
Goal 2-G.2: Promote a diversity of compatible land uses throughout the city, to enable people to live close to job locations, adequate and convenient commercial services, and public support systems such as transit, parks, schools, and utilities.	Consistent: The project site is located within the Urban Area Transit Strategy Boundary and near other transportation infrastructure and jobs. The project is in close proximity to retail, utilities, services, transit, and employment opportunities. It is an infill development that is near other existing residential development to the south of the project site.
Goal 2-G.3: Promote infill development that makes efficient use of limited land supply, while ensuring compatibility and integration with existing uses. Ensure that infill properties develop with uses and development intensities supporting a cohesive development pattern.	Consistent: See response to Goal 2-G.2.

Goal or Policy	Consistency
<p>Goal 2-G.18: Ensure that new development fosters a sense of community and is designed with the focus on residents, including children, the disabled and the elderly, by providing: safe, pedestrian-friendly, tree-lined streets; walkways to common destinations such as schools, bikeways, trails, parks and stores; homes that exhibit visual diversity, pedestrian-scale and prominence to the street; central gathering places; and recreation amenities for a variety of age groups.</p>	<p>Consistent: The project would foster a sense of community since it is designed with the focus on residents, provides pedestrian-connectivity to common destinations, and exhibits visual diversity and pedestrian scale. The project would include multiple apartment amenities, extensive landscaping, street trees, sidewalks, bike lanes, and high quality architecture design.</p>
<p>Policy 2-P.46: Require new residential development to provide pedestrian and linkages, when feasible, which connect with nearby shopping centers, community centers, parks, schools, points of interest, major transportation corridors and the Carlsbad Trail System.</p>	<p>Consistent: See response to Goal 2-G.18.</p>
<p>Goal 3-G.1: Keep Carlsbad moving with livable streets that provide a safe, balanced, cost-effective, multi-modal transportation system (vehicles, pedestrians, bikes, transit), accommodating the mobility needs of all community members, including children, the elderly and the disabled.</p>	<p>Consistent: See response to Goal 2-G.18.</p>
<p>Goal 3-G.2: Improve connectivity for residents, visitors and businesses.</p>	<p>Consistent: See response to Goal 2-G.18.</p>
<p>Goal 3-G.3: Provide inviting streetscapes that encourage walking and promote livable streets.</p>	<p>Consistent: See response to Goal 2-G.18.</p>
<p>Policy 3.P.32: Require developers to improve pedestrian and bicycle connectivity consistent with the city's bicycle and pedestrian master plans and trails master planning efforts. In addition, new residential developments should demonstrate that a safe route to school and transit is provided to nearby schools and transit stations within a half mile walking distance.</p>	<p>Consistent: Existing sidewalks are located along the project site's Aviara Parkway frontages, and an existing Class II bike lane is located along both sides of Aviara Parkway. A new sidewalk would be provided along the East Parcel's Laurel Tree Lane frontage. Public transit (e.g., NCTD BREEZE Routes 444 and 445) is located along Palomar Airport Road approximately 660 feet (0.015-mile) north of the project site. A safe route to existing transit routes on Palomar Airport Road is provided by the existing sidewalks along Aviara Parkway. There are no schools within a half mile walk to the project site. The school nearest to any component of the project site is the Pacific Rim Elementary School (1100 Camino De Las Ondas) located approximately 0.72 miles south of the site.</p>
<p>Goal 4-G.1: Develop a balanced and integrated open space system reflecting a variety of considerations – resource conservation, production of resources, recreation, and aesthetic and community identity – and ensuring synergies between various open space components and capability with land use planning.</p>	<p>Consistent: See response to Goal 2-G.1.</p>
<p>Goal 9-G.3: Promote energy efficiency and conservation in the community.</p>	<p>Consistent: The proposed project would implement CALGreen Building Code sustainability and efficiency features.</p>
<p>Goal 9-G.4: Reduce the City's reliance on imported water.</p>	<p>Consistent: The project will implement water conservation strategies to reduce water usage consistent with CALGreen requirements.</p>
<p>Policy 9-P.12: Continue pursuit of sustainable energy sources.</p>	<p>Consistent: The project will install a 386 kWdc PV system to supply residential electricity through solar panels.</p>

4.7.5 Level of Significance before Mitigation

Implementation of the proposed project would not result in a significant impact on GHG/climate change; therefore, no mitigation measures are proposed.

4.7.6 Environmental Mitigation Measures

No mitigation measures are proposed.

4.7.7 Level of Significance after Mitigation

No significant impacts on GHG/climate change has been identified.

4.8 Hazards and Hazardous Materials

This section provides an evaluation of the proposed project's impacts related to hazards and hazardous materials within the project site and vicinity. The analysis of hazardous materials included in this section was developed based on publicly available information from the State Water Resources Control Board (SWRCB) and California Department of Toxic Substances Control (DTSC). In addition, a Phase I and a subsequent Phase II Environmental Site Assessment were prepared by Arcadis, Incorporated (Arcadis, 2016a; Arcadis, 2016b), which provided information regarding the potential presence of contamination in subsurface materials on the project site (see Appendices G.1 and G.2, for the Phase I and Phase II Environmental Site Assessments, respectively). Land use compatibility and policy considerations regarding the McClellan-Palomar Airport are addressed in Section 4.10, *Land Use and Planning*. An analysis of the wildfire implications of resulting from development of the proposed project is found in Section 4.16, *Wildfire*.

4.8.1 Existing Conditions

Definitions and Background

Hazardous Materials

A hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (State Health and Safety Code Chapter 6.95, Section 25501(o)). The term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases).

Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been spent, discarded, discharged, spilled, contaminated, or are being stored until they can be disposed of properly (Title 22 California Code of Regulations [CCR] Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific criteria established in Sections 66261.20 through 66261.24 of the CCR Title 22. Hazardous substances are regulated by multiple agencies, as described in the Regulatory Setting below, and cleanup requirements of hazardous releases are determined on a case-by-case basis according to the agency (e.g., DTSC or SWRCB) with lead jurisdiction over a contaminated site.

Receptors and Exposure

The sensitivity of potential receptors in the areas of known or potential hazardous materials contamination is dependent on several factors, the primary factor being the potential pathway for human exposure. Exposure pathways include external exposure, inhalation, and ingestion of contaminated soil, air, water, or food. The magnitude, frequency, and duration of human exposure can cause a variety of health effects, from short-term acute symptoms to long-term chronic

effects. Potential health effects from exposure can be evaluated in a health risk assessment (HRA). The principal elements of HRAs typically include:

- Evaluation of the fate and transport processes for hazardous materials at a given site
- Identification of potential exposure pathways
- Calculation of representative chemical concentrations
- Identification of potential exposure scenarios
- Estimation of potential chemical uptake

Sensitive receptors in the vicinity of the project site, such as schools and daycare centers, are identified later in this section.

Hazardous Building Materials Associated with Demolition and Renovation

Because of the age of some buildings and structures within the project site, the potential exists for the structures to contain hazardous building materials (Arcadis, 2016a). Older buildings and structures can contain building materials that include hazardous components such as lead-based paint (LBP), asbestos-containing materials (ACMs), mercury, and polychlorinated biphenyls (PCBs).

Among its numerous uses and sources, lead can be found in paint, water pipes, solder in plumbing systems, and in soils around buildings and structures painted with LBP. For example, old peeling paint can contaminate surface soil, and exposure to residual lead can have adverse health effects especially in children. LBP was phased out in the United States beginning with the passage of the Lead-Based Paint Poisoning Prevention Act in 1971. Prior to the United States Environmental Protection Agency (EPA) ban in 1978, LBP was commonly used on interior and exterior surfaces of buildings. Structures built prior to 1978 may have LBP and some paints manufactured after 1978 for industrial or marine uses legally contain more than 0.06% lead. According to the Phase I report, the West Parcel includes improvements that may contain LBP (Arcadis, 2016a). Exposure to lead can result in the accumulation of lead in the blood, soft tissues, and bones. Children are particularly susceptible to potential lead-related health problems because it is easily absorbed into developing systems and organs.

Asbestos, a naturally occurring fibrous material, was used as a fireproofing and insulating agent in building construction before such uses were terminated due to liability concerns in the late 1970s. From 1973 through 1990, several laws were passed banning the manufacture and use of ACM (EPA, 2018). The demolition of structures with ACM or disturbance of asbestos pipe can result in airborne fibers. Inhalation of the tiny asbestos fibers can lead to lung disease. Structures that predate 1981, and structural materials installed before 1981, are presumed to potentially contain asbestos. Because it was widely used prior to the discovery of its health effects, asbestos can be found in a variety of building materials and components such as insulation, walls and ceilings, floor tiles, and pipe insulation. Friable (easily crumbled) materials are particularly hazardous because inhalation of airborne fibers is the primary mode of asbestos entry into the body. Non-friable asbestos is generally bound to other materials such that it does not become airborne under normal conditions. Non-friable asbestos and encapsulated friable asbestos do not

pose substantial health risks. Asbestos exposure is a human respiratory hazard. Asbestos-related health problems include lung cancer and asbestosis. Any activity that involves cutting, grinding, or drilling during building renovation or demolition or relocation of underground utilities could release friable asbestos fibers unless proper precautions are taken. Inhalation of airborne fibers is the primary mode of asbestos entry into the body, making friable materials the greatest potential health risk.

The Phase I Environmental Site Assessment conducted for the project site concluded that the current structures on the site could contain ACMs (Arcadis, 2016a). In addition, the Phase II Environmental Site Assessment included evaluation of a discharge pipe located near 1205 Aviara Parkway (West Parcel) and confirmed that the pipe was wrapped in ACMs that would require special handling and disposal as part of any redevelopment activities (Arcadis, 2016b).

Spent fluorescent light tubes commonly contain mercury vapors. In February 2004, regulations took effect in California that classified all fluorescent lamps and tubes as hazardous waste. When these lamps or tubes are broken, mercury is released to the environment. Mercury can be absorbed through the lungs into the bloodstream, and can be washed by rain water into waterways. Mercury switches may also be present in some buildings including those on the project site. A mercury switch (also known as a mercury tilt switch) is a switch that opens and closes an electrical circuit through a small amount of liquid mercury.

PCBs are organic oils that were formerly used primarily as insulators in many types of electrical equipment such as transformers and capacitors. After PCBs were determined to be carcinogenic in the mid-to-late 1970s, the EPA banned PCB use in most new equipment and began a program to phase out certain existing PCB-containing equipment (EPA, 2019). Fluorescent lighting ballasts manufactured after January 1, 1978, do not contain PCBs and are required to have a label clearly stating that PCBs are not present in the unit. PCBs are highly persistent in the environment, and exposure to PCBs has been demonstrated to cause cancer, as well as a variety of other adverse health effects on the immune system, reproductive system, nervous system, and endocrine system. According to the Phase I report, no equipment on-site that is known to contain PCBs was identified but one pad-mounted transformer located on the south property line and several pole-mounted transformers on or in proximity to the site were noted. (Arcadis, 2016a). The transformers were all reportedly in good condition with no evidence of seepage or releases. The transformers are the responsibility of San Diego Gas & Electric.

Project Site Soil and Groundwater Contamination

Many commercial and light industrial businesses, as well as some agricultural practices, use materials and generate wastes that are considered hazardous by federal and state standards. Such businesses and practices, which include automobile service, industrial manufacturing, and businesses which include bulk storage of fuels, are required to contain, manage, and transport their hazardous materials in conformance with established state regulations to ensure hazardous materials are not released to the environment to become a health hazard.

Underground storage tanks (USTs), in particular, are a common contamination source for soil and groundwater in urban areas, and are also known to be found on sites historically used for

agricultural purposes. Until the mid-1980s, most USTs were made of single-walled bare steel, which can corrode over time and result in leakage. Faulty installation or maintenance procedures can also lead to UST leakage, as well as to potential releases associated with spills. Recently revised UST regulations have significantly reduced the incidents of leakage and consequential soil and groundwater contamination from new UST systems. However, there are still some older UST systems that remain in service, and many sites contaminated by leaking USTs in the past are still under investigation and undergoing clean-up. Similarly, spills resulting from poor maintenance or improper installation associated with aboveground storage tanks (ASTs) can result in localized, shallow soil contamination and in some cases groundwater contamination. USTs installed prior to the mid-1980's that have leaked, as well as improperly installed USTs and ASTs that have resulted in fuel spills, can present contamination issues for both soil and groundwater.

The Phase I Environmental Site Assessment reviewed records to establish a history of hazardous materials uses at the site and vicinity to determine if there were any recognized environmental conditions (RECs).¹ The report found the following RECs that may indicate the presence of hazardous materials or wastes in the subsurface at the site (Arcadis, 2016a):

- Prior to the construction of the current structures, land use of the site included agriculture. As a result, there is potential for residual pesticides, herbicides, and/or fertilizers to be present in shallow soils.
- A previous remedial action was implemented at 1205 Aviara Parkway (West Parcel) where soils containing petroleum hydrocarbons were removed from five different locations. The excavations were in the northwest corner of the site where reportedly a concrete pad supported three ASTs used for fuel storage. The ASTs were removed from the site approximately 3 to 4 years prior to the 2016 report.
- Condensate from refrigeration equipment was reportedly discharged to the rear of 1205 Aviara Parkway (West Parcel) and was routed through a soil ditch to Encinas Creek north of the site. A sheen was observed on the water surface although an interview with a site contractor claimed the condensate contained only water and dust from the atmosphere. Regardless, in the Phase I Environmental Site Assessment, Arcadis recommended collecting shallow soil samples along the length of the ditch to confirm. Samples were taken during the Phase II Environmental Site Assessment and indicated negligible total petroleum hydrocarbons in the heavy end range, which do not trigger regulatory oversight or require removal.
- Reportedly, a septic tank of unknown size is located beneath or near the overhang in front of the loading dock of the West Parcel. The contents of the septic tank are pumped to the municipal sewer main in Aviara Parkway and thus no leach field is associated with the tank. The tank has been in use over 20 years and, while currently only domestic water is discharged to the tank, past practices are unknown.

¹ A REC is defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not RECs.

The purpose of the subsequent Phase II Environmental Site Assessment was to collect soil samples to further evaluate whether any of the afore-mentioned RECs have actually resulted in the presence of contaminants in the subsurface. The Phase II findings determined that no volatile organic compounds, CAM-17 metals, total petroleum hydrocarbons (TPH), organochlorine pesticides, and chlorinated herbicides were identified in the soil at concentrations exceeding their respective EPA regional screening levels at either of the parcels within the project site (Arcadis, 2016b).² Low-level detections of TPH in the heavy oil range were detected at multiple boring locations. No other analytes were identified in the soil at the project site that would affect redevelopment.

Schools and Daycare Centers

The school nearest to any component of the project site is the Pacific Rim Elementary School (1100 Camino De Las Ondas) located approximately 0.55 miles south of the site. The daycare closest to the project site is the MAAC Day Care (1307 Laurel Tree Lane) at the Laurel Tree apartments located approximately 285 feet south of the East Parcel. In addition, the Poinsettia KinderCare (1200 Plum Tree Road), which is approximately 0.37 miles southwest of the site, is also considered a sensitive receptor.

4.8.2 Regulatory Setting

When provisions are requirements (e.g., code, regulation, or ordinance), it is assumed these regulatory requirements would be adhered to with project implementation. For example, it is assumed that all requirements of the Carlsbad Municipal Code would be adhered to. In addition, it is also assumed that state and federal regulations, codes, and laws would be adhered to, both as they apply to development of the proposed project and related project activities.

Federal

The primary federal agencies with responsibility for hazards and hazardous materials management include the EPA, U.S. Department of Labor Occupational Safety and Health Administration (Fed/OSHA), and U.S. Department of Transportation (DOT). Federal laws, regulations, and responsible agencies are summarized in **Table 4.8-1, *Federal Laws and Regulations Related to Hazardous Materials Management***. These federal regulations provide an overall context for the consideration of site-specific issues at the project site. However, as noted above, it is assumed that all applicable codes and regulations would be adhered to with development of the proposed project.

² CAM 17 metals refers to the CCR Title 22, California Assessment Manual 17, which is the standard for the analysis of metals in soils and water.

**TABLE 4.8-1
 FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT**

Classification	Federal Law or Responsible Federal Agency	Description
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, the EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from "cradle to grave."
	Hazardous and Solid Waste Act	Amended RCRA in 1984, affirming and extending the "cradle to grave" system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
	Toxic Substances Control Act	Code of Federal Regulations Title 40 Chapter 1, Subchapter R – Toxic Substances Control Act – Part 761 PCBs – covers the identification and sampling requirements for PCBs for disposal purposes.
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA))	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Materials Transportation	US DOT	DOT has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation except packages shipped by mail (49 CFR).
	US Postal Service (USPS)	USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act (OSHA) of 1970	Fed/OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 CFR).
Structural and Building Components (LBP, PCBs, and asbestos)	Toxic Substances Control Act	Regulates the use and management of PCBs in electrical equipment, and sets forth detailed safeguards to be followed during the disposal of such items.
	EPA	The EPA monitors and regulates hazardous materials used in structural and building components and their effects on human health.

State and local agencies often have either parallel or more stringent rules than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of any delegated authority are discussed under either the state or local agency section.

State

The following state programs and regulations provide an overall context for the consideration of site-specific issues at the project site. However, as previously noted, it is assumed that all applicable codes and regulations would be adhered to with development of the proposed project.

California Environmental Protection Agency and Unified Program

California's Secretary for Environmental Protection has established a unified hazardous waste and hazardous materials management regulatory program (Unified Program) as required by Senate Bill 1082 (1993).

The California Environmental Protection Agency (Cal/EPA) oversees the implementation of the Unified Program. The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspection and enforcement activities of six environmental and emergency response programs. The state agencies responsible for these programs set the standards for their program while local governments implement the standards.

The Unified Program is implemented at the local level by 86 government agencies certified by the Secretary of Cal/EPA. These Certified Unified Program Agencies (CUPAs) have typically been established as a function of a local environment health or fire agency. Some CUPAs also have contractual agreements with one or more other local agencies called "participating agencies (PAs)," which implement one or more program elements, under the oversight of the CUPA.

The state agency partners involved in the Unified Program have the responsibility of setting program element standards, working with Cal/EPA on ensuring program consistency and providing technical assistance to the CUPAs and PAs. The following state agencies are involved with the Unified Program:

- **California Environmental Protection Agency.** The Secretary of the Cal/EPA is directly responsible for coordinating the administration of the Unified Program. The Secretary certified Unified Program Agencies. The Secretary has certified 86 CUPAs to date. These 86 CUPAs carry out the responsibilities previously handled by approximately 1,300 state and local agencies.
- **Department of Toxic Substances Control.** The DTSC provides technical assistance and evaluation for the hazardous waste generator program including on-site treatment (tiered permitting).
- **Governor's Office of Emergency Services.** The Governor's Office of Emergency Services (OES) is responsible for providing technical assistance and evaluation of the Hazardous Material Release Response Plan (Business Plan) Program, the California Accidental Release Response Plan Programs, and carrying out FEMA requirements to prepare the State Multi-Hazard Mitigation Plan also known as the State Hazard Mitigation Program.
- **State Water Resources Control Board.** The SWRCB provides technical assistance and evaluation for the UST program.

Hazardous Waste Control Act

The hazardous waste management program enforced by DTSC was created by the Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.), which is implemented by regulations described in Title 22 of the CCR. This act implements the RCRA "cradle-to-grave" waste management system in California but is more stringent in its regulation of non-RCRA wastes, spent lubricating oil, small-quantity generators, transportation and permitting requirements, as well as in its penalties for violations. The act also exceeds federal

requirements by mandating the recycling of certain wastes, requiring certain generators to document a hazardous waste source reduction plan, requiring permitting for federally exempt treatment of hazardous wastes by generators, and implementing stricter regulation of hazardous waste facilities.

California Department of Industrial Relations, Division of Occupational Safety and Health Administration

The California Department of Industrial Relations, Division of Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state. Cal/OSHA standards are more stringent than Fed/OSHA regulations, and are presented in Title 8 of the CCR. Standards for workers dealing with hazardous materials include practices for all industries (General Industry Safety Orders); specific practices are described for construction and hazardous waste operations and emergency response. Cal/OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

California Highway Patrol and California Department of Transportation

The California Highway Patrol and Department of Transportation (Caltrans) are the enforcement agencies responsible for hazardous materials transportation regulations. Hazardous materials and waste transporters are responsible for complying with all applicable packaging, labeling, and shipping regulations. California Vehicle Code Section 31303 regulates the transport of hazardous materials.

State Water Resources Control Board

The SWRCB has primary responsibility to protect water quality and supply through their respective Regional Water Quality Control Boards (RWQCBs). As described in Section 4.9, *Hydrology and Water Quality*, RWQCBs are authorized by the Porter-Cologne Water Quality Control Act of 1969 to protect the waters of the state. The RWQCBs provide oversight for sites where the quality of groundwater or surface waters is threatened. Extraction and disposal of contaminated groundwater due to investigation/remediation activities or due to dewatering during construction require a permit from the RWQCBs if the water were discharged to storm drains, surface water, or land.

Title 23, Chapter 15, of the California Code of Regulations requires that non-hazardous liquid (greater than 42 gallons) or solid (greater than 10 cubic yards) waste must be reported to the RWQCB. Domestic wastewater and refuse discharges are regulated under the Waste Discharge Program by the RWQCB.

Regional

The following regional rules and regulations provide an overall context for the consideration of site-specific issues at the project site. However, as noted above, it is assumed that all applicable rules and regulations would be adhered to with development of the proposed project.

San Diego Air Quality Pollution Control District and Rule 1206

The San Diego Air Pollution Control District (APCD) is the local agency responsible for enforcing the rules and regulations for asbestos removal and demolition operations. Asbestos is a carcinogen and is categorized as a hazardous air pollutant by the EPA. Rule 1206, adopted by the APCD on November 15, 2017, establishes survey, notification, and work practice requirements to prevent asbestos emissions from emanating during building renovation and demolition activities.

San Diego County Multi-Jurisdictional Hazard Mitigation Plan

Long-term prevention, mitigation efforts and risk-based preparedness related to specific hazards within the County are addressed in the 2017 San Diego County Multi-Jurisdictional Hazard Mitigation Plan (HAZMIT Plan). The HAZMIT Plan identifies specific risks for San Diego County and provides methods to help minimize damage caused by natural and manmade disasters. The final list of hazards profiled for San Diego County was determined as wildfire/structure fire, flood, coastal storms/erosion/tsunami, earthquake/liquefaction, rain-induced landslide, dam failure, hazardous materials incidents, nuclear materials release, and terrorism. The County of San Diego Office of Emergency Services (County of San Diego OES) is responsible for coordinating with local jurisdictions and PAs to monitor, evaluate, and update the HAZMIT Plan as necessary. The HAZMIT Plan for San Diego County was prepared with input from County residents, responsible officials, the San Diego County Water Authority, the Alpine and Rancho Santa Fe Fire Protection Districts, the Padre Dam Municipal Water District, the San Diego Foundation, International Council for Local Environmental Initiatives (ICLEI), the Governor's OES, and FEMA.

County of San Diego Health Hazardous Materials Division

As described above as part of the Unified Program, the CUPA is the agency responsible for the implementation and regulation of the Unified Program. The County of San Diego, Department of Environmental Health (DEH) has been the CUPA for San Diego County since 1996. All inspectors in the CUPA Program are trained Environmental Health Specialists who take part in a continuous education program to ensure consistency and uniformity during inspections.

The goal of the Hazardous Materials Division (HMD) is to protect human health and the environment by ensuring that hazardous materials, hazardous waste, medical waste and underground storage tanks are properly managed. To accomplish this goal, the HMD regulates facilities that:

- Handle or store Hazardous Materials
- Are part of the California Accidental Release Prevention Program
- Generate or treat Hazardous Wastes
- Generate or treat Medical Waste
- Store at least 1320 gallons of Aboveground Petroleum
- Own or operate USTs (<https://www.sandiegocounty.gov/content/sdc/deh/hazmat/ust.html> - par_title)

Local

The section below includes a summary of the city's policies and codes applicable to the proposed project. Where provisions are required by ordinance or code (e.g., the CMC) it is presumed that the proposed project would adhere to the requirements. Where policies or guidelines are provided (i.e., they are not specific regulatory requirements) consistency of the project with the policies identified are described directly within the individual regulatory setting section herein.

City of Carlsbad General Plan

The city's General Plan contains goals and policies that address hazards and hazardous materials in the city. Specifically, the General Plan policies summarized in this section are related to hazards and hazardous materials. **Table 4.10-2, *General Plan Consistency Determination Summary*** (provided in Section 4.10.4, *Project Impact Analysis* of the Land Use and Planning section) provides a summary of the applicable General Plan policies, including those for geology and soils, and a project consistency discussion for each. The specific policies listed in this section are addressed in the Table 4.10-2 consistency analysis.

Policies

Soils and Hazardous Materials

- 6-P.21 Coordinate with the County of San Diego and use the San Diego County Multi-Jurisdictional Hazard Mitigation Plan as a guide for implementing actions to reduce hazardous waste impacts.
- 6-P.23 Regulate development on sites with known contamination of soil and groundwater to ensure that construction workers, future occupants, and the environment as a whole, are adequately protected from hazards associated with contamination, and encourage cleanup of such sites.

City of Carlsbad Municipal Code

Chapter 6.03 of the Carlsbad Municipal Code incorporates by reference Chapters 9 and 11 of Division 8 of Title 6 of the San Diego County Code of Regulatory Ordinances, which designates the County DEH as the local agency responsible for implementing the state's Unified Program and specifies reporting, disclosure and monitoring requirements for hazardous materials and hazardous waste establishments.

4.8.3 Thresholds and Methodology

Thresholds

A significant impact would occur if the proposed project would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- 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 create a significant hazard to the public or the environment.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Methodology

The potential for hazards and/or hazardous materials impacts caused by construction and operation of the proposed project was determined by a review of the existing conditions, with attention paid to the presence of hazardous materials and hazardous wastes associated with past operations at the site. Exposure risks are dependent on a variety of factors such as the chemical of concern, concentration levels, medium (i.e., soil, groundwater, or soil vapor), and exposure pathway. Exposure can occur through disturbance from earthwork activities during construction, or for constituents that easily off-gas (e.g., volatile organic compounds), from vapor intrusion through foundations of new structures. This analysis makes conservative assumptions in the potential for encountering legacy contaminants where site specific data is either limited or unavailable. Human health risks can occur from either acute or chronic exposure and both are considered in this analysis; however, to quantitatively estimate exposure risks, a human health impact analysis or HRA would be necessary. This type of risk assessment is typically conducted for sites with known releases of hazardous materials. This analysis relies on the Phase I Environmental Site Assessment and the select soil sampling that was conducted as part of the Phase II Environmental Site Assessment to characterize the existing conditions of the subsurface at the project site. The Phase II Environmental Site Assessment conducted at the site did not identify a release of hazardous materials; therefore, an HRA for the site is not warranted.

4.8.4 Project Impact Analysis

Impact 4.8-1: Would the proposed project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction

Construction activities associated with the proposed project would include demolition and removal of existing buildings and appurtenant structures on the project site, excavation and removal of soils from portions of the project site, and construction of new buildings, structures, and other features of the proposed project. The potential for exposure of people or the environment to hazardous materials during these construction activities is addressed below.

Exposure to Hazards in Existing Buildings

The proposed project would include demolition of existing structures of ages that could contain hazardous building materials (Arcadis, 2016a). Exposure to hazardous building materials during demolition including ACMs, LBP, or other hazardous materials in structures would only occur during demolition activities but could result in adverse health effects if not managed

appropriately. Once the structures on a property have been removed, there would be no further exposure during operation of the proposed project.

As described under Regulatory Setting, above, existing federal, state, and local laws and regulations require that demolition or renovation activities that may disturb or require the removal of materials that consist of, contain, or are coated with ACM, LBP, PCBs, mercury, and other hazardous materials must be inspected and/or tested for the presence of hazardous materials. The hazardous materials must be managed and disposed of in accordance with laws and regulations, as described further below.

In the case of ACM and LBP, the identification, removal, and disposal is regulated under 8 CCR 1529 and 5208 for ACM and 8 CCR 1532.1 for LBP. All work must be conducted by a state-certified professional. If ACM and/or LBP is determined to exist on-site, a site-specific hazard control plan must be prepared and submitted to the appropriate agency (the APCD for asbestos and Cal/OSHA for lead) detailing removal methods and specific instructions for providing protective clothing and equipment for abatement personnel. If necessary, a state-certified LBP and asbestos removal contractor would be retained to conduct the appropriate abatement measures as required by the plan. Wastes from abatement and demolition activities would be disposed of at a landfill(s) licensed to accept such waste. Once all abatement measures have been implemented, the contractor would conduct a clearance examination and provide written documentation to the city that testing and abatement have been completed in accordance with all federal, state, and local laws and regulations.

In the case of PCBs, the identification, removal, and disposal is regulated by the EPA under the Toxic Substances Control Act (Title 40 Chapter 1 Subchapter R Part 761) and California regulations (22 CCR 66263.44). Electrical transformers and older fluorescent light ballasts not previously tested and verified to not contain PCBs must be tested. If PCBs are detected above action levels, the materials must be disposed of at a licensed facility permitted to accept the materials. Upon completion of abatement measures, if applicable, the contractor would provide written documentation to the city that testing and abatement have been completed in accordance with all federal, state, and local laws and regulations.

In the case of mercury in fluorescent light tubes and switches, the identification, removal, and disposal is regulated under 22 CCR 67426.1–67428.1 and 66261.50. Under these regulations, the light tubes must be removed without breakage and disposed of at a licensed facility permitted to accept the materials. Upon completion of abatement measures, if applicable, the contractor would provide written documentation to the city (Development Services Building Division) that testing and abatement have been completed in accordance with all federal, state, and local laws and regulations.

Existing abatement laws and regulations, combined with enforcement mechanisms by agencies including the APCD and Cal/OSHA require compliance with applicable federal, state, and local laws and regulations that would prevent the exposure of individuals and the environment to the hazards during demolition. Therefore, exposure to ACMs, LBPs, and/or other hazardous building materials would be **less than significant**.

Use of Hazardous Materials during Construction

Construction activities would also likely require the use of limited quantities of hazardous materials such as fuels, oils, and lubricants for construction equipment; paints and thinners; and solvents and cleaners. These hazardous materials are typically packaged in consumer quantities and used in accordance with manufacturer recommendations, and would be transported to and from the project site. The improper handling and transport of hazardous materials could result in adverse health effects to workers or the public.

As discussed in the Regulatory Setting, transportation of hazardous materials is regulated by the DOT and Caltrans. Together, federal and state agencies determine driver-training requirements, load labeling procedures, and container specifications designed to minimize the exposure of hazardous materials. In addition, businesses that use hazardous materials, including construction companies, are required by RCRA and the Hazardous Waste Act to prepare and implement Hazardous Materials Business Plans (HMBPs) describing procedures for the handling, transportation, generation, and disposal of hazardous materials. Because numerous laws and regulations govern the transportation and management of hazardous materials, the potential impact related to exposure of hazardous materials or wastes during construction would be **less than significant**.

Operation

The use of common hazardous materials would occur as part of the operation of the proposed project, primarily associated with building maintenance activities and common household hazardous materials. Hazardous materials would likely include paints, lubricants, solvents, cleaning supplies and relatively small quantities of fuels, oils, and other petroleum-based products. Activities such as landscaping, can also become sources of releases of hazardous materials with pesticides and herbicides. However, the landscaping plan mainly (see Chapter 3, *Project Description*) calls for the use of native plants that would minimize the need for herbicides.

Hazardous materials (e.g., cleaning supplies, paints, oils, and solvents) for residential developments are typically handled and transported in small quantities, and because the health effects associated with them are generally not as serious as industrial uses, operation of a majority of the new uses at the site would not cause an adverse effect on the environment with respect to the routine transport, use, or disposal of general maintenance and household hazardous materials.

All hazardous materials for building maintenance are required to be stored and handled according to manufacturer's directions and local, state and federal regulations including the Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.), which is implemented by regulations described in Title 22 of the CCR. With adherence to existing regulatory requirements, impacts related to the routine transport, use or disposal of hazardous materials associated with future uses at the site would be **less than significant**.

Impact 4.8-2: Would the proposed project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction

As noted above in Impact 4.8-1, construction activities would likely require the use of limited quantities of hazardous materials such as fuels, oils, and lubricants for construction equipment; paints and thinners; and solvents and cleaners. These materials would be transported to and from the project site. The improper handling and transport of hazardous materials could result in accidental release of hazardous materials, thereby exposing site occupants to hazardous materials contamination.

In general, aside from refueling needs for heavy equipment, the hazardous materials typically used on a construction site are brought onto the site by the construction contractor, packaged in consumer quantities and used in accordance with manufacturer recommendations. The overall quantities of these materials on the site at any one time would not result in large bulk amounts that, if spilled, could cause a significant soil or groundwater contamination issue. Spills of hazardous materials on construction sites are typically localized and would be cleaned up in a timely manner in accordance with required BMPs and HMBPs. Refueling activities of heavy equipment would be conducted in a controlled dedicated area complete with secondary containment and protective barriers to minimize any potential hazards that might occur with an inadvertent release. Given the required protective measures (i.e., BMPs), HMBPs and the quantities of hazardous materials typically needed for construction projects, the threat of exposure to the public or contamination to soil and/or groundwater from construction-related hazardous materials is considered a **less than significant impact**.

Operation

Operational activities associated with the proposed project would primarily involve the use of relatively small quantities of common hazardous materials including paints and thinners, cleaning solvents, and fuels, oils, and lubricants that might be associated with building maintenance and residential land uses. These are typically packaged in consumer quantities as opposed to bulk deliveries for other industrial land uses and used in accordance with manufacturer recommendations. Because numerous laws and regulations govern the transportation and management of hazardous materials to reduce the potential hazards associated with accidental release and upset conditions, this impact would be **less than significant**.

Impact 4.8-3: Would the proposed project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

As noted above in the Setting, the MAAC Day Care associated with the Laurel Tree Apartments located approximately 285 feet south of the East Parcel. However, the proposed project would not involve the use of substantive quantities of hazardous materials and would not have any emissions that are inconsistent with residential land uses. Therefore, the potential impact to this sensitive receptor would be considered less than significant.

Impact 4.8-4: Would the proposed project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

As described above in the environmental setting, the Phase I Environmental Site Assessment evaluated the project site and surrounding area for sites that are listed on environmental databases that might indicate the presence of contamination in the subsurface. The information from these databases can include lists of properties that contain businesses that handle hazardous materials and/or wastes with no record of releases, properties with relatively minor incidents having little to no threat to human health or the environment, or properties with a history of extensive releases that require remediation efforts in order to get conditions to acceptable levels (i.e., no substantive threat to human health or the environment). If not understood and managed appropriately, future residents and visitors to the project site could be exposed to legacy contaminants through vapor intrusion into proposed structures, or contact with contaminated soils through excavation or other ground-disturbing activities. Typically, sites with releases that are contained on these lists are in the process of either further investigation or are already in the process of remediation such that exposure hazards are reduced. Investigations and cleanups are overseen by regulatory agencies, such as the DTSC or RWQCB, that review sites on a case by case basis and evaluate potential health hazards based on land uses, characteristics of the contaminants of concern, and exposure pathways.

As described in the Phase I Environmental Site Assessment, there were detections of petroleum hydrocarbons in five areas of the 1205 Aviara Parkway site that required removal (Arcadis, 2016a). The excavations were in the northwest corner of the site likely associated with three former ASTs used for fuel storage. The ASTs were removed from the site approximately 3 to 4 years prior to the 2016 report. Confirmation soil sampling at the time indicated that no petroleum hydrocarbons remained in the soil above the laboratory detection limit, the Phase II Environmental Site Assessment collected soil samples anyway and found low levels of TPH in the heavy oil range at the site (Arcadis, 2016b).

Therefore, the possibility remains for future improvements associated with the proposed project to occur on areas with unidentified contamination and the impact is considered **potentially significant**.

Impact 4.8-5: Would the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The city is a participant in the San Diego County's HAZMIT Plan. The intent of the plan is to facilitate cooperation between agencies and encourages and rewards local and state pre-disaster planning and promotes sustainability as a strategy for disaster resilience. This enhanced planning network is intended to enable local and state governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more effective risk reduction projects. The city has implemented many of the recommended action items in the plan through existing programs and procedures and enforcement of policies and ordinances. Development of the proposed project would be required to comply with all city building code requirements and ordinances and thus would not conflict with implementation of this plan.

Fire protection services would be provided to the project site by the City of Carlsbad Fire Department, which delivers emergency and non-emergency services, including rapid assistance for medical, fire, or other hazardous situations, to the entire city. Development of the project site would be required to ensure that site access can accommodate emergency response and evacuation in accordance with proposed project's Fire Master Plan that is consistent with Fire Code requirements and city ordinances.

Circulation for the proposed project has been designed to ensure appropriate emergency access to and egress from all areas of the project site. Additionally, all project-specific designs, including private internal circulation and building site plans, were subject to review and approval by the city, as part of the building permit review process which would ensure that all building plans as well as the proposed project's Fire Master Plan are in compliance with the city's Fire Code and all relevant city ordinances. The circulation design for the proposed project was included in the Fire Master Plan (found in Appendix L.2 of this EIR) and was approved by the city in the Alternatives Materials and Methods letter (City of Carlsbad, 2018), which is included in Appendix L.

The city has approved the proposed project's Fire Master Plan (found in Appendix L.2 of this EIR) and the design and existing emergency response requirements, consistent with building code and Fire Code requirements, would also be approved by the city prior to issuance of a building permit (City of Carlsbad, 2018). The final design would be in compliance with the HAZMIT Plan and sufficient to ensure that the potential health and safety risks associated with the proposed project would have no significant impairment of or interference to implementation of any emergency response or evacuation plans. The potential impact related to this threshold would be **less than significant**.

4.8.5 Level of Significance before Mitigation

Implementation of the proposed project would result in a potentially significant impact, as discussed above under Impact 4.8-4.

4.8.6 Environmental Mitigation Measures

The following mitigation measure would reduce the proposed project's potentially significant impact identified under Impact 4.8-4, which would occur since the project could be developed on areas with unidentified contamination and could create a significant hazard to the public or the environment. The following mitigation measure would reduce the potential for creating a significant hazard by requiring the implementation of a soil management plan.

Mitigation Measure HAZ-1: Soil Management Plan. The project applicant shall submit and obtain approval of a Soil Management Plan from the San Diego County DEH HMD prior to initiating any earthwork activities on the project site. The Soil Management Plan shall be prepared for the proposed project by a qualified environmental consultant based on the findings of the Phase I and II Environmental Site Assessments prepared by Arcadis and included in Appendices to this Draft EIR, and approved by the HMD. During construction, the contractor shall implement the Soil Management Plan and cease any earthwork activities upon discovery of

any suspect soils or groundwater (e.g., petroleum odor and/or discoloration). The contractor shall notify the HMD upon discovery of suspect soils or groundwater and retain a qualified environmental firm to collect soil samples to confirm the level of contamination that may be present.

If contamination is found to be present on-site, any further proposed groundbreaking activities within areas of identified or suspected contamination shall be conducted according to a site specific health and safety plan, prepared by a California state licensed professional consistent with Cal OSHA and Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) requirements. The contractor shall follow all procedural direction given by HMD in accordance with the Soil Management Plan prepared for the site to ensure that suspect soils are isolated, protected from runoff, and disposed of in accordance with transportation laws and the requirements of the licensed receiving facility.

If contaminated soil or groundwater is encountered and identified constituents exceed human health risk levels, the project applicant shall submit documentation to the city to verify that the contamination has been delineated, removed, and disposed of off-site in compliance with the receiving facilities' requirements prior to any ground-disturbing activity on the relevant portion of the project site. This mitigation measure addresses the impact identified under Impact 4.8-4 of the EIR.

4.8.7 Level of Significance after Mitigation

Implementation of Mitigation Measure HAZ-1 would avoid and/or lessen the previously-identified potentially significant impact by requiring the project applicant to submit a Soil Management Plan to the San Diego County DEH HMD, establishing a contingency for discovery of any suspect contamination and a process for further investigation and remediation, if necessary, to reduce the potential for worker exposures. With implementation of Mitigation Measure HAZ-1, impacts would be less than significant. Thus, this impact would be mitigated to a level that is **less than significant**.

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4.9 Hydrology and Water Quality

This section provides a description of existing conditions followed by an evaluation of the proposed project's impacts related to hydrology and water quality. This section is based on information from several different sources, including the documents prepared to specifically consider the effects of the project on the hydrological systems in and around the project site (REC, 2019a, 2019b, 2019c, 2019d, 2019e, and 2019f; see Appendices H.1, H.2, H.3, H.4, H.5, and H.6).

4.9.1 Existing Conditions

Regional Hydrology

The project site is located within the Carlsbad Hydrologic Unit, a roughly triangular-shaped area of approximately 211 square miles that extends from east of Lake Wohlford to Solana Beach (San Diego County, 2014). The Carlsbad Hydrological Unit is further divided into six watersheds called "hydrologic areas." The project site is located within the Encinas Creek Hydrologic Area (RWQCB, 2018).

The Encinas Creek Hydrologic Area is 3,400 acres in size, making it the smallest hydrologic area within the Carlsbad Hydrologic Unit (RWQCB, 2018). The area extends inland from the coast 2.4 miles and the highest elevation within the drainage is approximately 430 feet above mean sea level. The hydrologic area begins as a small drainage behind an industrial area where it is immediately channelized. It continues down through industrial and office parks associated with Palomar Airport until it reaches the lower valley area. It then makes its way to the Pacific Ocean after crossing Interstate 5 and Carlsbad Boulevard. The Encinas Creek Hydrologic Area is entirely within the city and the only significant receiving water body within Encinas Creek Hydrologic Area is the Pacific Ocean. However, there is also a small unnamed creek that runs the length of the area (RWQCB, 2018). Encinas Creek itself flows immediately north of the project site (REC, 2019a).

Project Site Drainage

Drainage at the project site was divided into two areas—the West Parcel and the East Parcel. The West Parcel is approximately 7.19 acres and the East Parcel is approximately 2.31 acres. Currently, the West Parcel generally drains southeast to northwest through a small broad earthen channel toward Encinas Creek, which flows east to west immediately north of the project site (REC, 2019a). The West Parcel has been subdivided into five drainage management areas, which together extend beyond the project site boundary to capture flows that are coming onto the project site and total approximately 12.1 acres.

Under current conditions, drainage on the East Parcel has been subdivided into three drainage management areas (E1 – project site; E2 – small portions of the site that drain toward Laurel Tree Lane; and E3 – off-site portion of Laurel Tree Lane and shoulder that drain toward the northeast. The three drainage management areas cover 1.88 acres with two points of discharge (REC, 2019b). The bulk of the East Parcel, that totals 1.45 acres (E1) drains from a southeast to

northwest direction into the city's Municipal Separate Storm Water (MS4) system. The 0.43-acre narrow drainage management areas along Laurel Tree Lane (E2 and E3) drain from the west to east to an existing asphalt spillway and discharges to a graded swale.

Surface Water Quality

Water quality within the Encinas Creek Hydrologic Area is generally in healthy condition. The following constituent groups were found to be of low priority for receiving waters within the hydrologic area: oil and grease, metals, organics, indicator bacteria, toxicity, dissolved minerals, pesticides, nutrients, and sediment related impacts (RWQCB, 2018). The only priority water quality condition that has been identified as a water quality impairment in the hydrologic area is trash.

Groundwater

No defined groundwater basins occur within the vicinity of the project site (DWR, 2019). The Batiqitos Lagoon Valley Groundwater Basin is the nearest groundwater basin, identified as Basin 9-22, located approximately 2.5 miles southeast of the project site (DWR, 2019). The groundwater in this basin is not considered a good source of irrigation or municipal use due to the high content of chloride, sulfate, and total dissolved solids.

Flooding

Per the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Number 06073C1035G (revised May 16, 2012), the project site resides in Zone X and is outside of the 100- and 500-year flood zone (REC, 2019a; REC, 2019b).

4.9.2 Regulatory Setting

The following state and federal regulations provide an overall context for the consideration of site-specific issues at the project site. When provisions are requirements (e.g., law, code, regulation, or ordinance), it is assumed these regulatory requirements would be adhered to with project implementation, both as they apply to development of the proposed project and related project activities.

Federal

Clean Water Act

Water quality objectives for all waters of the United States are established under applicable provisions of Section 303 of the federal Clean Water Act (CWA). The CWA prohibits the discharge of pollutants to navigable waters from a point source unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit.

The NPDES permit system was established in the CWA to regulate municipal and industrial point discharges to surface waters of the U.S. Each NPDES permit for point discharges contains limits on allowable concentrations of pollutants contained in discharges. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA

describes the factors that the U.S. Environmental Protection Agency (EPA) must consider in setting effluent limits for priority pollutants.

The CWA was amended in 1987 to require NPDES permits for non-point source (i.e., stormwater) pollutants in discharges. Stormwater sources are diffuse and originate over a wide area rather than from a definable point. The goal of NPDES stormwater regulations is to improve the quality of stormwater discharged to receiving waters to the “maximum extent practicable” through the use of structural and non-structural Best Management Practices (BMPs). BMPs can include the development and implementation of various practices including educational measures (workshops informing public of what impacts results when household chemicals are dumped into storm drains), regulatory measures (local authority of drainage facility design), public policy measures, and structural measures (filter strips, grass swales and detention ponds).

State

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board and the San Diego Regional Water Quality Control Board (RWQCB) are delegated authority from the EPA to implement portions of the CWA, and the State’s water quality law, the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). These agencies have established water quality standards that are required by Section 303 of the CWA and the Porter-Cologne Act. The Porter-Cologne Act states that a Water Quality Control Plan, or Basin Plan, will consist of beneficial uses, water quality objectives, and a program of implementation for achieving water quality objectives. A Basin Plan, prepared by the San Diego RWQCB, establishes water quality numerical and narrative standards and objectives for rivers and their tributaries within the area subject to the Basin Plan. In cases where the Basin Plan does not contain a standard for a particular pollutant, other criteria apply, such as EPA water quality criteria developed under Section 304(a) of the CWA.

General Construction General Permit

In accordance with NPDES regulations, to minimize the potential effects of construction runoff on receiving water quality, the State requires that any construction activity affecting 1 acre or more obtain coverage under a General Construction Activity Stormwater Permit (Construction General Permit). The current Construction General Permit is the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2012-0006-DWQ, NPDES No. CAS000002, effective July 17, 2012. General Construction Permit applicants are required to submit a Notice of Intent to the RWQCB and prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). The Notice of Intent would include site-specific information and the certification of compliance with the terms of the Construction General Permit.

The SWPPP is required to include BMPs to reduce construction effects on receiving water quality by implementing erosion and sediment control measures and reducing or eliminating non-stormwater discharges. Examples of typical construction BMPs in SWPPPs include, but are not limited to: using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment so as to ensure that spills or leaks cannot

enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; and installing sediment control devices such as gravel bags, inlet filters, fiber rolls, or silt fences to reduce or eliminate sediment and other pollutants from discharging to the city drainage system or receiving waters.

Local

The section below provides a summary of regulations applicable to the proposed project. Because the specific provisions described in this section are required by ordinance or regulation (e.g., stormwater permits, the Carlsbad Municipal Code) it is presumed that the proposed project would adhere to the requirements.

Regional General Municipal Stormwater Permit

The RWQCB has adopted an area-wide MS4 Permit, Order No. R9-2013-0001, NPDES No. CAS0109266, as amended by Order Nos. R9-2015-0001 and R9-2015-0100, “Waste Discharge Requirements for Discharges from the MS4s Draining the Watersheds within the San Diego Region” (MS4 Permit). Under this MS4 Permit, municipalities are ultimately held responsible for everything in their stormwater conveyance systems, including industrial and construction stormwater runoff. Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100, presents guideline requirements for the control of pollutants resulting from stormwater and urban runoff from all areas named in NPDES Permit No. CAS0109266. The RWQCB specifically requires co-permittees to inventory existing stormwater pollution control programs, illicit discharge detection programs, monitor programs and data, stormwater conveyance system maps, land use maps, and existing laws, ordinances, and codes. The co-permittee has the authority to implement and enforce stormwater management programs in their areas of jurisdiction and where necessary, and to promulgate the authority to carry out all functions of the stormwater management programs. The city of Carlsbad is a co-permittee under the MS4 Permit.

The MS4 Permit requires co-permittees to use planning procedures, including a master plan to develop, implement, and enforce controls to reduce the discharge of pollutants from MS4 systems that receive discharges from areas of new development and significant redevelopment. This permit addresses controls to reduce pollutants in discharges from MS4 sewers after construction is completed. With respect to land use planning for new development and redevelopment, at a minimum, each co-permittee shall assess its general plan, modify development project approval processes, revise environmental review processes, and conduct education efforts focused on new development and redevelopment to minimize the short and long-term impacts on receiving water quality.

City of Carlsbad Engineering Standards

The 2016 Engineering Standards for the City of Carlsbad provides guidance for land development and public improvement projects to ensure compliance with the 2013 MS4 Permit and the city’s Jurisdictional Urban Runoff Management Plan. The Plan includes a BMP Design Manual (Volume 5) that provides on-site post-construction stormwater requirements and procedures for design and selection of BMPs based on standards presented in the MS4 Permit. As the project

moves forward through the development process, city staff would require and ensure compliance with the City of Carlsbad Engineering Standards.

City of Carlsbad Grading and Drainage Ordinance (Title 15)

The City of Carlsbad Municipal Code includes Title 15 which covers regulations on grading and drainage for new development and redevelopment projects. The ordinance was enacted to assure consistency with the requirements of the Clean Water Act, applicable implementing regulations, and the NPDES MS4 Permit. The ordinance includes standards and requirements in the SWPPP Manual to ensure construction compliance with the city's Storm Water Management and Discharge Control Ordinance (Chapter 15.12) the MS4 Permit, and the NPDES Construction General Permit.

Every construction activity within the city that has the potential to negatively affect water quality must prepare a construction SWPPP. An SWPPP provides for temporary measures to control sediment and other pollutants during construction as required by the most recent statewide permit regulating construction activities.

4.9.3 Thresholds and Methodology

Thresholds

A significant impact would occur to hydrology and water quality if the proposed project would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of imperious surfaces, in a manner which would:
 - result in substantial erosion or siltation on- or off-site.
 - substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
 - 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.
 - impede or redirect flood flows.
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Methodology

The potential for creation of significant impacts related to hydrology and water quality through construction and operation of the proposed project was determined by a thorough review of the existing conditions that were informed by the drainage reports prepared for the site, and data from

the RWQCB and the California Department of Water Resources. The existing conditions were then compared to the proposed project elements and the existing regulatory requirements for the project.

4.9.4 Project Impact Analysis

Impact 4.9-1: Would the proposed project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

The West Parcel of the project site is currently developed with an existing structure and surface parking. North of the structure is unpaved. The East Parcel is undeveloped.

Construction of the proposed project would require earthwork activities, including grading and excavation of the subsurface soils, potentially exposing them to erosion. During precipitation events in particular, construction activities associated with the project have the potential to result in the conveyance of sediments, due to minor soil erosion during grading and soil stockpiling and subsequent siltation, as well as other pollutants associated with construction wastes, fuels, and trash into municipal storm drains.

Because the project site and area of disturbance are greater than 1 acre, to the applicant must comply with the NPDES general construction permit. In addition, the project would be required to comply with the city's Grading and Drainage Ordinance. Compliance with these regulations requires preparation and implementation of a SWPPP. Before construction could begin, a SWPPP would be developed and a NOI filed with the San Diego RWQCB. The SWPPP would include BMPs to be implemented during construction that could consist of a wide variety of measures taken to reduce pollutants in stormwater and other non-point source runoff.

Once constructed, the proposed project would change drainage patterns at the site compared to existing conditions. Impervious surface areas would substantively increase (see the drainage studies for both parcels within Appendix H for details on changes to impervious surfaces for each drainage management area; REC 2019c, 2019d). However, the proposed project would be required to include drainage control measures into the project design to protect receiving waters from discharge of potential pollutants in accordance with the city's BMP Design Manual and the MS4 Permit, which requires the incorporation of post-construction BMPs into the project design to the maximum extent practicable. These requirements also include low-impact development measures to address water quality of stormwater runoff as well as runoff volumes.

Drainage control features included in the proposed project include two bioretention basins and an underground detention basin on the West Parcel and two underground detention basins on the East Parcel that would be designed to meet water quality control requirements and current hydromodification requirements of the city (see details contained drainage studies within Appendix H; REC 2019a, 2019b, 2019e, and 2019f). Because there are currently no existing on-site treatment BMPs, post-project conditions are expected to improve water quality from implementation of the required BMPs.

In conclusion, when considering the existing regulatory requirements and the proposed drainage control features included in the proposed project, the potential impact related to water quality requirements during both construction and operation of the proposed project would be **less than significant**.

Impact 4.9-2: Would the proposed project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The proposed project would not use groundwater for potable water supplies and the project site does not overlay an aquifer used for municipal supplies. Therefore, **no impact** would be associated with this issue.

Impact 4.9-3: Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

There are no natural water or drainage features on the project site, and the current flow of stormwater runoff is to Encinas Creek just north of the West Parcel and to existing storm drain facilities on the East Parcel. The proposed project would include ground disturbing activities, including excavation and grading, consequently altering drainage patterns. Altered drainage patterns have the potential to result in erosion, sedimentation, and/or flooding on-site or off-site by redirecting or concentrating flows.

As detailed above under Impact 4.9-1, construction of the proposed project would be required to comply with the NPDES General Construction Permit and the city's grading permit requirements. Through these regulations, the applicant would be required to prepare and implement a SWPPP. These plans would include erosion and sediment control BMPs to minimize the potential for erosion and sedimentation to occur during construction. BMPs would include, but would not be limited to, filtering runoff during construction, avoiding heavy grading and earthwork operations during the rainy season, and incorporating landscaping as early as possible. In addition, prior to receiving grading and building permits from the city, the applicant would be required in accordance with the California Building Code to prepare a final geotechnical report (discussed further in Section 4.6, Geology and Soils), which requires recommendations for surface and subsurface drainage, slope stabilization, erodible soils, and compliance with city on-site and off-site drainage impacts and requirements.

With development of the proposed project, the amount of impervious surfaces at the project site would increase. The project site currently discharges stormwater to Encinas Creek on the West Parcel and an existing city storm facility on the East Parcel. Through compliance with the NPDES MS4 Permit and the city's Engineering Standards, the proposed project would be designed to include operational BMPs to retain the increased runoff from the new impervious surfaces to ultimately reduce operational stormwater runoff, which in turn would reduce associated erosion and sedimentation on- and off-site. The proposed project would include bioretention basins, and underground detention basins which would be designed in accordance

with city standards to reduce 10-year and 100-year peak storm flows by 9.9% and 8.2%, respectively, for the West Parcel, and 86.1% and 0.8%, respectively, for the East Parcel compared to existing conditions (REC, 2019e and 2019f).

Therefore, because the proposed project would implement applicable facilities and BMPs and because the proposed project would be designed to capture runoff and reduce peak flows from pre-developed conditions, impacts to drainage patterns and associated erosion and/or sedimentation during construction and operation would be **less than significant**.

Impact 4.9-4: Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

As described above, the proposed project would increase the amount of impervious surfaces on both parcels of the project site. If not managed appropriately, the increased impervious surfaces would result in additional runoff from the site could result in flooding on-site or off-site. However, as noted in Impact 4.9-3, the proposed project would be subject to existing drainage control requirements of the MS4 Permit and the city's Storm Water Ordinance (Chapter 15.12). To meet these requirements, the proposed project would include bioretention basins and underground detention basins that would be sized in accordance with regulatory requirements such that peak storm flows are reduced from existing levels. As mentioned above, the post-development peak storm flows from both the 10-year and 100-year storm events would be reduced (9.9% and 8.2%, respectively, for the West Parcel, and 86.1% and 0.8%, respectively, for the East Parcel) compared to existing levels. Therefore, with implementation of these regional (MS4 Permit) and city (Storm Water Ordinance) drainage control requirements, the impacts related to flooding on-site or off-site would be **less than significant**.

Impact 4.9-5: Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would 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?

Existing drainage from the project site flows to the adjacent Encinas Creek from the West Parcel and to the city's MS4 system and an existing asphalt spillway that discharges to a graded swale off-site for the East Parcel. Construction of the proposed project would require the use of water on-site for various purposes, including dust control, concrete mixing, and sanitation. Construction activities and materials would alter the drainage pattern of the project site, potentially increasing water flow and the risk of siltation into the existing drainage system.

With implementation of BMPs as required by the site-specific SWPPP, including but not limited to the installation of silt fences or other similar devices to remove sediment from surface runoff before it leaves the project site, erosion and other pollutants would be prevented from being discharged from the project site. Typical construction BMPs, including but not limited to silt

fences, fiber rolls, and compost blankets, would also slow flows and reduce the rate of sediment runoff leaving the project site.

The proposed project would be required to comply with all applicable drainage regulations and standards, including the NPDES MS4 Permit, the city's Storm Water Management and Discharge Control Ordinance (Chapter 15.12), and the County of San Diego's Hydraulic Design Manual. The implementation of the required design measures such as the bio-retention basins and detention basins would ensure that peak storm flows are below current levels. As noted above, the drainage studies for both parcels have determined that peak storm flows for the 10-year and 100-year storm events would be reduced from current flow volumes of these same events. With adherence to the current drainage control requirements, the proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or result in substantial additional sources of polluted runoff.

With implementation of these current regulations and BMPs, the proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or result in substantial additional sources of polluted runoff. Therefore, impacts during construction and operation of the proposed project would be **less than significant**.

Impact 4.9-6: Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

According to the FEMA Flood Insurance Rate Maps, the project site resides in Zone X, which is an area determined to be outside the 100- and 500-year flood zone (REC, 2019a; REC, 2019b). Although no streams or rivers run through the site, Encinas Creek does flow just north of the project site. However, the proposed project would not alter the course of Encinas Creek and, with implementation of the required drainage control features, would reduce peak storm flows off-site. For these reasons, the impact for this issue area would be **less than significant**.

Impact 4.9-7: Would the proposed project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

The project site is located within Zone X which is outside of any flood zone as identified by FEMA (REC, 2019a; REC, 2019b). The site is located approximately 1.3 miles from the coast and thus out of any tsunami hazard inundation hazard area. There are no enclosed or semi-enclosed water bodies in the vicinity of the site and the proposed project would not be susceptible to seiche waves. Therefore, there would be **no impact** related to this issue area.

Impact 4.9-8: Would the proposed project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The project site is located within the jurisdiction of the San Diego RWQCB and is subject to the requirements of the Basin Plan for the region. Development of the proposed project would include improvements with drainage control features that would adhere to all regulatory

requirements including the NPDES MS4 Permit that pertains to the control of point sources of pollutants and thus, be consistent with the plans and policies contained within the Basin Plan. The project site is not located within any identified groundwater basin and would receive its water supply from the Carlsbad Municipal Water District (CMWD) (see Section 4.15, *Utilities and Service Systems*, for further discussion of water supply). The CMWD sources its water from imported water and recycled water and does not currently use any groundwater (CMWD, 2016). Therefore, the proposed project would not conflict or obstruct any sustainable groundwater management plan. For these reasons, the potential impact related to water quality control plans or sustainable groundwater management plans would be **less than significant**.

4.9.5 Level of Significance before Mitigation

Implementation of the proposed project would not result in a significant hydrology and water quality impact; therefore, no mitigation measures are proposed

4.9.6 Environmental Mitigation Measures

No mitigation measures are proposed, as no significant impacts have been identified.

4.9.7 Level of Significance after Mitigation

No significant impacts to hydrology and water quality have been identified.

4.10 Land Use and Planning

This section provides information regarding current land use, land use designations, and land use policies pertinent to the project site, and also reviews the land use assumptions, designations, and policies of the city's General Plan and other applicable federal, state, and local requirements. These policies and regulations govern land use within the area surrounding the project site to evaluate the proposed project's potential to conflict with policies adopted for the purpose of avoiding or mitigating significant environmental effects.

4.10.1 Existing Conditions

As indicated in Figure 3-1, *Regional Location*, the project site is located in the city, approximately 1 mile east of Interstate 5, 2 miles west of El Camino Real, and 0.1 mile south of Palomar Airport Road. As indicated in Figure 3-2, *Project Site and Vicinity*, the 9.5-acre project site is bisected by Aviara Parkway, resulting in a 7.19-acre West Parcel and a 2.31-acre East Parcel. The West Parcel currently contains a 38,000-square-foot warehouse, 10,000-square-foot loading dock with a 350-square-foot shed, 50,000-square-foot concrete parking area, and approximately 85,000 square feet of gravel roads and parking area (Arcadis, 2016a). Current uses on the West Parcel support packaging and wholesale-selling of flowers and flower supplies (Arcadis, 2016a). The East Parcel, which is bordered to the south by Laurel Tree Lane, was previously graded, but is currently vegetated and undeveloped. Elevations range from 82 to 144 feet above mean sea level (AMSL) on the West Parcel and from 94 to 111 feet AMSL on the East Parcel (GeoSoils, Inc., 2019).

As indicated in Figure 3-2, *Project Site and Vicinity*, surrounding land uses primarily consist of non-residential and residential uses and designated open space. To the north is open space including the Encinas Creek riparian corridor, which is designated as Existing Hardline under the city's Habitat Management Plan (HMP) (Helix, 2018).¹ Beyond that are non-residential developments and associated parking, which are adjacent to Palomar Airport Road. To the east is an existing gym and an undeveloped hillside. To the south of the West Parcel is an undeveloped hillside and residential uses. To the south of the East Parcel is Laurel Tree Lane and multi-family residential developments. To the west of the West Parcel is undeveloped hillside designated as open space and single-family residences on top the undeveloped hillside. McClellan-Palomar Airport is located approximately 1 mile to the northeast.

As indicated in Figure 3-3, *General Plan Land Use Map*, the project site is designated by the city's General Plan as R-30 Residential and as indicated in Figure 3-5, *Zoning Map*, the project site is zoned Residential Density-Multiple (RD-M). The project site is located within areas covered by several other plans affecting land use. These include: the coastal zone map; the Mello II Segment of the city's Local Coastal Program (LCP); Zone 5 of the city's Local Facilities Management Plan (LFMP); and Safety Zone 6 within the Airport Influence Area

¹ Existing Hardline is defined as areas that already have been conserved for their wildlife value due to actions occurring in the past. Examples include on-site open space required to be set aside as part of the approval of a development project and areas that have been purchased and set aside as mitigation for project impacts (City of Carlsbad, 1999).

(AIA) of the McClellan-Palomar Airport Land Use Compatibility Plan (ALUCP) (SDCRAA, 2010).

4.10.2 Regulatory Setting

This section identifies and summarizes state and local laws, policies, and regulations that are applicable to the proposed project.

State

California State Senate Bill 375

California State Senate Bill (SB) 375 was signed into law in 2008 and is intended to provide a means for achieving Assembly Bill (AB) 32 greenhouse gas (GHG) emissions target reduction goals from cars and light trucks through long-range regional growth strategies and transportation plans. SB 375 is directed toward California's 18 Metropolitan Planning Organizations (MPOs). The San Diego Association of Governments (SANDAG) is San Diego County's MPO. Under SB 375, each MPO is required to develop a "Sustainable Communities Strategy" (SCS), a newly required element of the Regional Transportation Plan (RTP). SB 375 does not take over local planning functions, and a SCS does not in any way supersede a General Plan, specific plan, or local zoning ordinance. Additionally, SB 375 does not require any consistency between the SCS and planning and development regulatory documents. However, the MPOs are required to develop the SCS through integrated land use and transportation planning and demonstrate an ability to attain the proposed GHG emissions reduction targets by 2020 and 2035.

Coastal Act

The Coastal Act of 1976 permanently established the California Coastal Commission by passing the Coastal Act of 1976, the State Legislature mandated the preparation of LCPs and established the following goals:

1. Protect, maintain, and where feasible, enhance and restore the overall quality of the Coastal Zone environment and its natural and man-made resources.
2. Assure orderly, balanced utilization and conservation of Coastal Zone resources taking into account the social and economic needs of the people of the State.
3. Maximize public access to and along the coast and maximize public recreational opportunities in the Coastal Zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners.
4. Assure priority for coastal-dependent development over other development on the coast.
5. Encourage State and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the Coastal Zone.

As indicated in Figure 3-4, *Coastal Zone Location*, the project site is located within the coastal zone.

Regional

San Diego Association of Governments – Regional Comprehensive Plan

SANDAG originally adopted the Regional Comprehensive Plan (RCP) in 2004. It serves as the long-term planning framework for the San Diego Region, providing a broad context in which local and regional decision to move the region toward a sustainable future can be made. The RCP integrates local land use and transportation decisions, and focuses attention on where growth should occur. The SANDAG principles and policies are shaped by concepts of sustainability and smart growth. In support of smart growth, the RCP identifies seven smart growth opportunity area categories in the San Diego Region: Metropolitan Center, Urban Center, Town Center, Community Center, Transit Corridor, Special Use Center, and Rural Community. These seven categories have resulted in a key implementation action of the RCP, the “Smart Growth Concept Map.” The concept map was adopted in 2006. The concept map contains over 200 locations in the seven smart growth categories and illustrates the location of existing, planned, and potential smart growth areas. According to the latest Smart Growth Concept Map, the project site is located within the Urban Area Transit Strategy Boundary but not within a designated smart growth opportunity area (SANDAG, 2015).

On October 9, 2015, the SANDAG Board of Directors adopted San Diego Forward: The Regional Plan. This plan combines the RCP with the 2050 RTP/SCS, which was adopted in 2012. The Regional Plan identifies the five following strategies to move the San Diego region toward sustainability:

- Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.
- Protect the environment and help ensure the success of smart growth land use policies by preserving sensitive habitat, open space, cultural resources, and farmland.
- Invest in a transportation network that gives people transportation choices and reduces greenhouse gas emissions.
- Address the housing needs of all economic segments of the population.
- Implement the Regional Plan through incentives and collaboration.

Local

City of Carlsbad General Plan

The elements of the General Plan that apply specifically to Land Use include: Land Use and Community Design; Housing; Mobility; Public Safety; Noise; and Open Space, Conservation and Recreation.

As indicated in Figure 3-3, *General Plan Land Use Map*, the project site is designated R-30 (Residential, 23–30 du/ac). This designation permits residential development at a density of 23–30 du/ac, with permitted housing types including two-family dwellings (two attached dwellings) and multi-family dwellings (three or more attached dwellings). Detached single-family dwellings may be permitted when developed as two or more units on one lot, subject to specific review and community design requirements (City of Carlsbad, 2015).

As indicated in Figure 3-3, *General Plan Land Use Map*, the West Parcel is abutted by land designated OS (Open Space) to the north and west, and R-4 (Residential, 0-4 du/ac) to the south. The East Parcel is abutted by land designated OS to the north, R-23 (Residential, 15-23 du/ac) to the south, and OS (across Laurel Tree Lane) to the east (City of Carlsbad, 2015). Land designated for O (Office) use is situated along Palomar Airport Road north of the adjacent open space lands and project site.

According to the General Plan's Land Use Map, there are no planned streets in the immediate vicinity of the project site (e.g., all General Plan streets in the immediate project vicinity have been built, including Aviara Parkway) (City of Carlsbad, 2015)

Zoning Ordinance (Carlsbad Municipal Code, Title 21)

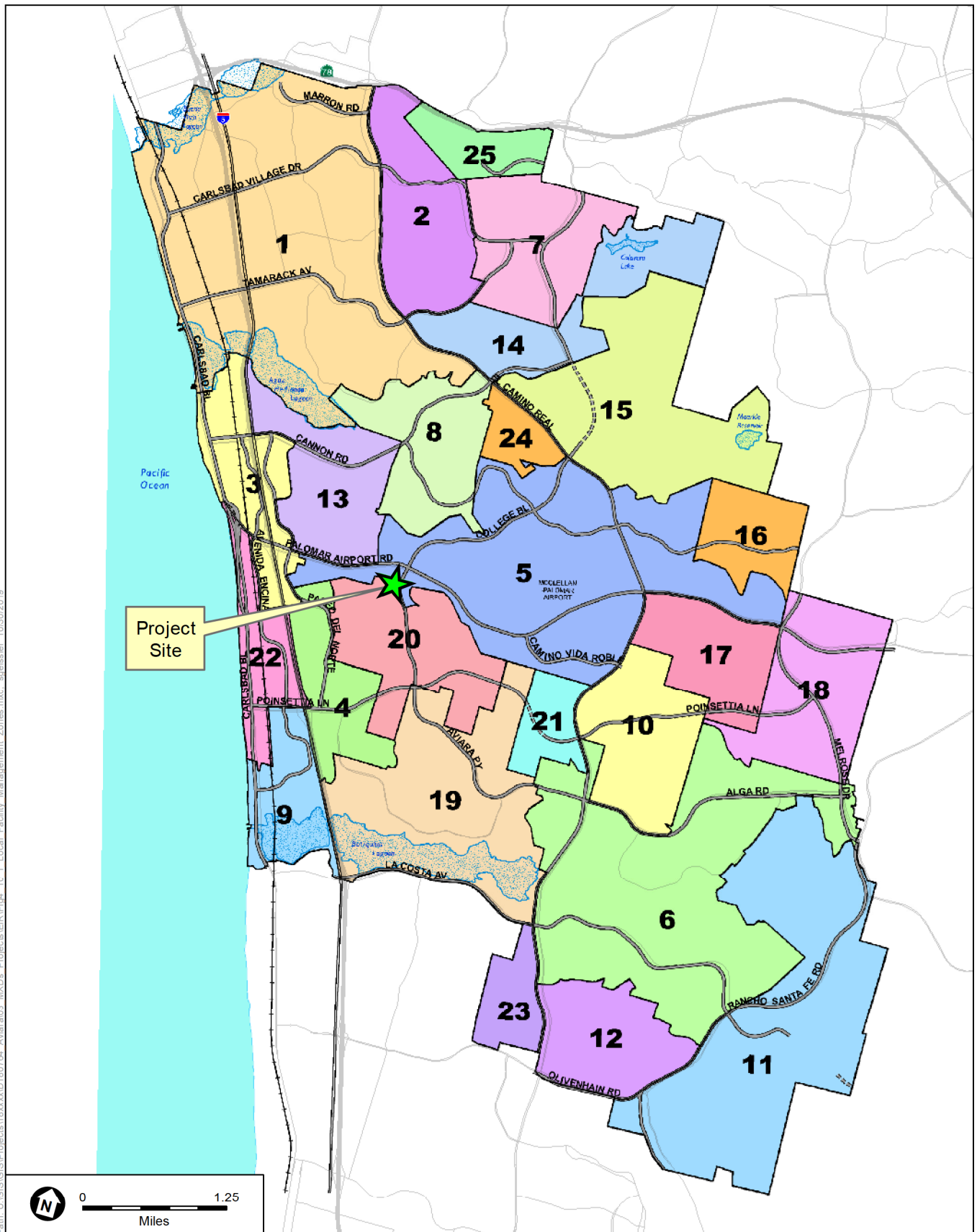
The city's Zoning Ordinance provides the physical land use planning criteria for development within the city. As indicated in Figure 3-5, *Zoning Map*, the project site is zoned Residential Density-Multiple (RD-M). This zone permits single- to multi-family residential uses, mobile homes, residential care facilities, supportive housing, and transitional housing. A variety of other uses are permitted with a Conditional Use Permit (CUP) in accordance with Carlsbad Municipal Code (CMC) Section 21.24.020. Under the RD-M zoning, the allowable maximum building height is 35 feet and the maximum lot coverage is 60%. Other applicable development standards set forth in the Zoning Ordinance (e.g., setbacks, parking requirements, parkway widths) also apply (City of Carlsbad, 2003).

As indicated in Figure 3-5, *Zoning Map*, the West Parcel is abutted by land zoned Open Space (OS) to the north and west, and Residential (R-1-10,000-Q) to the south, while the East Parcel is abutted by land zoned OS to the north, RD-M to the south (across Laurel Tree Lane), and OS (across Laurel Tree Lane) to the east (City of Carlsbad, 2003).

Growth Management Plan/Local Facilities Management Plan

Chapter 21.90 of the CMC enacts the city's GMP, which guides balanced growth and development within the city by ensuring adequate housing, utilities, and public services and facilities. Pursuant to the GMP and Chapter 21.90 of the CMC, the city is organized into 25 zones with LFMPs for each zone, which analyze and establish a plan for supplying the public facilities that will be needed to accommodate development. Under the GMP, development can only occur when specific performance standards are met by the development (City of Carlsbad, 2019a).

As shown in **Figure 4.10-1**, *Local Facility Management Zones*, the project site is located within LFMP Zone 5 which covers a portion of the city for several miles around the McClellan-Palomar Airport (e.g., from roughly El Camino Real in the north to Camino Vida Roble in the south, and from Melrose Drive in the east to Paseo Del Norte in the west) (City of Carlsbad, 2019b). See Section 4.13, *Public Services*, and Section 4.16, *Utilities and Service Systems*, of this EIR for a discussion and analysis of public services and utility infrastructure.



SOURCE: City of Carlsbad, 2019; Open Street Map, 2019.

Avira Apartments Project



Figure 4.10-1
Local Facility Management Zones

City Council Policy 43

City Council Policy 43 is the established policy for the number and allocation of Proposition E (Growth Management) “excess” dwelling units. Policy 43 establishes the city’s policy regarding the number and the criteria for allocation of “excess” dwelling units which have become available as a result of residential projects being approved and constructed with less dwelling units than would have been allowed by the density control points of the GMP as approved by the voters on November 4, 1986, as Proposition E.

Under city policy, “excess” dwelling units may be allocated to projects located in any quadrant of the city as long as the number of residential units constructed in each quadrant does not violate the dwelling unit limitations established by Proposition E. Refer to Section 4.12, *Population and Housing*, for further discussion on City Council Policy 43.

Environment Ordinance (CMC, Title 19)

The city’s Environment Ordinance provides for the enhancement and protection of the environment within the city. It establishes principles, criteria, and procedures for evaluating environmental impacts, consistent with the General Plan and CEQA.

Subdivision Ordinance (CMC, Title 20)

The city’s Subdivision Ordinance implements Title 7, Division 2 of the California Government Code (Subdivision Map Act) and sets procedures to regulate the division of land. Both the General Plan and the Subdivision Ordinance govern the design of the subdivision, lot size, and types of improvements required as conditions of approval (COA).

Grading and Drainage Ordinances (CMC, Title 15)

The City's Grading Ordinance establishes minimum requirements for grading, including clearing and grubbing of vegetation, in order to protect life and property, improve the physical environment of the community, and preserve the natural scenic character of Carlsbad. The Drainage Ordinance ensures the timely completion of planned local storm drainage, flood control and water pollution control improvements, and protection of receiving waters and wetlands in a manner pursuant to and consistent with the CWA and MS4 permit.

California Building Code (CMC, Title 18)

The City of Carlsbad Building Code regulates the design, construction, occupancy, and location of buildings through standards to safeguard health, property, and public welfare. Title 18 of the CMC adopts the 2016 California Building Code by reference. The California Building Code was developed by the California Building Standards Commission (CBSC). All residential, industrial, and commercial development in the city must conform to the provisions of this code.

Fire Prevention Code (CMC, Title 17)

The city’s Fire Prevention Code establishes the minimum requirements to safeguard the public health, safety and general welfare from the hazards of fire, explosion or dangerous condition in new and existing buildings, structures and premises, and to provide safety and assistance to fire

fighters and emergency responders during emergency operations. The code incorporates the California Fire Code by reference.

Inclusionary Housing Ordinance (CMC, Title 21, Chapter 21.85)

The city adopted an Inclusionary Housing Ordinance established by the General Plan Housing Element to ensure that all residential development, including residential subdivisions, provide a range of housing opportunities for all economic segments of the population. The Ordinance states that it is the policy of the city to:

- Require that a minimum of 15% of all approved residential development be restricted to, and affordable to, lower-income households, subject to adjustment based on the granting of an inclusionary credit.
- Require that for those developments which provide ten or more units affordable to lower-income households, at least 10% of the lower-income units shall have three or more bedrooms.
- Under certain conditions, alternatives to on-site construction as a means of providing affordable units; and
- In specific cases, satisfying of inclusionary requirements through the payment of an in-lieu fee as an alternative to requiring inclusionary units to be constructed.

Per CMC Section 21.85.030, a project is required to provide 15% of the total units as affordable units. Per CMC Section 21.85.100, the city is able to provide offsets to developers that provide affordable housing in excess of the requirements of CMC Chapter 21.85. Offsets to developers could include a density increase or other development standards modifications (standards modifications), pursuant to a Site Development Plan (SDP), per CMC Section 21.53.120.

Planning Commission Resolution No. 7114 was adopted by the Planning Commission on July 24, 2015. Planning Commission Resolution No. 7114 identified several sites throughout the city, including the project site, and recommended them for a General Plan designation change to a designation that would allow for a greater density at the sites. As established in City Council Policy 43, any proposed residential density increases would require an allocation of units from the city's Excess Dwelling Unit Bank and is considered an incentive. In exchange for making this incentive available, the City Council resolved that it is required for any applicant proposing residential development at these sites to enter into an affordable housing agreement with the city to provide a minimum of 20% of the total housing units as affordable units. As such, per Planning Commission Resolution No. 7114, the project site requires a minimum of 20% of the total units to be affordable units.

Carlsbad Municipal Code, Title 21 (21.53.120) Affordable Housing Multi-Family Residential Projects, Site Development Plan Required

Title 21, Section 21.53.120 of the CMC states that development (both for multi-family residential and affordable housing) shall be subject to the development standards of the zone in which the development is located and/or any applicable specific or master plan, except for affordable housing projects as expressly modified by a SDP. Any modifications to the development standards must be shown on a modified SDP.

As explained above, the city is able to provide a density increase and development standards modifications to developers that provide affordable housing in excess of the requirements of CMC Chapter 21.85 pursuant to a Site Development Plan per CMC Section 21.53.120. Projects must be in conformity with the General Plan and adopted policies and goals of the city, must have no detrimental effect on public health, safety and welfare, and, in the coastal zone, any project processed pursuant to this chapter shall be consistent with all certified LCP provisions, with the exception of density.

In addition, the decision-making authority in approving a SDP may impose special conditions or requirements which are more restrictive than the development standards in the underlying zone or elsewhere that include provisions for, but are not limited to, the following:

- Density of use
- Compatibility with surrounding properties and land uses
- Parking standards
- Setbacks, yards, active and passive open space required as part of the entitlement process, and on-site recreational facilities
- Height and bulk of buildings
- Fences and walls
- Signs
- Additional landscaping
- Grading, slopes and drainage
- Time period within which the project or any phases of the project shall be completed
- Points of ingress and egress
- Such other conditions as deemed necessary to ensure conformity with the General Plan and other adopted policies, goals or objectives of the city

In addition, the decision-making authority may require that the developer provide public improvements either on or off the subject site as are needed to serve the proposed development or to mitigate public facilities needs or impacts created by the project.

Livable Neighborhoods Design Guidelines (Council Policy No. 66)

The city developed principles for the development of livable neighborhoods. Livable neighborhoods have a sense of identity and community where: residents are encouraged to walk instead of using cars; homes are in scale with their lots; streets are pedestrian-friendly with walkways to common destinations such as schools, parks, stores, and transit; houses are interesting to look at with strong architectural elements; and open spaces form focal points, gathering places, and recreational spaces for a variety of age groups.

Landscape Manual

The policies, programs and requirements of the city's Landscape Manual apply to all public and private development requiring discretionary permits or submittal of landscape plans for development permits. The Landscape Manual contains policies and requirements associated with planting, irrigation, water conservation, streetscape, slope revegetation/erosion control, and fire protection. These policies and requirements are minimum standards and projects are encouraged to exceed the standards whenever possible. However, variances may be granted from the policies and requirements of the manual if undue hardships or special circumstances make a variance request necessary.

Open Space and Conservation Resource Management Plan

The city's Open Space and Conservation Resource Management Plan is a vital component of the implementation program for the city's Open Space, Conservation and Recreation Element of the General Plan. The main objective of the plan is to protect the open space resources and landscape identity of the city while allowing for growth opportunities.

As indicated previously, portions of the project site are adjacent to land designated and zoned for open space. Furthermore, some of the open space abutting the project site is designated in the city's HMP as Hardline, including the Encinas Creek riparian corridor located immediately north of the project site (Helix, 2018). See further discussion on the Carlsbad HMP below.

City of Carlsbad Habitat Management Plan

The city's HMP is a comprehensive, citywide conservation program whose purpose is to identify and preserve sensitive biological resources within the city while allowing for additional development consistent with the city's General Plan and GMP. Specific biological objectives of the HMP are to conserve the full range of vegetation types remaining in the city, with a focus on protecting rare and special-status habitats and species. The HMP acts as a Subarea Plan to the overall Multiple Habitat Conservation Plan that was approved and finalized by the SANDAG Board of Directors in 2003. As indicated above, some of the open space abutting the project site is designated by the HMP as Hardline, including the Encinas Creek corridor located immediately north of the project site (Helix, 2018). However, the site itself is located outside of the HMP Focus Planning Area (i.e., Cores, Linkages, and Special Resource Areas), and is therefore not within an existing or proposed Hardline or Standards Area (Helix, 2018). See Figure 4.3-2, *Carlsbad HMP Designations*, for a map of the designated Hardline in the vicinity of the project site.

HMP Section D-7 requires that buffers be provided between all preserved habitat areas (like the Encinas Creek riparian corridor) and development. Minimum buffer widths required are as follows: 100 feet for wetland areas; 50 feet for riparian areas; and 20 feet for uplands. No development, grading, or alterations, including clearing of vegetation, shall occur in the buffer area except for fuel modification Zone 3 to a maximum of 20 feet for upland and non-riparian habitat and recreation trails and public pathways within the first 15 feet of the buffer closest to the development. No fuel modification shall take place within 50 feet of riparian areas. Proposed reductions in buffer widths require information to determine that the reduced buffer would

adequately protect the resources, such as information on size and type of development and/or proposed mitigation that would also achieve the purpose of the buffer. Buffer areas that do not contain native habitat shall be landscaped using native plants. Signage and physical barriers such as walls or fences shall be required to minimize edge effects of development (Helix, 2018). See Section 4.3, *Biological Resources*, of this EIR for further discussion.

City of Carlsbad Local Coastal Program

The city's LCP, adopted in 1996, includes the city's land use plans, policies, and standards and the Zoning Ordinance for the city's coastal zone. The LCP meets the requirements and implements the provisions and policies of the California Coastal Act. The city's LCP includes six planning areas or segments that cover approximately one-third of the city.

The project site is located within the Mello II Segment of the city's LCP. The Mello II Segment Land Use Plan addresses the topical areas of land use, agriculture, environmental, geologic hazards, public works, recreation/visitor facilities, shoreline access, and visual resources. The Mello II Land Use Plan has designated the project site as R-30 consistent with the city's General Plan land use designation of the site, while the LCP Zoning Map has zoned the site RD-M consistent with the city's Zoning Map.

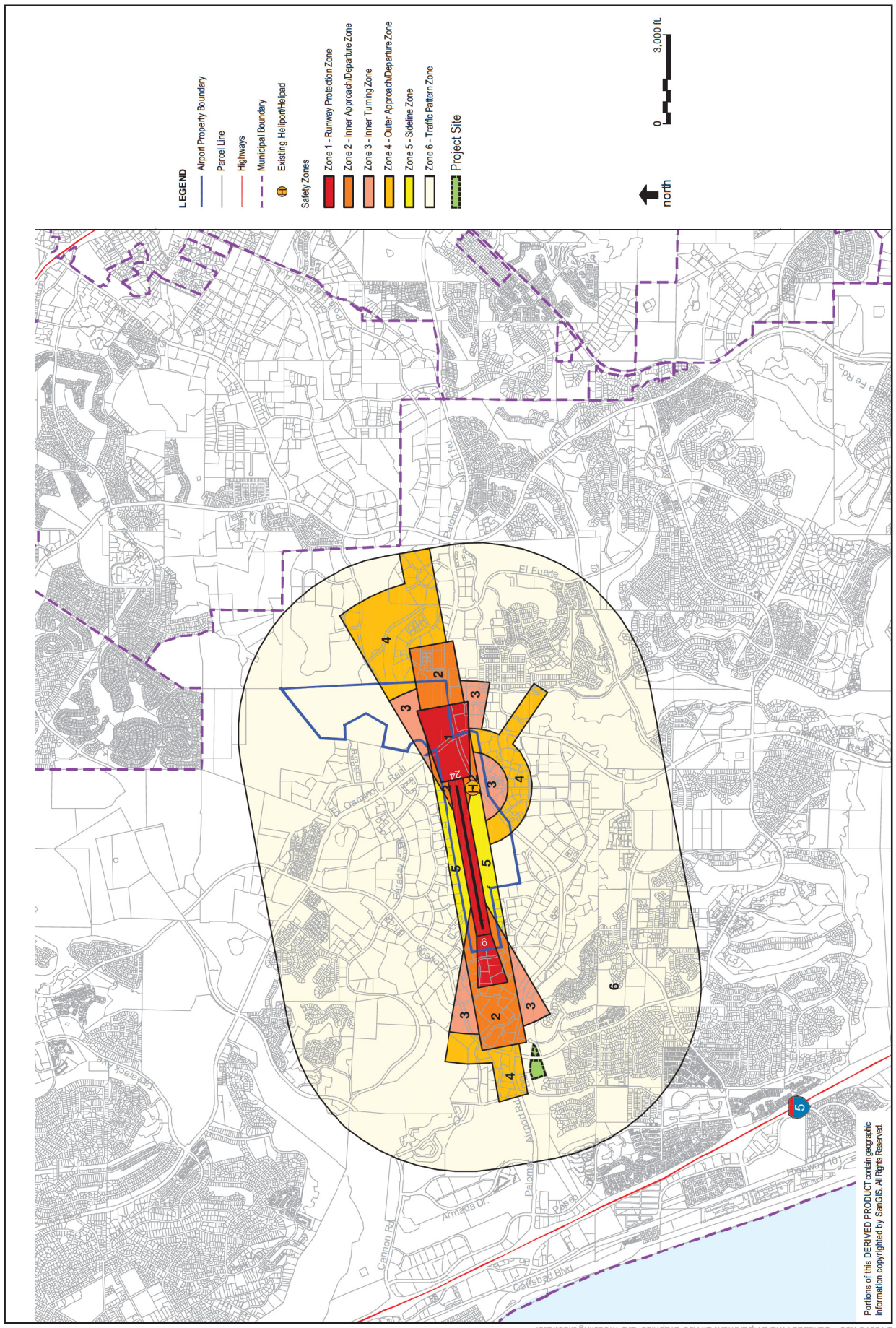
McClellan-Palomar Airport Land Use Compatibility Plan

California law requires preparation of airport land use compatibility plans for each public-use and military airport in the state. The basic function of such plans is to promote compatibility between airports and the land uses that surround them. For McClellan-Palomar Airport, the San Diego County Airport Land Use Commission (ALUC) has prepared and adopted the McClellan-Palomar ALUCP. As required by state law, the City of Carlsbad's General Plan must be consistent with the adopted ALUCP. If the city chooses to overrule a finding of the ALUC as stated in the ALUCP, it may do so by a two-thirds vote if it makes specific findings that the General Plan is consistent with the intent of state airport land use planning statutes.

Based on a review of the ALUCP and as indicated in **Figure 4.10-2, *McClellan-Palomar Airport Safety Zones***, the project site is located in ALUCP Airport Influence Review Area 1, Safety Zone 6 (Traffic Pattern Zones), the ALUCP's Airport Overflight Notification Area, and the 60–65 A-weighted decibel (dBA) community noise equivalent level (CNEL) noise contours of the ALUCP (SDCRAA, 2010). The project site is also located within the Federal Aviation Administration (FAA) Height Notification Boundary and is subject to the Part 77 Safe Efficient Use, and Preservation of the Navigable Airspace regulations (SDCRAA, 2010).

Commonly used terms defined in the ALUCP and applicable to the proposed project include:

- ***AIA***: The AIA defines the jurisdiction of the ALUC and is the area where airport-related noise, safety, airspace protection, and overflight factors may significantly affect land use compatibility or necessitate restrictions on certain land uses as determined by the ALUC. Land use actions that affect property within the AIA are subject to the compatibility policies and criteria in this Compatibility Plan.



Aviara Apartments Project
Figure 4.10-2
 McClellan-Palomar Airport Safety Zones

SOURCE: Airport Land Use Commission for San Diego County, McClellan-Palomar Airport Land Use Compatibility Plan, adopted January 25, 2010, amended March 4, 2010 and December 1, 2011



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- **Review Area 1:** This area consists of locations where noise and safety concerns may require limitations on the types of land use actions. Specifically, Review Area 1 encompasses locations exposed to aircraft noise levels of 60 dB CNEL or greater together with all safety zones.
- **Overflight Notification:** An overflight notification is a buyer awareness tool designed to ensure that prospective buyers of property near an airport, particularly residential property, are informed about the airport's potential impact on the property. An overflight notification is recorded in the property's chain of title and indicates that the property may be subject to some of the annoyances or inconveniences associated with proximity to an airport and aircraft operations (such as noise, vibration, overflights, or odors). Unlike an aviation easement, an overflight notification does not convey property rights from the property owner to the airport and does not restrict the height of objects. It simply documents the existence of conditions that may affect the property.
- **Part 77:** The part of the Federal Aviation Regulations (Title 14 of the Code of Federal Regulations) that deals with objects affecting navigable airspace in the vicinity of airports. Part 77 establishes standards for identifying obstructions to navigable airspace, sets forth requirements for notice to the FAA of certain proposed construction or alteration, and provides for aeronautical studies of obstructions to determine their effect on the safe and efficient use of airspace.

4.10.3 Thresholds and Methodology

Thresholds

A significant impact would occur to land use and planning if the proposed project would:

- Physically divide an established community.
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Methodology

The analysis of whether the proposed project would physically divide an established community assesses the physical and regulatory context of the project site within the greater city and whether the proposed project would adversely alter this context by closing public streets or otherwise hindering access through the project site or surrounding areas.

The analysis of the proposed project's consistency with land use plans, policies and regulations assesses whether the proposed project would be in conformance with (or not conflict with) adopted regional and local plans, policies and regulations that are applicable to the proposed project and project site. Consistent with the requirements of the *CEQA Guidelines*, this discussion focuses on those land use goals, policies and regulations that relate to avoiding or mitigating environmental impacts, recognizing that an inconsistency with a plan, policy, or regulation does not necessarily equate to a significant physical impact on the environment. The analysis, therefore, considers whether any inconsistencies create a significant physical impact on the environment.

4.10.4 Project Impact Analysis

Division of an Established Community

Impact 4.10-1: Would the proposed project physically divide an established community?

The project site is currently developed with a warehouse, loading dock, shed, and ancillary parking and roads that support packaging and wholesale-selling of flowers and flower supplies (Arcadis, 2016a). The proposed project would demolish these existing structures and develop two multi-family apartment buildings and associated amenities, establishing a multi-family apartment community. Upon buildout, the new residential uses on the West and East Parcels would represent an extension of existing residential development south of these parcels, and would represent infill development in the sense that urban development already exists both north (across the Encinas Creek riparian corridor) and south of the project site.

The proposed project would not close any existing streets (e.g., Aviara Parkway, Laurel Tree Lane), and would not hinder existing public access through the project site as no access currently exists (e.g., no public roads, trails). In fact, although the proposed on-site streets would be private, they would provide emergency access not only to the proposed project but to the surrounding open space. The proposed project would not interfere with either the existing sidewalks along both sides of Aviara Parkway or the existing Class II bike facility running along both sides of Aviara Parkway, in the vicinity of the project site. Lastly, an 8-foot-wide pedestrian access trail would be developed on a portion of the West Parcel, and a sidewalk would be provided along the East Parcel's Laurel Tree Lane frontage, thereby increasing pedestrian access and circulation. As such, the proposed project would not physically divide an established community, and the impact would be **less than significant**.

Consistency with Plans

Impact 4.10-2: Would the proposed project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

As indicated in the following analyses, the proposed project would be largely consistent with applicable land uses plans, policies and regulations including the SANDAG Regional Plan, the city's General Plan, the Zoning Ordinance, the GMP/LFMP, the LCP, SDP requirements, Livable Neighborhoods Design Guidelines, the Landscape Manual, the Open Space and Conservation Resource Management Plan, the HMP, and the McClellan-Palomar Airport ALUCP.

Development of the project would require adherence to a variety of regulatory requirements, codes, and ordinances. When regulations or codes (in whole or in part) are required, establish specific performance standards (e.g., design requirements or construction or engineering standards), and do not require any discretionary action by a governmental agency in implementation, it is assumed the project would satisfy those requirements.

The project would not cause a significant environmental impact due to a conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigation an environmental

effect. Therefore, the consistency with plans impacts of the proposed project would be **less than significant**.

SANDAG San Diego Forward: The Regional Plan

The SANDAG Regional Plan identifies strategies to move the San Diego region toward sustainability. This includes focusing housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit. As indicated previously, the Regional Plan identifies five strategies to move the San Diego region toward sustainability. These strategies, and an analysis of the proposed project’s consistency with them, are provided in **Table-4.10-1, SANDAG Regional Plan Consistency Determination Summary**. As indicated therein, the proposed project would be consistent with the Regional Plan.

**TABLE 4.10-1
 SANDAG REGIONAL PLAN CONSISTENCY DETERMINATION SUMMARY**

Sustainability Strategies	Consistency Determination
Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.	Consistent. The project site is located within the Urban Area Transit Strategy Boundary, according to the Smart Growth Concept Map, and near other transportation infrastructure (e.g., Aviara Parkway, Laurel Tree Lane, McClellan-Palomar Airport, Interstate-5, and North County Transit District (NCTD) BREEZE Routes 444 and 445) and jobs. The project would be focus housing growth in an infill development with existing and planned infrastructure.
Protect the environment and help ensure the success of smart growth land use policies by preserving sensitive habitat, open space, cultural resources, and farmland.	Consistent. The proposed project would build high-density housing near transit. The project site is zoned for high-density urban uses so it would not cause development on any sites used for open space, farmland, or cultural resources. Additionally, a 50-foot native vegetation buffer would separate the project from the Encinas Creek riparian corridor.
Invest in a transportation network that gives people transportation choices and reduces greenhouse gas emissions.	Consistent. The proposed project would build high-density housing near transit. It would also maintain existing sidewalks and bikeways, develop a new sidewalk, implement a Transportation Demand Management (TDM) program, and pay Transportation Impact Fees for transit improvements (MBI, 2019).
Address the housing needs of all economic segments of the population.	Consistent. The proposed project would include 82 affordable units, available to residents with incomes from 90% of the Area Median Income (AMI) to 30% of the AMI.
Implement the Regional Plan through incentives and collaboration.	Consistent. The proposed project would develop affordable housing and high-density housing near transit.

SOURCE: ESA, August 2019.

City of Carlsbad General Plan

As indicated previously, the project site is designated R-30 (Residential, 23-30 du/ac). This designation permits residential development at a density of 23–30 du/ac, with permitted housing types including two-family dwellings (i.e., two attached dwellings) and multi-family dwellings (i.e., three or more attached dwellings) (City of Carlsbad, 2015).

The proposed project would develop 329 residential units and associated parking, amenities and open space, with a residential density of 40 du/ac. The proposed project would be consistent with the type of residential uses permitted by the R-30 designation; however, it would exceed the maximum allowable unit count of 285 dwelling units by 44 dwelling units and allowable maximum residential density of 30 du/ac anticipated in the General Plan by 10 du/ac. According

to Chapter 21.85 (Inclusionary Housing Ordinance) and Section 21.53.120 of the CMC, an increase in units can be incorporated into a project provided the amount of affordable housing proposed by the project is in excess of the requirements stated in CMC Chapter 21.85 (as described above). In addition, Planning Commission Resolution No. 7114 allocated the project site 224 units from the city's Excess Dwelling Unit Bank as part of the General Plan update process and required that a minimum of 20% of all housing units to be provided as affordable housing units. Of the proposed 329 housing units, 25% (or 82 units) would be affordable units, thereby qualifying for the density increase allowed by city policy. Per CMC Section 21.85.100, the city is able to provide offsets to developers that provide affordable housing in excess of the requirements of CMC Chapter 21.85. Offsets to developers can include a density increase or other standards modifications, pursuant to a modified SDP (per CMC Section 21.53.120). With submittal of a modified SDP and Affordable Housing Agreement to the city for review and approval, and with the approval by the city for the requested density increase, the proposed project would be consistent with the city's R-30 General Plan land use designation for the project site.

Table 4.10-2, *General Plan Consistency Determination Summary*, provides a summary of the applicable General Plan land use goals and policies, and a project consistency discussion for each. As indicated therein, the proposed project would be largely consistent with the applicable land use goals and policies of the General Plan, would not obstruct implementation of these goals and policies, and in certain instances would exceed and further assist the city in achieving these goals and policies.

City of Carlsbad Zoning Ordinance

As indicated previously, the project site is zoned Residential Density-Multiple (RD-M). This zone permits single- to multi-family residential uses, mobile homes, residential care facilities, supportive housing, and transitional housing. A variety of other uses are permitted with a CUP in accordance with CMC Section 21.24.020. Under the RD-M zoning, the allowable maximum building height is 35 feet and the maximum lot coverage is 60%. Other applicable development standards set forth in the Zoning Ordinance (e.g., setbacks, parking requirements, parkway widths, etc.) also apply (City of Carlsbad, 2003). The proposed project would be developed and designed in conformance with the development standards applicable to the R-30 General Plan land use designation and RD-M zone, as modified by the proposed SDP as standards modifications permitted under CMC Section 21.53.120 (modified development standards for affordable housing projects).

The proposed project would develop 329 units of multi-family rental housing units and associated parking, amenities and open space, with a residential density of 40 du/ac, maximum building heights of 50 feet (with some architectural features reaching approximately 60 feet), and lot coverages of 44.5% on the West Parcel and 40.7% on the East Parcel. With city approval of a modified SDP, the proposed land uses and lot coverage would be consistent with those permitted in the city's RD-M zone, as permitted under CMC Section 21.53.120.

**TABLE 4.10-2
GENERAL PLAN CONSISTENCY DETERMINATION SUMMARY**

General Plan Goal/Policy	Consistency Determination
Land Use and Community Design Element	
Goal 2-G-1: Maintain a land use program with amount, design and arrangement of varied uses that serve to protect and enhance the character and image of the city as expressed in the Carlsbad Community Vision, and balance development with preservation and enhancement of open space.	Consistent. The project site is zoned for high-density urban uses so it would not cause development on any sites used for open space. It would prevent urban sprawl because it is an infill development close to transit. The project would enhance the character and image of the city by providing high quality architecture, street trees, landscaping, open space, and a market rate and affordable apartment community. Additionally, a 50-foot native vegetation buffer would separate the project from the Encinas Creek riparian corridor. The project would include 82 affordable units (or 25% of all units), which would exceed the requirements of Carlsbad Municipal Code CMC Chapter 21.85 and Planning Commission Resolution No. 7114. The housing would help the City meet its SANDAG identified share in the regional housing needs assessment (RHNA).
Goal 2-G-2: Promote a diversity of compatible land uses throughout the city, to enable people to live close to job locations, adequate and convenient commercial services, and public support systems such as transit, parks, schools, and utilities.	Consistent. The project site is located within the Urban Area Transit Strategy Boundary and near other transportation infrastructure and jobs. The project is in close proximity to retail, utilities, services, transit, and employment opportunities. It is an infill development that is near other existing residential development to the south of the project site. The proposed project would promote a diversity of compatible land uses by developing residential uses that complement and extend the existing residential development south of the project site along Aviara Parkway and Laurel Tree Lane. Furthermore, according to the Smart Growth Concept Map, the project site is located within the Urban Area Transit Strategy Boundary (SANDAG, 2016). The project site is also already partially developed. Hence, the proposed project would occur in an urbanized area, and as indicated in the response to Goal 2-G.1 above, would represent infill development rather than urban sprawl. Lastly, the proposed project would include residential development in proximity to existing residential development, and in close proximity to community retail shopping opportunities, utilities, services, and transit facilities. The proposed project would also include residential development relatively close to employment opportunities. Hence, the proposed project would include residential uses that enable people to live close to jobs, adequate and convenient commercial services, and public support systems
Goal 2-G-3: Promote infill development that makes efficient use of limited land supply, while ensuring compatibility and integration with existing uses. Ensure that infill properties develop with uses and development intensities supporting a cohesive development pattern.	Consistent. See response to 2-G-2.

General Plan Goal/Policy

Consistency Determination

Goal 2-G.4: Provide balanced neighborhoods with a variety of housing types and density ranges to meet the diverse demographic, economic and social needs of residents, while ensuring a cohesive urban form with careful regard for compatibility.

Consistent. The proposed project meets the diverse demographic, economic and social needs of residents by including 329 multi-family apartment dwelling units, including 247 market rate units and 82 affordable units (e.g., 25% of the total). Units would include studios and one-, two-, and three-bedroom units, with the affordable units available to residents with incomes from 90% Area Median Income (AMI) to 30% AMI. The proposed project would promote a diversity of compatible land uses by developing residential uses that complement and extend the existing residential development south of the project site along Aviara Parkway and Laurel Tree Lane. Lastly, as described in Section 4.1, *Aesthetics*, of this EIR, the proposed project would be developed with high-quality architecture, and would be required to conform to city zoning and other ordinances regarding aesthetic qualities. Therefore, the proposed project would contribute high-density residential development that would meet the diverse needs of city residents while ensuring a cohesive urban form that would be compatible with existing development.

Goal 2-G.15: Support agricultural uses throughout the city while planning for the transition of agriculture to other uses.

Consistent. As indicated in Figure 3-3, *General Plan Land Use Map*, and Figure 3-5, *Zoning Map*, the project site is designated by the city's General Plan as R-30 and zoned RD-M. These uses are for urban (e.g., high-density residential), rather than farming use. As further indicated in these figures, the parcels surrounding the project site are all designated and zoned for urban or open space rather than agricultural use. Hence, the proposed project would not convert agricultural land or land designated for agriculture to non-agricultural use or conflict with zoning for such use.

Goal 2-G.16: Enhance Carlsbad's character and image as a desirable residential, beach and open space oriented community.

Consistent. The proposed project would enhance Carlsbad's character and image as a desirable residential, beach and open-space oriented community. This would be accomplished by: providing an infill development, market-rate and affordable multi-family apartment community; wrapping the proposed residential development around the parking structure on the West Parcel; providing high quality architecture, street trees, landscaping and open space that meet or exceed city requirements; and being subject to city design review/approval.

Goal 2-G.17: Ensure that the scale and character of new development is appropriate to the setting and intended use. Promote development that is scaled and sited to respect the natural terrain, where hills, public realm, parks, open space, trees, and distant vistas, rather than buildings, dominate the overall landscape, while developing the Village, Barrio, and commercial and industrial areas as concentrated urban-scaled nodes.

Consistent. The proposed project would be developed and designed in conformance with the development standards applicable to the R-30 General Plan land use designation and RD-M zone, as modified by the standards modification permitted under CMC Section 21.53.120 (i.e., modified development standards for affordable housing projects). These modified development standards have been formulated to ensure that the scale and character of new development is appropriate to the setting and intended use, and is consistent with adjacent land uses. Furthermore, the proposed project would include features to ensure compatibility with adjacent uses, including street trees along the project site's Aviara Parkway and Laurel Tree Lane frontages, and the provision of a 50-foot-wide open space buffer planted with native plant species in the northern portion of the West Parcel along the Encinas Creek riparian corridor. Lastly, both the West and East Parcels are at lower elevations than the existing adjacent residential development to the south, and as indicated in the visual simulations in Section 4.1, *Aesthetics*, of this EIR, the tops of the buildings associated with the proposed project would be below the ridgelines seen by the residential uses to the south. As such, the proposed project would be consistent with the existing natural terrain. See Section 4.1, *Aesthetics*, for further discussion.

General Plan Goal/Policy

Goal 2-G.18: Ensure that new development fosters a sense of community and is designed with the focus on residents, including children, the disabled and the elderly, by providing: safe, pedestrian-friendly, tree-lined streets; walkways to common destinations such as schools, bikeways, trails, parks and stores; homes that exhibit visual diversity, pedestrian-scale and prominence to the street; central gathering places; and recreation amenities for a variety of age groups.

Consistency Determination

Consistent. The proposed project would foster a sense of community since it is designed with the focus on residents, provides pedestrian-connectivity to common destinations, and exhibits visual diversity and pedestrian scale. The project would include multiple apartment amenities, extensive landscaping, street trees, sidewalks, bike lanes, and high quality architecture design. The proposed project would provide:

- 37,570 square feet of amenities, including a multipurposeclub room, fitness facility, Wi-Fi café, outdoor recreation area and pool courtyard, outdoor lounge area, two passive courtyards, arrival yard and entry plaza on the West Parcel, and outdoor recreation area, courtyard, and arrival yard and entry plaza on the East Parcel;
- Extensive landscaping, including street trees along the project site Aviara Parkway and Laurel Tree Lane frontages, and landscaping of on-site open space areas, consistent with and/or exceeding the city's Landscape Manual Requirements;
- On-site pedestrian paths and a new sidewalk along the East Parcel's Laurel Tree Lane frontage that connect with the existing sidewalks along the West and East Parcel's Aviara Parkway frontages, to provide pedestrian connectivity to adjacent parcels, schools and parks in the area;
- Preservation of the existing Class II bike lane along both sides of Aviara Parkway, and
- High quality architecture, building articulation, varied setbacks, and other design features, all of which would undergo city design review.

Goal 2-G.21: Ensure that adequate public facilities and services are provided in a timely manner to preserve the quality of life of residents.

Consistent. As indicated in Section 4.13, *Public Services*, of this EIR, the project site is served by existing public services (police, fire, schools, parks, and libraries). As indicated in Section 4.16, *Utilities and Service Systems*, of this EIR, existing water and sewer lines are located along Aviara Parkway.

A road segment has been identified within LFMP Zone 5 that does not meet current GMP performance standards. If the performance standards are not met and the City Council adopts an ordinance prohibiting development in LFMP Zone 5, then no development permits or building permits shall be issued within the zone until the performance standard is met or arrangements satisfactory to the City Council guaranteeing the facilities and improvements will be made. The City Council may choose to exempt this road segment, approve a project to improve the segment to an acceptable performance level, or other alternative. In the event the City Council exempts the road segment, the project would be required to participate in TDM and Transportation System Management (TSM). The project is already proposing to participate in TDM/TSM and would be expanded if necessary to meet the requirements of the GMP and the Mobility Element of the General Plan. In the event the City Council opts for a road improvement project or other solution, the developer would be required to pay their fair share of the improvements or otherwise meet the terms of the solution determined by the City Council. Furthermore, the LFMP process includes restrictions on the timing and phasing of development in relation to the provision of community services and infrastructure. The city's GMP policies, which are enforced in the LFMPs, would continue to monitor growth in the area to maintain adequate levels of service for the people living in Carlsbad. The proposed project would not require the provision of new or physically altered existing services or facilities. Thus, adequate public facilities and services are currently available to serve the proposed project consistent with this policy.

Policy 2-P.2: Update the city's Local Coastal Program to be consistent with the General Plan. Work with the California Coastal Commission to gain permitting authority for all areas of the city in the Coastal Zone.

Consistent. The city updated its LCP to be consistent with its General Plan and has permitting authority over the project site which is located in the coastal zone and the Mello II Segment of the LCP. Because the proposed project is consistent with the city's existing General Plan land use designation and zoning, it is consistent with the LCP.

General Plan Goal/Policy	Consistency Determination
<p>Policy 2-P.6: Encourage the provision of lower and moderate-income housing to meet the objectives of the Housing Element.</p>	<p>Consistent. The project would include 329 multi-family apartment dwelling units, including 247 market rate units and 82 affordable units (e.g., 25% of the total). The affordable units are available to residents with incomes from 90% AMI to 30% AMI. Therefore, the proposed project would address the housing needs of all economic segments of the population, including moderate income residents.</p>
<p>Policy 2-P.8: Do not permit residential development to exceed the applicable Growth Management Control Point (GMCP) density unless the following findings are made:</p> <ol style="list-style-type: none"> The project qualifies for and will receive an allocation of "excess" dwelling units, pursuant to City Council Policy No. 43. There have been sufficient residential projects approved at densities below the GMCP so the citywide and quadrant dwelling unit limits will not be exceeded as a result of the proposed project. All necessary public facilities required by the Citywide Facilities and Improvements Plan will be constructed, or are guaranteed to be constructed, concurrently with the need for them created by this development and in compliance with adopted city standards. 	<p>Consistent. The proposed project would provide 25% of the proposed 329 housing units as affordable units, thereby qualifying for a density increase and other standards modifications. According to the city's monthly Development Monitoring Report, as of October 2019, no citywide or quadrant dwelling unit limits had been exceeded, meaning that sufficient residential projects have been approved at densities below the Growth Management Control Point (GMCP). As further discussed in Section 4.12, <i>Population and Housing</i>, the proposed project would not exceed citywide or quadrant dwelling unit limits. Lastly, as indicated in Sections 4.13, <i>Public Services</i>, and 4.16, <i>Utilities and Service Systems</i>, of this EIR, adequate public services and utilities are currently available, or would be available after mitigation, to serve the proposed project. Therefore, with submittal of the required SDP and Affordable Housing Agreement to the city for review and approval, the approval by the city for the requested density increase and allocation of 105 excess dwelling units from the city's Excess Dwelling Units Bank, the proposed project would be consistent with the GMCP density.</p>
<p>Policy 2-P.9: Incentivize development of lower-income affordable housing by allowing residential development above the GMCP and maximum densities permitted by the General Plan, subject to the findings specified in 2-P.8, above, and an evaluation of the following: (a) the proposal's compatibility with adjacent land uses; and (b) the project site's proximity to a minimum of one of the following: freeway or major street; commercial center; employment opportunities; city park or open space; or commuter rail or transit center.</p>	<p>Consistent. With regard to affordable housing, densities above the GMCP density, and the findings of Policy 2-P.8, see the response to Policy 2-P.8 above. With regard to the required findings:</p> <ol style="list-style-type: none"> The proposed project would be compatible with the adjacent land uses by developing residential uses that complement and extend the existing residential development south of the project site along Aviara Parkway and Laurel Tree Lane. The proposed project would be located adjacent to a major arterial (Aviara Parkway) and within close proximity of I-5, the McClellan-Palomar Airport, and NCTD BREEZE Routes 444 and 445. The proposed project would be located adjacent to the existing residential development to the south, and would be in relatively close proximity of commercial/ employment centers and city parks). Lastly, as indicated in Section 4.13, <i>Public Services</i>, and Section 4.16, <i>Utilities and Service Systems</i>, of this EIR, adequate public services and utilities are currently available to serve the proposed project.
<p>Policy 2-P.10: Development on slopes, when permitted, shall be designed to minimize grading and comply with the hillside development provisions of the Zoning Ordinance and the Carlsbad Local Coastal Program.</p>	<p>Consistent. The vast majority of the West Parcel, and all of the East Parcel, have slopes ranging from 0 to 25% (REC, 2018). The northern most and southwest portions of the West Parcel have slopes of up to 40% or greater (REC, 2018). Furthermore, the slope area in the northern portion of the West Parcel would be preserved and planted with native vegetation as a buffer to the Encinas Creek riparian corridor. The southern and west portions of the East Parcel have slopes of up to 40% or greater (REC, 2018). Development over these sloped areas in both the East Parcel and West Parcel would occur. Where grading is proposed on project slopes greater than 15% and 15 feet in height, it would be subject to the city's Hillside Development Ordinance. All project development within these areas must comply with the standards contained within the city's Hillside Development Regulations (Chapter 21.95 in the CMC), unless otherwise approved by the city. Details regarding consistency with the city's Hillside Development regulations can be found in Section 4.1, <i>Aesthetics</i>. A Hillside Development Permit (HDP) is a required approval being sought for project, as noted in Chapter 3, <i>Project Description</i>.</p>

General Plan Goal/Policy

Policy 2-P.13: Encourage medium to higher density residential uses located in close proximity to commercial services, employment opportunities and major transportation corridors.

Policy 2-P.37: Require new development located in the Airport Influence Area (AIA) to comply with applicable land use compatibility provisions of the McClellan-Palomar Airport Land Use Compatibility Plan (ALUCP) through review and approval of a site development plan or other development permit. Unless otherwise approved by City Council, development proposals must be consistent or conditionally consistent with applicable land use compatibility policies with respect to noise, safety, airspace protection, and overflight notification, as contained in the McClellan-Palomar ALUCP. Additionally, development proposals must meet Federal Aviation Administration (FAA) requirements with respect to building height as well as the provision of obstruction lighting when appurtenances are permitted to penetrate the transitional surface (a 7:1 slope from the runway primary surface). Consider San Diego County Regional Airport Authority Airport Land Use Commission recommendations in the review of development proposals.

Policy 2-P.41: Ensure that the review of future projects places a high priority on the compatibility of adjacent land uses along the interface of different residential density and non-residential intensity categories. Special attention should be given to buffering and transitional methods, especially, when reviewing properties where different residential densities or land uses are involved.

Policy 2-P.42: Ensure that development on hillsides, where permitted pursuant to the hillside development regulations of the Zoning Ordinance, is designed to preserve and/or enhance the visual quality of the preexisting topography.

Consistency Determination

Consistent. See response to Policy 2-G.2.

Consistent. The project site is located in ALUCP AIA Safety Zone 6 (Traffic Pattern Zones), the ALUCP's Airport Overflight Notification Review Area 1, and the 60-65 CNEI noise contours of the ALUCP (SDCRAA, 2010). Residential properties located in these areas are required to comply with applicable land use compatibility and notification provisions of the ALUCP through review and approval of SDPs or other development permits with respect to noise, safety, airspace protection, and overflight notification. The ALUCP requires that all new residential projects located within the overflight notification area record a notice informing residents of potential environmental impacts related to aircraft operations. Compliance of the proposed project with the applicable requirements of the ALUCP mentioned above and in Section 4.11, *Noise and Vibration*, would be required and would ensure consistency with Policy 2-P.37. See the analysis under the "McClellan-Palomar Airport ALUCP" subheading below, and in Section 4.11, *Noise and Vibration*, of this EIR, for further discussion.

Consistent. The proposed project would include the development of high-density residential units in relatively close proximity to existing commercial uses in the north (across the Encinas Creek riparian corridor, which is designated Hardline and lower-density residential uses to the south (across an approximately 100-foot open space area south of the West Parcel and across Laurel Tree Lane south of the East Parcel). See Figure 3-2, *Project Site and Vicinity* for context. As indicated in Figure 3-7, *Proposed Development on the West Parcel*, and Figure 3-8, *Proposed Development on the East Parcel*, a 50-foot-wide buffer planted with native vegetation would be provided in the northern portion of the West Parcel, a sidewalk, street trees and other landscaping would be provided along the East Parcel's Laurel Tree Lane frontage. These project features, combined with the intervening Encinas riparian corridor north of the West and East Parcels and the open space south of the West Parcel, would buffer and provide transition area between the proposed residences and non-residential uses and lower-density residential development nearby. The proposed development on the West Parcel would be below the ridgelines visible to the north from the single-family residences south of the West Parcel, while the proposed development on the East Parcel would be similar to the existing multi-family residential uses located south of the East Parcel. For all these reasons, the proposed project would be compatible with the existing development in the project vicinity.

Consistent. See response to Policy 2-P.10.

General Plan Goal/Policy

Consistency Determination

Policy 2-P.43: Where feasible, locate development away from visible ridges; larger buildings, such as large retail stores and office and industrial development, should be arranged to minimize the buildings' visual appearance from major transportation corridors and vistas.

Consistent: The proposed project would not be developed on a ridgeline. As indicated in the visual simulations in Section 4.1, *Aesthetics*, of this EIR, the ridgelines visible across the project site to the north would continue to be visible from the off-site residential uses south of the West Parcel (refer to Figures 4.1-2 through 4.1-5, *Visual Simulations*). Furthermore, the visual appearance of the project buildings would be softened by landscaped open space along the West Parcel's Aviara Parkway frontage, and by street trees and landscaping along the East Parcel's Aviara Parkway frontage.

Policy 2-P.44: Encourage clustering of development to preserve natural terrain and maximize open space areas around developments.

Consistent. The project would cluster development in approximately 8.22 acres of the 9.5-acre project site and place, the balance (approximately 2.1 acres consisting mostly of hillside area) in permanent open space. Furthermore, the proposed project would represent infill development in the sense that it would focus new structures on the developed and disturbed portions of the site, rather than disturbing the undeveloped areas.

Policy 2-P.45: Evaluate each discretionary application for development of property with regard to the following specific criteria:

Consistent. The city would evaluate the proposed project as a discretionary application.

- a. Site design and layout of the proposed buildings in terms of size, height and location, to foster harmony with landscape and adjacent development.
- b. Site design and landscaping to provide buffers and screening where appropriate, conserve water, and reduce erosion and runoff.
- c. Building design that enhances neighborhood quality, and incorporates considerations of visual quality from key vantage points, such as major transportation corridors and intersections, and scenic vistas.
- d. Site and/or building design features that will reduce greenhouse gas emissions over the life of the project, as outlined in the Climate Action Plan.
- e. Provision of public and/or private usable open space and/or pathways designated in the Open Space, Conservation, and Recreation Element.
- f. Contributions to and extensions of existing systems of streets, foot or bicycle paths, trails, and the greenbelts provided for in the Mobility, and Open Space, Conservation, and Recreation elements of the General Plan.
- g. Compliance with the performance standards of the Growth Management Plan.

Regarding criterion a), the visual simulations (Figures 4.1-2 through 4.1-5) provided in Section 4.1, *Aesthetics*, demonstrate that the proposed project would be harmonious with the surrounding environment and therefore would not substantially degrade the existing visual character or quality of the project site and its surroundings. Building size, height, and location would be generally similar to adjacent development. Development on the East and West Parcel would be noticeable from the surrounding viewpoints, but would be consistent with the already urbanized setting. As mentioned under Goal 2-G.18 above, the proposed project would include high quality architecture, building articulation, varied setbacks, and other design features, all of which would undergo city review.

Regarding criterion b), the proposed project would install landscaping at the project site that would be designed in compliance with the city's Landscape Manual. The Landscape Manual contains policies and requirements associated with planting, irrigation, water conservation, streetscape, slope revegetation/erosion control, and fire protection. The project site would include street trees on the project site's frontages, and open space areas would be landscaped with native plants, including within the 50-foot buffer area established along the project site's northern border with Encinas Creek (i.e., where native habitat does not currently exist). Regarding criterion c), impacts to scenic quality, scenic vistas, and aesthetics are analyzed in Section 4.1, *Aesthetics*. Each figure for the visual simulations (Figures 4.1-2 through 4.1-5) provided in Section 4.1, *Aesthetics*, are simulations from different viewpoints near the project site. Viewpoint 1 (Figure 4.1-2) looks southward down College Boulevard/Aviara Parkway from just north of Palomar Airport Road. Viewpoint 2 (Figure 4.1-3) looks southwest from Palomar Airport Road. Viewpoint 3 (Figure 4.1-4) looks north down Aviara Parkway from just south of the Aviara Parkway/Laurel Tree Lane intersection. Viewpoint 4 (Figure 4.1-5) looks northeast across the project site from the public right of way within the single-family residential subdivision just southwest of the West Parcel. Though portions of the proposed project would be visible from these viewpoints, the area is already urbanized and the proposed project would be similar in size and layout when compared to development in the surrounding area. Impacts to visual character and quality of these public viewpoints were determined to be less than significant.

Regarding criterion d), the proposed project would include a solar photovoltaic system of 386 kW, a 20 percent reduction in water use, electric vehicle charging for 10% of the total parking spaces per the 2019 CalGreen Code, and a transportation demand management program to reduce vehicle miles travelled associated with the project by 10 to 15 percent. The proposed project is an infill development located within the Urban Area Transit Strategy Boundary near other transportation infrastructure and jobs.

Regarding criterion e), the proposed project would provide 37,570 square feet of resident amenities. No portions of the project site are designated as Open Space in the General Plan. As discussed above under Goal 2-G.18, the proposed project would foster a sense of community since it is designed with the focus on residents, provides pedestrian-connectivity to common destinations, and exhibits visual diversity and

General Plan Goal/Policy

- h. Development proposals which are designed to provide safe, easy pedestrian and bicycle linkages to nearby transportation corridors.
- i. Provision of housing affordable to lower and/or moderate income households.
- j. Policies and programs outlined in Local Coastal Program where applicable.
- k. Consistency with applicable provisions of the Airport Land Use Compatibility Plan for McClellan-Palomar Airport.

Consistency Determination

pedestrian scale. The discussion under Goal 2-G.18 provides a description of the onsite amenities, including landscaping improvements, pedestrian paths and sidewalks, and bicycle lanes. The discussion under Policy 3.P-32 provides a description of the circulation and access improvements near the project site, including the provision of bicycle lanes, ADA-compliant sidewalks, and benches and trash cans at nearby bus stops.

Regarding criteria f) and h), as discussed in Section 4.14, *Transportation*, the proposed project would provide adequate roadways and street improvements. As the city's Transportation Impact Analysis Guidelines and the Growth Management Plan (GMP) embody the requirements of the City of Carlsbad with regard to policies addressing the full range of circulation system requirements and improvements (including transit, roadway, bicycle, and pedestrian facilities) the project would be consistent with these plans and policies. As discussed under criterion e) and under Goal 2-G.18 and Policy 3.P-32, the proposed project would include numerous transportation and connectivity improvements such as landscaping improvements, pedestrian paths and sidewalks, bicycle lanes, and benches/trash cans at nearby bus stops.

Regarding criterion g), the proposed project's compliance with the GMP is discussed in-depth in Section 4.12, *Population and Housing*. As the GMP would be enforced through the CMC, implementation would be required and enforced by city staff as the proposed project moves through the development review process.

Regarding criterion i), the proposed project would include a total of 247 market-rate units and 82 affordable units (equating to 25% of all proposed units). The West Parcel would contain 247 market-rate and 12 affordable rental units. The East Parcel would contain 70 affordable rental units. Twelve of the one-bedroom units on the West Parcel would be set aside for residents with incomes that do not exceed 90% AMI. Of the 70 units on the East Parcel, 7 units would be set aside for residents with incomes that do not exceed 30% AMI, 62 units would be reserved for residents with incomes that do not exceed 60% AMI, and one unit would be the manager's unit.

Regarding criterion j), the city updated its LCP to be consistent with its General Plan and has permitting authority over the project site which is located in the coastal zone and the Meilo II Segment of the LCP. With submittal of a Site Development Plan and Affordable Housing Agreement to the city for review and approval, and with the approval by the city of the requested density increase, the proposed project is consistent with the city's existing General Plan land use designation and zoning, it is consistent with the LCP. Consistency with the policies and programs of the Local Coastal Program are discussed in Table 4.3-7, Project Consistency with the HMP and LCP, of Section 4.3, *Biological Resources*.

Regarding criterion k), see responses to Policy 2-P.37 above and Goal 5-G.1 below.

Consistent. See response to Goal 2-G.18 above.

Policy 2-P.46: Require new residential development to provide pedestrian and linkages, when feasible, which connect with nearby shopping centers, community centers, parks, schools, points of interest, major transportation corridors and the Carlsbad Trail System.

Policy 2-P.58: Require compliance with Growth Management Plan public facility performance standards, as specified in the Citywide Facilities and Improvements Plan, to ensure that adequate public facilities are provided prior to or concurrent with development.

Consistent. The LFMP process includes restrictions on the timing and phasing of development in relation to the provision of community services and infrastructure. The city's GMP policies, which are enforced in the LFMPs, would continue to monitor growth in the area to maintain adequate levels of service for the people living in Carlsbad. The proposed project complies with the LFMP process and the city's GMP policies, and development cannot proceed until adequate infrastructure is financially guaranteed to meet demand. See also response to Goal 2-G.21 above.

General Plan Goal/Policy	Consistency Determination
Mobility Element	
<p>Goal 3-G.1: Keep Carlsbad moving with livable streets that provide a safe, balanced, cost-effective, multi-modal transportation system (vehicles, pedestrians, bikes, transit), accommodating the mobility needs of all community members, including children, the elderly and the disabled.</p>	<p>Consistent. See response to Goal 2-G.18 above.</p>
<p>Goal 3-G.2: Improve connectivity for residents, visitors and businesses.</p>	<p>Consistent. See response to Goal 2-G.18 above.</p>
<p>Goal 3-G.3: Provide inviting streetscapes that encourage walking and promote livable streets.</p>	<p>Consistent. See response to Goal 2-G.18 above.</p>
<p>Policy 3.P.32: Require developers to improve pedestrian and bicycle connectivity consistent with the city's bicycle and pedestrian master plans and trails master planning efforts. In addition, new residential developments should demonstrate that a safe route to school and transit is provided to nearby schools and transit stations within a half mile walking distance.</p>	<p>Consistent. Existing sidewalks are located along the project site's Aviara Parkway frontages, and an existing Class II bike lane is located along both sides of Aviara Parkway. A new sidewalk would be provided along the East Parcels Laurel Tree Lane frontage. Public transit (e.g., NCTD BREEZE Routes 444 and 445) is located along Palomar Airport Road approximately 660 feet (0.015-mile) north of the project site. A safe route to existing transit routes on Palomar Airport Road is provided by the existing sidewalks along Aviara Parkway. There are no schools within a half mile walk to the project site. The school nearest to any component of the project site is the Pacific Rim Elementary School (1100 Camino De Las Ondas) located approximately 0.72 miles south of the site. In addition to the on-site circulation improvements, the project would also include several improvements consistent with the recommendations contained in the Transportation Impact Analysis prepared by Michael Baker International for the proposed project (MBI, 2019), which is included as Appendix J of this EIR. These improvements include:</p> <ol style="list-style-type: none"> 1. On Laurel Tree Lane, ADA-compliant sidewalk along the north side of Laurel Tree Lane would be provided. 2. On Laurel Tree Lane, Class II bicycle lanes from Aviara Parkway to the cul-de-sac would be striped. 3. For the segment of Aviara Parkway-College Boulevard from the project site to the bus stop 500' north of the intersection with Palomar Airport Road, an ADA accessible pad and bench would be installed. 4. For the segment of Aviara Parkway and Palomar Airport Road from the project site to the bus stop 130' west of the Aviara Parkway-College Boulevard/Palomar Airport Road intersection, a trash can and bench would be installed on the existing ADA accessible pad. 5. For the segment of Aviara Parkway and Palomar Airport Road from the project site to the transit stop 200' east of Aviara Parkway-College Boulevard/Palomar Airport Road intersection, 200' feet of sidewalk from College Boulevard to the existing transit stop would be constructed, per City standards. As well, a trash can, an accessible concrete pad, and a bench would be installed. 6. For the Aviara Parkway-College Boulevard / Palomar Airport Road intersection, a northbound overlap phase would be implemented. 7. For the Aviara Parkway / Laurel Tree Lane intersection, the existing southbound left turn pocket would be extended from 160 feet to 250 feet. 8. A Tier 2 TDM plan would be prepared and implemented. <p>As a result of these project features, both on-site and off-site, the proposed project is consistent with Policy 3-P.32 of the General Plan Mobility Element.</p>

Consistency Determination	
General Plan Goal/Policy	Consistency Determination
Open Space, Conservation, and Recreation Element	
<p>Goal 4-G-1: Develop a balanced and integrated open space system reflecting a variety of considerations – resource conservation, production of resources, recreation, and aesthetics and community identity – and ensuring synergies between various open space components and compatibility with land use planning.</p> <p>Goal 4-G-3: Protect environmentally sensitive lands, wildlife habitats, and rare, threatened or endangered plant and animal communities.</p> <p>Policy 4-P-9: Maintain and implement the city's Habitat Management Plan (HMP), including the requirement that all development projects comply with the HMP and related documents. Require assessments of biological resources prior to approval of any development on sites with sensitive habitat, as depicted in Figure 4-3.</p> <p>Policy 4-G-13: Protect air quality within the city and support efforts for enhanced regional air quality.</p> <p>Policy 4-P-15: Maintain functional wildlife corridors and habitat linkage in order to contribute to regional biodiversity and the viability of rare, unique or sensitive biological resources throughout the city.</p> <p>Policy 4-P-18: Require that, at the time of any discretionary approval, any land identified as open space for its habitat or scenic value shall have an appropriate easement and/or land use and zoning designation placed on it for resource protection.</p>	<p>Consistent. The proposed project consists of infill development and would contribute to a balanced and integrated open space system and maintain functional wildlife corridors by conserving 1.64 acres of the project site as permanent open space with a conservation easement (see Mitigation Measure BIO-2 in Section 4.3, <i>Biological Resources</i>). See response to Goal 2-G.1 above.</p> <p>Consistent. The project would not directly impact any environmentally sensitive habitat areas or special-status plant or wildlife species. Mitigation Measures BIO-1, BIO-2, and BIO-3, as outlined in Section 4.3, <i>Biological Resources</i>, would protect any sensitive species and habitats in the on-site open space.</p> <p>Consistent. The proposed project would fully comply with the HMP and related documents, as discussed in Impact 4.3-6 of Section 4.3, <i>Biological Resources</i>.</p> <p>Consistent. As discussed in Section 4.2, <i>Air Quality</i>, the proposed project is consistent with the goals and policies of the City of Carlsbad General Plan for planned population growth and land use designation. As a result, the proposed project is also consistent with the San Diego Association of Governments (SANDAG) growth projections, San Diego Air Pollution Control District (SDAPCD) Regional Air Quality Strategy (RAQS), and the State Implementation Plan. The proposed project would additionally meet the RAQS requirements for control measures intended to reduce emissions from construction activities.</p> <p>Consistent. As discussed in Section 4.3, <i>Biological Resources</i>, the proposed project would contribute to a balanced and integrated open space system and maintain functional wildlife corridors by conserving 1.64 acres of the project site as permanent open space with a conservation easement (see Mitigation Measure BIO-2). The project site encompasses developed and undeveloped land within the HMP, outside of HMP Core, Linkages, and Specific Resource Areas (SRAs). Open space portions of the biological survey area, which are identified as Existing Hardline in the HMP, generally follow the Encinas Creek riparian corridor. The proposed project would incorporate a 50-foot setback from the riparian dripline, as required by both the HMP and LCP, and would create native Diegan coastal sage scrub within the buffer area. This riparian buffer and habitat would be placed within the proposed project's open space preserve, which would represent a newly established HMP Hardline preserve area to connect to the Existing Hardline preserve area associated with Encinas Creek adjacent to the project site (see Mitigation Measure BIO-2 in Section 4.3, <i>Biological Resources</i>).</p> <p>Consistent. Consistent with Mitigation Measure BIO-2, the project applicant shall record two types of easements: an open space easement that will be recorded on the final map, and a conservation easement or restrictive covenant that will be recorded by the County of San Diego (see Mitigation Measure BIO-2 in Section 4.3, <i>Biological Resources</i>). The purpose of these easements are to preserve and manage open space.</p>

General Plan Goal/Policy

Policy 4-P.32: Where appropriate, designate as open space those areas that preserve historic, cultural, archeological, paleontological, and education resources.

Consistency Determination

Consistent. This policy directs the City how to designate open spaces, including specific direction to preserve historic, cultural, archeological, paleontological, and educational resources. The policy is not directed towards private development projects. Given the proposed project is a development project proposed by a private entity, this policy does not directly apply to the project. However, the analyses of these particular environmental issue areas contained within this EIR will also further ensure that these important resources would be protected from significant environmental impact.

Policy 4-P.52: Participate in the implementation of transportation demand management programs on a regional basis.

Consistent. The proposed project would implement its own transportation demand management program, pay Transportation Impact Fees for transit improvements, maintain existing sidewalks and bikeways, and develop a new sidewalk. As discussed under Policy 2-P.45 criterion e), Goal 2-G.18, and Policy 3-P.32, the proposed project would include numerous transportation and connectivity improvements such as landscaping improvements, pedestrian paths and sidewalks, bicycle lanes, and benches/trash cans at nearby bus stops.

Policy 4-P.55: Cooperate with the ongoing efforts of the U.S. Environmental Protection Agency, the San Diego Air Pollution Control District, and the State of California Air Resources Board in improving air quality in the regional air basin.

Consistent. As discussed in Section 4.2, *Air Quality*, the proposed project is located within the San Diego Air Basin and is consistent with the SDAPCD RAQS. The RAQS uses projected growth and emission source information from the California Air Resources Board (CARB) and SANDAG to forecast emissions in the County. Based on these emissions, reduction strategies are determined to reduce emissions in order to maintain or achieve attainment with state or federal air quality standards. The proposed project would meet the RAQS requirements for control measures intended to reduce emissions from construction activities and be consistent with the RAQS and State Implementation Plan.

Policy 4-P.56: Ensure that construction and grading projects minimize short-term impacts to air quality.

Consistent. As discussed in Section 4.2, *Air Quality*, the proposed project would not exceed the SDAPCD significance thresholds for PM10, PM2.5, VOC, or NOx during construction. The proposed project would comply with CARB regulatory requirements to minimize short-term emissions from on-road and off-road diesel construction equipment (i.e., 13 CCR, Section 2485 – anti-idling regulation; 13 CCR, Section 2025 – Truck and Bus regulation to reduce NOx, PM10, and PM2.5 emissions; and 13 CCR, Section 2449 – In-Use Off-Road Diesel Fueled Fleets regulation to reduce NOx, PM10, and PM2.5 emissions). The proposed project would also comply with SDAPCD regulations for controlling fugitive dust pursuant to SDAPCD Rule 55 Fugitive Dust.

- a) Require grading projects to provide a storm water pollution prevention plan (SWPPP) in compliance with city requirements, which include standards for best management practices that control pollutants from dust generated by construction activities and those related to vehicle and equipment cleaning, fueling, and maintenance;
- b) Require grading projects to undertake measures to minimize mono-nitrogen oxides (NOx) emissions from vehicle and equipment operations; and
- c) Monitor all construction to ensure that proper steps are implemented.

As discussed in Section 4.9, *Hydrology and Water Quality*, because the project site is greater than 1 acre, the proposed project would be required to comply with the NPDES general construction permit, thus requiring preparation and implementation of a SWPPP, and the city's Grading and Drainage Ordinance.

General Plan Goal/Policy

Consistency Determination

Noise Element

Goal 5-G-1: Protect public health and welfare by eliminating existing noise problems where feasible, maintaining and acceptable indoor and outdoor acoustic environment, and preventing significant degradation of the acoustic environment.

Consistent. Based on Exhibit III-1 of the ALUCP, this project site is located fully within the 60 to 65 dBA CNEL contour. The City of Carlsbad's Noise Element of the General Plan specifies exterior and interior noise standards for multi-family residential projects. Both standards are based upon the CNEL index. The City of Carlsbad has adopted an exterior noise standard of 60 decibels (dB) CNEL for required recreation areas of multi-family residential condominium projects and an interior noise standard of 45 dB CNEL. As reported in the General Plan Noise Element Table 5-1 (and summarized in Table 4.11-4 of Section 4.11, *Noise and Vibration*), multi-family projects in an area with 60 to 70 dB CNEL are considered "Conditionally Acceptable", meaning that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. According to the City of Carlsbad, patios and balconies of the multi-family residential units associated with the proposed project are not required spaces (since the proposed project is providing apartment units and not condominium units), and therefore, are exempt from the 60 dB CNEL exterior noise standard. As stated in the ALUCP for the 60 to 65 dBA CNEL contour, this CNEL is acceptable for outdoor activities, though some noise interference may occur. As discussed in Section 4.11, *Noise and Vibration*, indoor noise levels would be acceptable for future residents through the integration of standard noise insulation features (including heating, ventilation, and air conditioning (HVAC) which would allow closed window conditions) during final building design to reduce noise interior exposure from transportation sources and achieve the 45 dBA noise standard for residential uses contained in the General Plan. In addition, off-site noise-sensitive land uses would not be exposed to excessive noise generated by the proposed project due to building shielding wherein proposed structures would intercept potential noise from resident common areas proposed on-site. The proposed project would be consistent with this Noise Element goal.

Goal 5-G-2: Ensure that new development is compatible with the noise environment, by continuing to use potential noise exposure as a criterion in land use planning.

Consistent. See response to Goal 5-G. 1 above.

Goal 5-G-3: Guide the location and design of transportation facilities, industrial use and other potential noise generators to minimize the effects of noise on adjacent land uses.

Consistent. See response to Goal 5-G. 1 above.

Goal 5-G-4: Ensure long-term compatibility between the airport and surrounding land use.

Consistent. See discussion of Goal 5.G-1 above. See Section 4.11, *Noise and Vibration*, of this EIR for further discussion.

Policy 5-P.1: Acceptability of Use Location. Use the noise and land use compatibility matrix (Table 5-1 in the Noise section of the General Plan) and Future Noise Contours map (Figure 5-3 in the Noise section of the General Plan) as criteria to determine acceptability of a land use, including the improvement/construction of streets, railroads, freeways and highways. Do not permit new noise-sensitive uses—including schools, hospitals, places of worship, and homes—where noise levels are "normally unacceptable" or higher, if alternative locations are available for the uses in the city.

Consistent. See response to Goal 5-G. 1 above. See Section 4.11, *Noise and Vibration*, of this EIR for further discussion of construction and operational noise that would result from the proposed project.

General Plan Goal/Policy

Policy 5-P.2: Required Noise Analysis. Require a noise analysis be conducted for all discretionary development proposals (except for developments of single family homes with four units or fewer) located where projected noise exposure would be other than “normally acceptable”. A required noise analysis should:

- Be prepared by a certified noise consultant or acoustical engineer;
- Be funded by the applicant;
- Include a representative, on-site day and night sound level measurement;
- Include a delineation of current (measured) and projected (General Plan or 10 years in future, whichever horizon extends further out) noise contours;
- Identify noise levels with and without the proposed project, ranging from 55 to 75 dBA (Ldn) within the proposed development site; and
- If noise levels exceed the standards in Table 5-1, include a description of adequate and appropriate noise abatement measures to mitigate the noise to allowable levels for the proposed use.

Consistency Determination

Consistent. An Environmental Noise Study was prepared for the proposed project by Charles M. Salter Associates (included as Appendix I of this EIR). Information from this Environmental Noise Study has been incorporated into Section 4.11, *Noise and Vibration*, of this EIR. See Section 4.11, *Noise and Vibration*, of this EIR for further discussion.

Policy 5-P.5: Noise Generation. As part of development project approval, require that noise generated by a project does not exceed standards established in Table 5-3 (of the Noise section of the General Plan).

Consistent. See response to Goal 5-G.1 above. See Section 4.11, *Noise and Vibration*, of this EIR for further discussion of construction and operational noise that would result from the proposed project.

Public Safety Element

Goal 6-G.1: Minimize injury, loss of life, and damage to property resulting from fire, flood, hazardous material release, or seismic disasters.

Consistent. As discussed in Section 4.18, *Wildfire*, the Fire Hazard Severity Zone (FHSZ) mapping completed by the City of Carlsbad and reflected by the San Diego Geographic Information Source (SanGIS), the northern portion of the project site (both the West Parcel and the East Parcel) is partially within a Moderate FHSZ (SanGIS, 2019) (CAL FIRE, 2009). The remainder of the project site is LRA Urban Unzoned (SanGIS, 2019). Thus, no portion of the project site is within a Very High FHSZ. In compliance with the requirements of the Landscape Manual, the project applicant has prepared a Fire Master Plan. The Carlsbad Fire Department has determined, through their review and approval of the Fire Master Plan, that the project as designed would adequately provide life safety and property protection in lieu of code compliant fire department access throughout the entire property (Firesafe, 2018). As provided in the approved Fire Master Plan, the proposed structures would include a variety of fire protection features (e.g., fire alarms, automatic sprinklers, emergency responder accessibility, fire extinguishers) to minimize the likelihood of exposing residents, visitors, staff, and structures to a significant risk involving the spread of wildland fires. Additionally, the proposed project would provide increased fire and emergency response access throughout the project site.

As discussed in Section 4.9, *Hydrology and Water Quality*, the project site resides in Zone X and is outside of the 100- and 500-year flood zone (REC, 2019a; REC, 2019b). The proposed project would comply with the requirements of the Municipal Separate Storm Water (MS4) Permit and the city’s Storm Water Ordinance.

General Plan Goal/Policy

Consistency Determination

Additionally, the project would include bioretention basins and underground detention basins that would reduce the post-development peak storm flows. Impacts related to flooding would be less than significant. As discussed in Section 4.8, *Hazards and Hazardous Materials*, the proposed project would not be expected to create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

As discussed in Section 4.6, *Geology and Soils*, no Holocene-active faults have been recognized as crossing or being immediately adjacent to the project site (GeoSoils, Inc., 2019). The California Geological Survey does not delineate any part of the project site as being within an Alquist-Priolo Earthquake Fault Zone (California Geological Survey, 2018). The closest active fault to the project site is the Rose Canyon Fault, located approximately 5.3 miles to the west. The structural elements of the proposed project would be required to undergo appropriate design-level geotechnical evaluations prior to final design and construction in accordance with the version of Chapter 18 of the California Building Code (CBC) in effect at the time building permits are requested. Implementing the regulatory requirements of the applicable CBC, city ordinances (Titles 15 and 18 of the CMC), the California Geological Survey (CGS) Guidelines for Evaluating and Mitigating Seismic Hazards in California, and ensuring all buildings and structures are constructed in compliance with the law is the responsibility of state licensed project engineers and the city's building officials as detailed in Chapter 18 of the CBC.

Policy 6-P.9: Allow for consideration of seismic and geologic hazards at the earliest possible point in the development process, preferably before comprehensive engineering work has commenced.

Consistent. As mentioned in Section 4.6, *Geology and Soils*, a preliminary geotechnical report was prepared for the project site and is found in Appendix E.1 of this EIR. Information from the preliminary geotechnical report was included in the Section 4.6, *Geology and Soils*, and throughout other sections of this EIR as appropriate. A final design level geotechnical report would be prepared by a California registered Geotechnical Engineer or Engineering Geologist and recommendations would include final design parameters for the walls, foundations, foundation slabs, and surrounding related improvements (utilities, roadways, parking lots and sidewalks) for all proposed improvements, prior to issuance of a building permit.

Policy 6-P.10: Maintain geotechnical report guidelines identifying specific requirements for various levels of geotechnical evaluation, including reconnaissance studies, preliminary geotechnical investigation reports, and as-graded geotechnical reports

Consistent. This policy directs the City to maintain geotechnical report guidelines. The policy is not directed towards private development projects. Given the proposed project is a development project proposed by a private entity, this policy does not directly apply to the project. However, see response to Goal 6-G.1 and Policy 6-P.9 above.

Policy 6-P.11: Use information in Figure 6-4 as a generalized guideline for planning purposes and in determining the type and extent of geotechnical report to be required for a proposed development project. When a geotechnical report is required, require submission of the report and demonstration that a project conforms to all mitigation measures recommended in the report prior to city approval of the proposed development.

Consistent. See response to Goal 6-G.1 and Policy 6-P.9 above. The proposed project would adhere to all recommendations of the final design level geotechnical report, including all regulatory requirements of the applicable CBC, city ordinances, and the CGS.

Policy 6-P.12: Require a geotechnical investigation and report of all sites proposed for development in areas where geologic conditions or soil types are susceptible to liquefaction. Also require demonstration that a project conforms to all mitigation measures recommended in the geotechnical report prior to city approval of the proposed development (as required by state law).

Consistent. See response to Goal 6-G.1 and Policy 6-P.9 above. The proposed project would adhere to all recommendations of the final design level geotechnical report, including all regulatory requirements of the applicable CBC, city ordinances, and the CGS.

General Plan Goal/Policy	Consistency Determination
<p>Policy 6-P.13: Prohibit location of critical structures directly across known earthquake faults unless a geotechnical and/or seismic investigation is performed to show that the earthquake fault is neither active nor potentially active.</p>	<p>Consistent. As discussed above under Goal 6-G.1, no Holocene-active faults have been recognized as crossing or being immediately adjacent to the project site (GeoSoils, Inc., 2019). The California Geological Survey does not delineate any part of the project site as being within an Alquist-Priolo Earthquake Fault Zone (California Geological Survey, 2018). The closest active fault to the project site is the Rose Canyon Fault, located approximately 5.3 miles to the west. See response to Policy 6-G.1 above.</p>
<p>Policy 6-P.14: Require applicants to conduct detailed geologic and seismic investigations at sites where the construction of critical structures (high-occupancy structures and those that must remain in operation during emergencies) and structures over four stories are under consideration.</p>	<p>Consistent. See response to Policy 6-G.1.</p>
<p>Policy 6-P.17: Continue to regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards on sites having a history or threat of seismic dangers, erosion, subsidence, or flooding.</p>	<p>Consistent. See response to Policy 6-G.1.</p>
<p>Policy 6-P.21: Coordinate with the County of San Diego and use the San Diego County Multi-Jurisdictional Hazard Mitigation Plan as a guide for implementing actions to reduce hazardous waste impacts.</p>	<p>Consistent. As discussed in Section 4.8, <i>Hazards and Hazardous Materials</i>, the city is a participant in San Diego County's Multi-Jurisdictional Hazard Mitigation (HAZMIT) Plan. The city has implemented many of the recommended action items in the plan through existing programs and procedures and enforcement of policies and ordinances. Development of the proposed project would be required to comply with all city building code requirements and ordinances and thus would not conflict with implementation of this plan.</p>
<p>Policy 6-P.23: Regulate development on sites with known contamination of soil and groundwater to ensure that construction workers, future occupants, and the environment as a whole, are adequately protected from hazards associated with contamination, and encourage cleanup of such sites.</p>	<p>Consistent. As discussed in Section 4.8, <i>Hazards and Hazardous Materials</i>, a Phase I Environmental Site Assessment (ESA) was prepared for the project site to determine if there were any recognized environmental concerns (RECs) at the project site. The Phase I ESA concluded the possible presence of contaminated soil based on prior land uses and a subsequent Phase II ESA was conducted (Arcadis, 2016a). Low-level detections of total petroleum hydrocarbons in the heavy oil range were detected at multiple boring locations (Arcadis, 2016b). No other analytes were identified in the soil at the project site that would affect redevelopment (Arcadis, 2016b). Mitigation Measure HAZ-1 would require the preparation of a Soil Management Plan and approval by the San Diego County Department of Environmental Health Hazardous Materials Division prior to initiating any earthwork activities on the project site. In accordance with Mitigation Measure HAZ-1, if contamination is found to be present on-site, any further proposed groundbreaking activities within areas of identified or suspected contamination shall be conducted according to a site specific health and safety plan, prepared by a California state licensed professional consistent with Cal OSHA and Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) requirements.</p>
Arts, History, Culture, and Education Element	
<p>Policy 7-P.7: Implement the City of Carlsbad Cultural Resources Guidelines to avoid or substantially reduce impacts to archaeological and paleontological resources.</p>	<p>Consistent. As discussed in Section 4.4, <i>Cultural Resources</i>, the impact analysis and mitigation measures identified in the cultural resources analysis are consistent with the City of Carlsbad Cultural Resource Guidelines and monitoring would be required during construction consistent with the policies of the General Plan. The Cultural Resources Guidelines (Guidelines) provide a framework for the roles and responsibilities of those responsible for compliance with the Guidelines and provide the processes by which cultural resources are assessed under the Guidelines.</p>

General Plan Goal/Policy

Policy 7-P.8: During construction of specific development projects, require monitoring of grading, ground disturbing, and other major earthmoving activities in previously undisturbed areas or in areas with known archaeological or paleontological resources by a qualified professional, as well as a tribal monitor during activities in areas with cultural resources of interest to local Native American tribes. Both the qualified professional and tribal monitor shall observe grading, ground-disturbing, and other earth-moving activities.

Consistency Determination

Consistent. The proposed project would implement Mitigation Measure CUL-1 and Mitigation Measure GEO-1. Mitigation Measure CUL-1 would require the implementation of a cultural resources monitoring program, including tribal consultation and monitoring, during initial grading and other ground-disturbing activities. Mitigation Measure GEO-1 would require the implementation of a monitoring, recovery, and treatment program for paleontological resources prior to the commencement of construction.

Sustainability Element

Goal 9-G.3: Promote energy efficiency and conservation in the community.

Consistent: The proposed project would implement CALGreen Building Code sustainability and efficiency features.

Goal 9-G.4: Reduce the City's reliance on imported water.

Consistent: The project will implement water conservation strategies to reduce water usage consistent with CALGreen requirements.

Policy 9-P.2: Continue efforts to decrease use of energy and fossil fuel consumption in municipal operations, including transportation, waste reduction and recycling, and efficient building design and use.

Consistent. As discussed in Section 4.15, *Utilities and Service Systems*, the project applicant would contract with a licensed waste hauler that would deposit all solid waste at a permitted solid waste facility and therefore, would comply with federal, state, and local statutes and regulations related to solid waste such as, AB 939, AB 1327, SB 1374, AB 341, and AB 1826. Additionally, the project would be conditioned to comply with CALGreen's Construction Waste Management Plan requirement to demonstrate that at least 65% of non-hazardous construction debris generated from the proposed project would be recycled and/or salvaged for reuse. Energy consumption, efficiency, and building design are discussed in Section 4.5, *Energy*. The proposed project would comply with CALGreen and Title 24 requirements to reduce energy consumption by implementing energy efficient building designs, improving energy and water efficiency in buildings, decreasing water use (20% reduction per CALGreen), and installing energy-efficient appliances and equipment. The proposed project would include a 386 kilowatt (kW) PV solar system on the top of the proposed residential buildings and would also include an efficient central solar water heating system per Carlsbad Ordinance CS-347

Policy 9-P.12: Continue pursuit of sustainable energy sources.

Consistent: The project will install a 386 kWdc PV system to supply residential electricity through solar panels.

2013-2021 Housing Element

Goal 10-G.2: New housing developed with diversity of types, prices, tenures, densities, and locations, and in sufficient quantity to meet the demand of anticipated city and regional growth.

Consistent. The proposed project would include 329 multi-family apartment dwelling units, including 247 market rate units and 82 affordable units (e.g., 25% of the total). Units would include studios and one-, two-, and three-bedroom units, with the affordable units for residents with incomes from 90% AMI to 30% AMI. Therefore, the proposed project would develop new housing with a diversity of types and prices, and would help the city meet its SANDAG-specified share of regional housing demand.

General Plan Goal/Policy

Consistency Determination

Policy 10-P.15: Pursuant to the Inclusionary Housing Ordinance, require affordability for lower income households of a minimum of 15 percent of all residential ownership and qualifying rental projects. For projects that are required to include 10 or more units affordable to lower income households, at least 10 percent of the lower income units should have three or more bedrooms (lower income senior housing projects exempt).

Consistent. The proposed project would include 329 multi-family apartment dwelling units, including 247 market rate units and 82 affordable units (e.g., 25% of the total). The affordable units would include units for residents with incomes of from 90% down to 30% of AMI, with seven of the affordable units to be three-bedroom units.

Policy 10-P.18: Adhere to City Council Policy Statement 43 when considering allocation of "excess dwelling units" for the purpose of allowing development to exceed the Growth Management Control Point (GMCP) density, as discussed in Section 10.3 (Resources Available). With limited exceptions, the allocation of excess dwelling units will require provision of housing affordable to lower income households.

Consistent. See response to Policy 2-P.8 above.

SOURCE: ESA, May 2020.

With regard to building heights, the 50-foot maximum proposed under the proposed project (up to 60 feet with architectural features) would exceed the 35-foot maximum permitted in the RD-M zone. However, the proposed project is requesting the city modify this requirement in accordance with CMC Section 21.53.120 (i.e., less restrictive development standards for affordable housing projects). With city approval of the modified SDP, the proposed project would be consistent with city building height requirements.

With regards to building setbacks, CMC Section 21.24.080 requires an increase in applicable setbacks (in this case, the setbacks required in the RD-M zone) for buildings over 35 feet in height. The proposed project is requesting a standards modification of this requirement as part of its modified SDP in accordance with CMC Section 21.53.120. The proposed project is also requesting a 3-foot reduction in the requisite parkway width on the north side of Laurel Tree Lane (other project street and driveway widths would be consistent with city requirements). With city approval of the modified SDP, the proposed project would be consistent with city setback and parkway requirements.

As mentioned in Section 4.1, *Aesthetics*, all proposed modifications in the SDP to the RD-M zoning regulations, including the aforementioned increase in allowable building height and modified setbacks, are illustrated in the visual simulations (Figures 4.1-2 through 4.1-5). The analysis in Section 4.1, *Aesthetics*, determined that all aesthetics impacts would be less than significant. With regard to parking, the project is proposing a total of 533 parking spaces, versus the 630 spaces required by CMC Section 21.44.020. However, the proposed project is requesting a modification of the development standards from the city as part of its modified SDP, in accordance with CMC Section 21.53.120. If approved by the city, the proposed project would instead provide 533 parking spaces and the proposed project would be consistent with city parking requirements.

Local Facilities Management Plan

As demonstrated in Section 4.13, *Public Services*, and Section 4.16, *Utilities and Service Systems*, of this EIR, implementation of the proposed project would not adversely impact planned or current levels of service for public facilities such as sewer, water, open spaces, parks, libraries, fire, and police because existing infrastructure is available to serve the proposed project. The city's GMP policies, which are enforced in the LFMPs, would continue to monitor growth in the area to maintain adequate levels of service for the people living in Carlsbad. With the incorporation of the LFMP process and the city's GMP policies, development cannot proceed until adequate infrastructure is financially guaranteed to meet demand. The proposed project would be consistent with the LFMP and not conflict with the GMP.

Inclusionary Housing Ordinance

Per CMC Section 21.85.030, a project is required to provide 15% of the total units as affordable units. Based on the above requirements, the proposed project would be required to provide 49 affordable housing units (e.g., .15 x 329 units). However, per Planning Commission Resolution No. 7114, this site requires a minimum of 20% of the total units as affordable units. Based on the requirements of Planning Commission Resolution No. 7114, the proposed project would be required to provide 66 affordable housing units (e.g., .20 x 329 units). The proposed project

would exceed this requirement by providing approximately 25% (or 82 units) of the proposed 329 housing units as affordable units. See Section 4.12, *Population and Housing*, of this EIR, for further discussion. Therefore, the proposed project would be consistent with the city's Inclusionary Housing Ordinance.

Landscape Manual

The policies, programs and requirements of the Landscape Manual apply to all public and private development requiring discretionary permits or submittal of landscape plans for development permits. The proposed project is required to comply with the provisions of the Landscape Manual with respect to planting, irrigation, water conservation, streetscape, slope revegetation/erosion control, and fire protection.

The proposed project would install landscaping in compliance with the city's Landscape Manual. The project site would be landscaped with native plants, including the 50-foot buffer established along the project site's northern border with Encinas Creek where native habitat does not currently exist. Furthermore, the city would review the detailed landscape construction plans of the proposed project at the time permits are applied for to ensure compliance with city landscape requirements.

According to the FHSZ mapping completed by the City of Carlsbad and reflected by the San Diego Geographic Information Source (SanGIS), the northern portion of the project site (both the West Parcel and the East Parcel) is partially within a Moderate FHSZ (SanGIS, 2019) (CAL FIRE, 2009). The remainder of the project site is LRA Urban Unzoned (SanGIS, 2019). The Landscape Manual, Policy 6-P.35 of the Safety Element, and the City of Carlsbad Fire Department require the preparation of a Fire Protection Plan (FPP) when future development contains or is bounded by hazardous vegetation or is within an area bounded by a Very High Hazard FHSZ. Neither the West nor the East parcels are located within or bounded by a Very High Hazard FHSZ, and any hazardous vegetation within the areas of the parcels to be developed with urban uses would be removed. There is the potential that the Fire Department may conclude that some hazardous vegetation exists in the northern portions of the parcels where development is not proposed: if this occurs, the Applicant would prepare and implement the required Fire Protection Plan. This would include the implementation of Fuel Modification Zones (e.g., planting of fire resistant landscaping within fire suppression zones, etc.) as specified in the Landscape Manual, if required. A Fire Master Plan (provided as Appendix L.2 of this EIR) has been prepared for the proposed project and addresses project site access routes, firefighter tunnel designs, landscape and hardscape design, access gate details, and fire safety signage. The project applicant has also submitted a Fuel Modification Plan (provided as Appendix L.1 of this EIR) to the City of Carlsbad Fire Department in accordance with California Fire Code Section 104.9 Alternate Materials and Methods; the City of Carlsbad Fire Department approved that plan on March 29, 2018. The proposed project's required Fuel Modification Zones have been restricted to development boundaries to afford fire protection while avoiding impacts to sensitive biological resources protected by the city's HMP (see Section 4.3, *Biological Resources*, of this EIR for further discussion). See the fire protection portion of Section 4.13, *Public Services*, of this EIR for further discussion. Lastly, see Section 4.16, *Wildfire*, for further discussion.

Based on the above, the proposed project would be consistent with the city's Landscape Manual.

Livable Neighborhoods Design Guidelines

The city developed principles for the development of livable neighborhoods. Livable neighborhoods have a sense of identity and community where: residents are encouraged to walk instead of using cars; where homes are in scale with their lots; where streets are pedestrian-friendly with walkways to common destinations such as schools, parks, stores, and transit; where houses are interesting to look at with strong architectural elements; and where open spaces form focal points, gathering places, and recreational spaces for a variety of age groups. The proposed project would comply with the city's Livable Neighborhoods Design Guidelines by providing the following:

- 37,570 square feet of amenities, including a multipurpose/club room, fitness facility, Wi-Fi café, outdoor recreation area and pool courtyard, outdoor lounge area, two passive courtyards, arrival yard and entry plaza, and the west yard on the West Parcel, and outdoor recreation area, courtyard, and arrival yard and entry plaza on the East Parcel.
- A 50-foot-wide open space buffer planted with native vegetation in the northern portion of the West Parcel.
- Extensive landscaping, including street trees along the project site's Aviara Parkway and Laurel Tree Lane frontages, and landscaping of on-site open space areas, consistent with and/or exceeding the city Landscape Manual requirements.
- On-site pedestrian paths and a new sidewalk along the East Parcel's Laurel Tree Lane frontage, to provide pedestrian connectivity via the existing sidewalks along Aviara Parkway to adjacent parcels, schools and parks in the area;
- Preservation of the existing Class II bike lane along both sides of Aviara Parkway.
- High-quality architecture, building articulation, varied setbacks, and other design features, all of which would undergo city design review.

Carlsbad Habitat Management Plan

The proposed project would provide the required 50-foot buffer planted with native vegetation between the proposed development and the Hardline-designated Encinas Creek riparian corridor. The proposed project would also establish an approximately 1.6-acre biological open space preserve to serve as new HMP Hardline to be added to the Carlsbad HMP preserve configuration and managed in perpetuity. The proposed project would also create and restore approximately 1.1 acres of Diegan coastal sage scrub in areas that are currently disturbed and characterized by non-native habitat types. As shown in Table 4.3-6, *Project Consistency with the HMP and LCP*, in Section 4.3, *Biological Resources*, the proposed project would be consistent with the HMP/LCP standards and HMP adjacency standards with biological resources mitigation incorporated. Therefore, the proposed project would be consistent with the city's HMP.

City of Carlsbad LCP

The project site is located with the Mello II Segment of the city's LCP. The existing LCP land use designation is R-30 (consistent with the General Plan land use designation). The existing zoning designation on the LCP Zoning Map is RD-M (consistent with the city's Zoning Map). The proposed project would be consistent with the existing General Plan land use designation and

zoning of the project site, is not proposing General Plan Amendment, Rezone, or LCP Amendment, and per the analysis below would be consistent with applicable LCP policies. Therefore, the proposed project would be consistent with the LCP.

Policy 1-1: Allowable Land Uses

Allowable uses are those that are consistent with both the General Plan and the Local Coastal Program.

Consistency Analysis: As indicated previously, the project site is designated R-30 (Residential, 23-30 du/ac). This designation permits residential development at a density of 23–30 du/ac, with permitted housing types including two-family dwellings (two attached dwellings) and multi-family dwellings (three or more attached dwellings) (City of Carlsbad, 2015).

The proposed project would develop 329 residential units and associated parking, amenities and open space, with a residential density of 40 du/ac. This would be consistent with the type of uses permitted by the R-30 designation, but would exceed the permitted maximum density of 30 du/ac permit. However, CMC Section 21.53.120 allows for standards modifications, including density increases, for affordable housing projects that provide affordable housing in excess of the requirements of CMC Chapter 21.85. In addition, Planning Commission Resolution No. 7114, allocated 224 units from the city’s Excess Dwelling Unit Bank to the project site and a minimum of 20% of all units would be required to be affordable units, which would exceed the requirements of CMC Chapter 21.85. The proposed project would provide 25% of the proposed 329 housing units as affordable units, thereby qualifying for the standards modifications, which would include the density increase. With submittal of the modified SDP and Affordable Housing Agreement to the city for review and approval, and with the approval by the city for the requested density increase, the proposed project would be consistent with the city’s R-30 General Plan land use designation of the project site. Hence, the proposed project would be consistent with LCP Policy 1-1.

Policy 7-10: Parking

Parking standards set forth within the City of Carlsbad Zoning Ordinance are appropriate for the future development of various land uses.

Consistency Analysis: The proposed project is proposing a total of 533 parking spaces, versus the 630 spaces required by CMC Section 21.44.020. The proposed project would not meet this requirement. However, the proposed project is requesting a standards modification from the city in accordance with CMC Section 21.53.120. If approved by the city, the proposed project would instead provide 533 parking spaces. With city approval of standards modifications, the proposed project would be consistent with city parking requirements. Therefore, the proposed project would be consistent with LCP Policy 7-10.

McClellan-Palomar Airport ALUCP

The project site is located approximately 1-mile northeast of the McClellan-Palomar Airport, and according to the ALUCP, is located within the AIA Review Area 1, Safety Zone 6 (Traffic Pattern Zones), Airport Overflight Notification Area, and the 60–65 CNEL noise contour of the airport (SDCRAA, 2010). The project site is also located within the FAA Height Notification Boundary and Part 77 Airspace Surfaces zone of the airport (SDCRAA, 2010).

Development that is not compatible with aviation activity (e.g., tall structures, land uses that produce glint/glare, land uses that attract wildlife that can be hazardous to aircraft, noise-sensitive land uses) may lead to conflict between an airport operator and surrounding communities as well as create long-term operational problems for the airport. The proposed project must submit its development project plans for review to the ALUC for an ALUCP consistency review. The Southwest Regional Office of the Federal Aviation Administration (FAA) reviewed the project plans and determined the proposed project would not cause a hazard to air navigation in accordance with Title 14 CFR Part 77 (FAA, 2017). As noted above, an overflight notification would be recorded in the property's chain of title that indicates that the property may be subject to some of the annoyances or inconveniences associated with proximity to an airport and aircraft operations (such as noise, vibration, overflights, or odors). Therefore, considering the existing regulatory requirements of 14 CFR Part 77, and the fact that the proposed project would be reviewed for consistency with the ALUCP by the ALUC, there is no potential for a conflict with the McClellan-Palomar Airport operations.

4.10.5 Level of Significance before Mitigation

Implementation of the proposed project would not result in a significant land use and planning impact; therefore, no mitigation measures are proposed.

4.10.6 Environmental Mitigation Measures

No mitigation measures are proposed, as no significant impacts have been identified.

4.10.7 Level of Significance after Mitigation

No significant impact to land use and planning has been identified.

4.11 Noise and Vibration

This section includes a description of noise fundamentals and the existing noise setting, a summary of the regulations related to noise, and an evaluation of the proposed project's potential noise effects. Information contained in this section is derived from the Aviara Apartments Environmental Noise Study by Charles M. Salter Associates, Inc., 2019 (see Appendix I.1) and from traffic noise modeling conducted by ESA (see Appendix I.2). Where appropriate under the guidance of CEQA, noise mitigation measures have been incorporated as recommendations within this analysis. Project-specific traffic volume data is provided in the Transportation Impact Analysis (TIA) prepared for the project (MBI, 2019) and included in Appendix J of this EIR.

4.11.1 Existing Conditions

Noise Fundamentals

Noise Principals and Descriptors

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is generally defined as unwanted (i.e., loud, unexpected, or annoying) sound. Acoustics is defined as the physics of sound, and addresses its propagation and control (Caltrans, 2013a). In acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver.

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound (Caltrans, 2013a).

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum (Caltrans, 2013a).

The typical human ear is not equally sensitive to the frequency range from 20 to 20,000 Hz. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to these extremely low and extremely high frequencies. This method of frequency filtering or weighting is referred to as A-weighting,

expressed in units of A-weighted decibels (dBA), which is typically applied to community noise measurements (Caltrans, 2013a). Some representative common outdoor and indoor noise sources and their corresponding A-weighted noise levels are shown in **Table 4.11-1, Decibel Scale and Common Noise Sources**.

**TABLE 4.11-1
 DECIBEL SCALE AND COMMON NOISE SOURCES**

Common Noise Sources	Noise Level (dBA)	Common Noise Sources
	— 140 —	Threshold of Pain
	— 130 —	
Civil Defense Siren (100 feet)		
Jet Takeoff (200 feet)	— 120 —	
	— 110 —	
Riveting Machine		Rock Music Band
	— 100 —	Pile Driver (50 feet)
Diesel Bus (15 feet)		Ambulance Siren (100 feet)
	— 90 —	Boiler Room
Bay Area Rapid Transit Train Passby (10 feet)		Printing Press Plant
Off Highway Vehicle (50 feet)		Garbage Disposal in the Home
Pneumatic Drill (50 feet)	— 80 —	Inside Sports Car, 50 mph
SF Muni Light-Rail Vehicle (35 feet)		
Freight Cars (100 feet)	— 70 —	
	— 60 —	Data Processing Center
Vacuum Cleaner (10 feet)		Department Store
Speech (1 foot)	— 50 —	Private Business Office
		Light Traffic (100 feet)
Large Transformer (200 feet)		
Average Residence	— 40 —	
		Typical Minimum Nighttime Levels – Residential Areas
	— 30 —	
Soft Whisper (5 feet)		
	— 20 —	
Rustling Leaves		Recording Studio
	— 10 —	
Threshold of Hearing		Mosquito (3 feet)
	— 0 —	

SOURCE: Charles M. Salter Associates, Inc. Aviara Apartments Environmental Noise Study. May 2019.

Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time; a noise level is a measure of noise at a given instant in time, as presented in Table 4.11-1, *Decibel Scale and Common Noise Sources*. However, noise levels rarely persist at that level over a long period of time. Rather, community noise varies continuously over a period of time with respect to the sound sources contributing to the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with many unidentifiable individual contributors. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources, such as changes in traffic volume. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual (Caltrans, 2013a).

These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the noise exposure to be measured over periods of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. The following noise descriptors, which are used to characterize environmental noise levels over time, are applicable to the proposed project (Caltrans, 2013a).

- L_{eq} : The equivalent sound level over a specified period of time, typically, 1 hour (L_{eq}). The L_{eq} may also be referred to as the average sound level.
- L_{max} : The maximum, instantaneous noise level experienced during a given period of time.
- L_{min} : The minimum, instantaneous noise level experienced during a given period of time.
- L_x : The noise level exceeded a percentage of a specified time period. For instance, L_{50} and L_{90} represent the noise levels that are exceeded 50% and 90% of the time, respectively.
- L_{dn} : The average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dB to measured noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account nighttime noise sensitivity. The L_{dn} is also termed the day-night average noise level (DNL).
- CNEL: The Community Noise Equivalent Level (CNEL) is the average A-weighted noise level during a 24-hour day that includes an addition of 5 dB to measured noise levels between the hours of 7:00 p.m. to 10:00 p.m. and an addition of 10 dB to noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime.

Effects of Noise on People

Noise is generally loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that is a nuisance or disruptive. The effects of noise on people can be placed into four general categories:

- Subjective effects (e.g., dissatisfaction, annoyance)
- Interference effects (e.g., communication, sleep, and learning interference)
- Physiological effects (e.g., startle response)
- Physical effects (e.g., hearing loss)

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. Interference effects interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, telephone conversations, and interference with sleep. Sleep interference effects can include both awakening and arousal to a lesser state of sleep (Caltrans, 2013a).

With regard to the subjective effects, the responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity. Overall, there is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction on people. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships generally occur (Caltrans, 2013a):

- Except in carefully controlled laboratory experiments, a change of 1 dBA in ambient noise levels cannot be perceived.
- Outside of the laboratory, a 3 dBA change in ambient noise levels is considered to be a barely perceivable difference.
- A change in ambient noise levels of 5 dBA is considered to be a readily perceivable difference.
- A change in ambient noise levels of 10 dBA is subjectively heard as doubling of the perceived loudness.

These relationships occur in part because of the logarithmic nature of sound and the decibel scale. The human ear perceives sound in a non-linear fashion; therefore, the dBA scale was developed. Because the dBA scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. Under the dBA scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two sources are each producing sound of the same loudness, the resulting sound level at a given distance would be approximately 3 dBA higher than one of the sources under the same conditions. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. Under the dB scale, three sources of equal loudness together produce a sound level of approximately 5 dBA louder than one source, and ten sources of equal loudness together produce a sound level of approximately 10 dBA louder than the single source (Caltrans, 2013a).

Noise Attenuation

When noise propagates over a distance, the noise level reduces with distance depending on the type of noise source and the propagation path. Noise from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern, referred to as “spherical spreading.”

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (i.e., reduce) at a rate between 6 dBA for acoustically “hard” sites and 7.5 dBA for “soft” sites for each doubling of distance from the reference measurement, as their energy is continuously spread out over a spherical surface (e.g., for hard surfaces, 80 dBA at 50 feet attenuates to 74 dBA at 100 feet, 68 dBA at 200 feet¹). Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the reduction in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees, which in addition to geometric spreading, provides an excess ground attenuation value of 1.5 dBA (per doubling distance) (Caltrans, 2013a).

Roadways and highways consist of several localized noise sources on a defined path, and hence are treated as “line” sources, which approximate the effect of several point sources. Noise from a line source propagates over a cylindrical surface, often referred to as “cylindrical spreading.” Line sources (e.g., traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans, 2013a). Therefore, noise due to a line source attenuates less with distance than that of a point source with increased distance.

Additionally, receptors located downwind from a noise source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Atmospheric temperature inversion (i.e., increasing temperature with elevation) can increase sound levels at long distances (e.g., more than 500 feet). Other factors such as air temperature, humidity, and turbulence can also have significant effects on noise levels (Caltrans, 2013a).

Fundamentals of Vibration

Vibration can be interpreted as energy transmitted in waves through the ground or man-made structures, which generally dissipate with distance from the vibration source. Because energy is lost during the transfer of energy from one particle to another, vibration becomes less perceptible with increasing distance from the source.

As discussed in the Caltrans’ *Transportation and Construction Vibration Guidance Manual*, operation of construction equipment generates ground vibration. Maintenance operations and traffic traveling on roadways can also be a source of such vibration. If amplitudes are high enough, ground vibration has the potential to damage structures, cause cosmetic damage or disrupt the operation of vibration-sensitive equipment such as electron microscopes and advanced technology production and research equipment. Ground vibration and groundborne noise can also be a source of annoyance to individuals who live or work close to vibration-generating activities (Caltrans, 2013b).

In describing vibration in the ground and in structures, the motion of a particle (i.e., a point in or on the ground or structure) is used. The concepts of particle displacement, velocity, and acceleration are used to describe how the ground or structure responds to excitation. Although displacement is generally easier to understand than velocity or acceleration, it is rarely used to describe ground and structure borne vibration because most transducers used to measure vibration directly measure velocity or acceleration, not displacement. Accordingly, vibratory motion is commonly described by identifying the peak particle velocity (PPV) (Caltrans, 2013b).

Sensitive Land Uses in the Project Vicinity

Some land uses are considered more sensitive to noise than others due to the amount of noise exposure and the types of activities typically involved at the receptor location. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, nursing homes, and parks are generally more sensitive to noise than commercial and industrial land uses. The closest noise-sensitive land uses adjacent to the project site are shown in **Figure 4.11-1, *Distance to Nearest Residences***. Specifically, the two closest noise-sensitive uses nearest the project site are the following:

- Multi-family residential land uses are located to the south of the East Parcel, across Laurel Tree Lane, at the intersection of Aviara Parkway and Laurel Tree Lane, approximately 60 feet from the project site.
- Single-family residences are located on top of a hillside approximately 250 feet to the west of the West Parcel.

The nearest daycare is the MAAC Day Care (1307 Laurel Tree Lane) within the Laurel Tree apartments and located approximately 285 feet south of the East Parcel as measured from the closest edge of the site. The Poinsettia KinderCare, 1200 Plum Tree Road, is approximately 1,950 feet (0.37 miles) southwest of the project site. The school nearest to any component of the project site is the Pacific Rim Elementary School (1100 Camino De Las Ondas) located approximately 0.55 miles south of the site.

The nearest park is Poinsettia Park, located at 6600 Hidden Valley Road, which is approximately 1,910 feet southwest of the project site. The nearest hospital is the Tri-City Medical Center, located at 4002 Vista Way, Oceanside, which is approximately 4.4 miles north of the project site.

These noise-sensitive uses are located at greater distances from the project site than the noise-sensitive uses shown in Figure 4.11-1 and listed in the bullets above. Thus, these additional noise sensitive uses would experience lower noise levels associated with the proposed project. Therefore, additional sensitive receptors beyond those listed in the bullets above are not evaluated.



Aviara Apartments Project

SOURCE: Charles M. Salter Associates, Inc. Aviara Apartments Environmental Noise Study. May 2019

Figure 4.11-1
Distance to Nearest Residences



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Existing Noise Conditions

Environmental noise at the project site is due primarily to traffic on Aviara Parkway which traverses the project site separating the East Parcel and the West Parcel, traffic on Palomar Airport Road to the north, and aircraft associated with McClellan-Palomar Airport, located to the northeast. To quantify the existing noise environment, Charles M. Salter Associates, Inc. (the applicant’s noise consultant) conducted two 24-hour noise measurements at the site on June 16, 2016, and June 17, 2016.¹ **Table 4.11-2, Existing Noise Environment**, summarizes the measured noise levels. **Figure 4.11-2, Measurement Locations and Measured CNEL**, shows the approximate measurement locations.

**TABLE 4.11-2
 EXISTING NOISE ENVIRONMENT**

Site	Location	Date	CNEL
L1	Approximately 65 feet south of Palomar Airport Road centerline, approximately 860 feet west of the Aviara Parkway centerline, and 12 feet above grade.	June 16 & 17, 2016	78 dB
L2	Approximately 50 feet west of Aviara Parkway centerline, approximately 625 feet south of Palomar Airport Road centerline, and 12 feet above grade.	June 16 & 17, 2016	72 dB

NOTES:

dB = decibel

SOURCE: CMSA, Inc., 2019

4.11.2 Regulatory Setting

The following state and federal regulations provide an overall context for the consideration of site-specific issues at the project site. When provisions are requirements (e.g., law, code, regulation, or ordinance), it is assumed these regulatory requirements would be adhered to with project implementation, both as they apply to development of the proposed project and related project activities.

Federal

Under the authority of the Noise Control Act of 1972, the United States Environmental Protection Agency (EPA) established noise emission criteria and published testing methods in 40 CFR Parts 201 through 205 that apply to some transportation equipment (e.g., interstate rail carriers, medium trucks, and heavy trucks) and construction equipment. In 1974, the EPA issued guidance levels for the protection of public health and welfare in residential areas of an outdoor L_{dn} of 55 dBA and an indoor L_{dn} of 45 dBA (EPA, 1974). These guidance levels are not considered as standards or regulations and were developed without consideration of technical or economic feasibility. As a result, there are no federal noise standards that directly regulate construction or operational noise of the proposed project.

¹ Based on a review of historical aerials of the project site and the surrounding area, it has been confirmed that land uses have remained relatively constant in the project area since 2014, and thus, the 2016 measurements are a valid characterization of existing conditions today.



Aviara Apartments Project
Figure 4.11-2
 Measurement Locations and Measured CNEL

SOURCE: Charles M. Salter Associates, Inc. Aviara Apartments Environmental Noise Study. May 2019



State

California Department of Health Services

The State of California does not have statewide standards for environmental noise, but the California Department of Health Services (DHS) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise compatibility by different land use types is categorized into four general levels: “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable.” For instance, a noise environment ranging from 50 dBA CNEL to 65 dBA CNEL is considered to be “normally acceptable” for multi-family residential uses, while a noise environment of 75 dBA CNEL or above for multi-family residential uses is considered to be “clearly unacceptable.” In addition, California Government Code Section 65302(f) requires each county and city in the state to prepare and adopt a comprehensive long-range General Plan for its physical development, with Section 65302(g) requiring a Noise Element to be included in the General Plan. The Noise Element must: (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

California Code of Regulations (California Noise Insulation Standards)

California has established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, Part 2, California Code of Regulations). The standards establish minimum requirements for the isolation of interior spaces from exterior noise and set minimum ratings for noise insulation of partitions between dwelling units. The CNEL of 45 dB is set as the maximum for interior noise levels from exterior sources. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

Caltrans Construction Vibration Criteria

Caltrans provides vibration design criteria for construction damage (Caltrans, 2013b). Transient vibrations are classified as short impulsive events that are short in duration (e.g., debris falling). Continuous vibrations are more sustained vibration events over longer periods of time (e.g., jackhammering, drilling). Thresholds for continuous vibrations are lower than those for transient vibrations and are therefore more conservative.

Table 19 of the Caltrans’ document – a portion of which is reproduced below as **Table 4.11-3, Caltrans Vibration Damage Potential Damage Threshold Criteria**, provides vibration levels that can be used to assess the damage potential from ground vibration induced by construction equipment. The Caltrans criteria are a synthesis of various vibration criteria of both transient and continuous noise sources. These are standard significance thresholds often used in CEQA documents to determine impacts of groundborne vibrations on structures.

**TABLE 4.11-3
CALTRANS VIBRATION POTENTIAL DAMAGE THRESHOLD CRITERIA**

Structure and Condition ^b	Maximum PPV ^a	
	Transient Sources	Continuous/Frequent Intermittent Sources
Older residential structures	0.50	0.30
New residential structures	1.00	0.50

NOTES:
^a PPV (Peak Particle Velocity) - A measure used to describe how the ground or structure responds to excitation, describing the zero-to-peak amplitude.
^b Examples of an older structure may be a historically important structure and/or a structure in poor condition.
 SOURCE: Caltrans, 2013b.

Regional

McClellan-Palomar Airport Land Use Compatibility Plan

The San Diego County Regional Airport Authority (Authority) serves as the Airport Land Use Commission (ALUC) for San Diego County. The ALUC adopted the McClellan-Palomar Airport Land Use Compatibility Plan (ALUCP) for the McClellan-Palomar Airport, located approximately 0.6 miles from the project site. The Authority uses the ALUCP in fulfilling its purpose of promoting airport land use compatibility. Per State law, local agencies are required to modify their General Plans to be consistent with the ALUCP, or to take special steps to overrule the ALUC. The city's General Plan Noise Element addresses and incorporates the ALUCP in its policies, goals, and noise exposure standards.

The ALUCP provides noise compatibility policies that help to avoid the establishment of new incompatible land uses and to avoid the exposure of users to levels of aircraft noise that can disrupt the activities involved. Although the ALUC has the authority to adopt the ALUCP and to conduct compatibility reviews, the authority and responsibility for implementing the compatibility policies rests with local agencies that control land uses within the Airport Area of Influence (AIA) (San Diego County Regional Airport Authority, 2010). Taking into account the characteristics of the airport and the communities surrounding the airport, the ALUCP has established noise contours for the AIA surrounding the airport. All land uses located outside the 60 dBA noise contour are consistent with the noise compatibility policies. Based on Exhibit III-1 of the ALUCP, this project site is located fully within the 60 to 65 dBA CNEL contour.

Multi-family residences are considered conditionally acceptable in the 60 to 65 dBA CNEL contour with the following comments provided by the ALUC, based on Table III-1 of the ALUCP:

- Indoor Uses: Building structure must be capable of attenuating exterior noise to 45 dBA CNEL, standard construction methods will normally suffice.
- Outdoor Uses: [60-65 dBA] CNEL is acceptable for outdoor activities, though some noise interference may occur.

The policies and criteria provided by the ALUC in the ALUCP are consistent with the policies, goals, and noise exposure standards of the city as specified in the Noise Element of the General Plan. Consistency of the project with these policies is addressed both in Section 4.11.4, *(Noise) Project Impact Analysis*, as well as in Section 4.10.4, *(Land Use and Planning) Project Impact Analysis*.

Local

City of Carlsbad General Plan

The City's General Plan Noise Element contains interior noise standards consistent with the state requirements for multi-family residential land uses. Table 5-1 of the General Plan Noise Element, which contains land-use compatibility standards for environmental noise at multi-family residential sites, is included in **Table 4.11-4, Summary of Land-Use Compatibility for Community Noise Environments**. The following goal and policies in the Noise Element are applicable:

- 5-G.2 Ensure that new development is compatible with the noise environment, by continuing to use potential noise exposure as a criterion in land use planning.
- 5-P.1 Acceptability of Use Location. Use the noise and land use compatibility matrix (Table 5-1 in the Noise section of the General Plan) and Future Noise Contours map (Figure 5-3 in the Noise section of the General Plan) as criteria to determine acceptability of a land use, including the improvement/construction of streets, railroads, freeways and highways. Do not permit new noise-sensitive uses—including schools, hospitals, places of worship, and homes—where noise levels are “normally unacceptable” or higher, if alternative locations are available for the uses in the city.
- 5-P.2 Required Noise Analysis. Require a noise analysis be conducted for all discretionary development proposals (except for developments of single family homes with four units or fewer) located where projected noise exposure would be other than “normally acceptable”. A required noise analysis should:
 - a. Be prepared by a certified noise consultant or acoustical engineer;
 - b. Be funded by the applicant;
 - c. Include a representative, on-site day and night sound level measurement;
 - d. Include a delineation of current (measured) and projected (General Plan or 10 years in future, whichever horizon extends further out) noise contours;
 - e. Identify noise levels with and without the proposed project, ranging from 55 to 75 dBA (Ldn) within the proposed development site; and
 - f. If noise levels exceed the standards in Table 5-1, include a description of adequate and appropriate noise abatement measures to mitigate the noise to allowable levels for the proposed use.
- 5-P.5 Noise Generation. As part of development project approval, require that noise generated by a project does not exceed standards established in Table 5-3 (of the Noise section of the General Plan).

As directed by the above policies, the City has required a noise analysis for the proposed project and will consider whether measures are appropriate to address noise exposure to future residents of the project. In addition, the analysis contained in the project noise impact analysis of this EIR

(Section 4.11.4) addresses Policy 5-P.5, which requires that noise generated by the proposed project does not exceed the standards established in Table 5-3 of the General Plan).

With respect to these standards, changes in noise levels of less than 3 dBA are generally not discernible to most people, while changes greater than 5 dBA are readily noticeable and would be considered a significant increase. Therefore, the significance threshold for mobile source noise is based on human perceptibility to changes in noise levels (increases), with consideration of existing ambient noise conditions.

**TABLE 4.11-4
SUMMARY OF LAND-USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS**

Exterior CNEL	Land Use Compatibility for Residential Multi-Family Projects
65 dB or less	Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
60 to 70 dB	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.
70 to 75 dB	Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
75 dB or higher	Clearly Unacceptable: New construction or development clearly should not be undertaken.

NOTES:
dB = decibel
SOURCE: Carlsbad, 2015.

Table 5-2, *Allowable Noise Exposure*, of the General Plan indicates acceptable limits of noise for various land uses for both exterior and interior environments, including residential uses, taking into account noise attenuation measures. Table 5-2 of the General Plan indicates that proposed development within the McClellan-Palomar Airport AIA shall also be subject to the noise compatibility policies contained in the ALUCP. Table 5-2 provides the following noise exposure standards for residential land uses:

- The allowable noise exposure standard for interior spaces in residences is 45 dBA CNEL.
- The exterior noise standard for outdoor activity area at residences is 60 dBA CNEL. However, an exterior noise exposure level of 65 dBA CNEL is allowable for residential uses within the McClellan-Palomar AIA.

Table 5-3 of the City of Carlsbad General Plan Noise Element, which includes performance standards for hourly average and maximum noise levels for non-transportation sources is repeated in **Table 4.11-5, Performance Standards for Non-Transportation Sources (as Measured at Property Line of Source/Sensitive Use)**.

**TABLE 4.11-5
PERFORMANCE STANDARDS FOR NON-TRANSPORTATION SOURCES
(AS MEASURED AT PROPERTY LINE OF SOURCE/SENSITIVE USE)**

Noise Level Descriptor	Daytime (7 AM to 10 PM)	Nighttime (10 PM to 7 AM)
Hourly Leq, dB	55	45
Maximum Level, dB	75	65

NOTES:
dB = decibel
SOURCE: Carlsbad, 2015.

City of Carlsbad Municipal Code

Carlsbad Municipal Code (CMC) Section 8.48.010 prohibits construction after 6:00 p.m. and before 7:00 a.m., Monday through Friday; before 8:00 a.m. on Saturday; and all day on Sunday and on federal holidays. Signs must be posted at jobsite entrance(s) indicating the hours of work. The city does not have numerical requirements for construction noise.

CMC Section 21.31.080.G requires that all roof appurtenances, including air conditioners, are architecturally integrated and shielded from view and the sound buffered from adjacent properties and streets, to the satisfaction of the city planner.

City of Carlsbad Noise Guidelines Manual

The City of Carlsbad authored a Noise Guidelines Manual in order to provide guidelines and procedures to implement policies outlined in the Noise Element of the Carlsbad General Plan (City of Carlsbad, 2013). Many of the general policies and specific noise standards discussed above are included in the Noise Guidelines Manual. The Noise Guidelines Manual is intended to primarily address community noise issues related to land use. The Noise Guidelines Manual specifically states that noise generated from construction activities is regulated by CMC Section 8.48 and suggests that construction activities include appropriate noise attenuation devices (such as mufflers) on all construction vehicles or equipment located within 1,000 feet of noise sensitive land use (City of Carlsbad, 2013).

4.11.3 Thresholds and Methodology

Thresholds

A significant impact would occur to noise and vibration if the proposed project would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies.
- Generation of excessive groundborne vibration or groundborne noise levels.
- For a project located within the vicinity of a private airstrip or an airport land use plan, would the project expose people residing or working in the project area to excessive noise levels.

With respect to the community noise assessment, changes in noise levels of less than 3 dBA are generally not discernable to most people, while changes greater than 5 dBA are readily noticeable (Caltrans, 2013a). The City's Noise Guidelines Manual establishes noise evaluation process that identifies an increase in existing noise level of more than 3 dBA CNEL as a possible indicator for noise impacts where additional analysis should be conducted (City of Carlsbad, 2013). Therefore, the significance threshold for operational mobile source noise is based on human perceptibility to changes in noise levels (increases) with consideration of existing ambient noise conditions based on a 3 dBA CNEL increase in existing noise level as a possible indicator for noise impacts in which case additional analysis is conducted.

Methodology

Overall changes to the noise environment resulting from development of the proposed project could include the following:

- Project-related traffic increases.
- Potential rooftop mechanical equipment noise.
- Potential increases in noise associated with the project residences and facilities (e.g., the maintenance and use of the pool and/or landscaping equipment used to maintain the project).
- Short-term construction noise and vibration.

Because of the location of noise-sensitive receptors, the noise analysis evaluates the noise effects of the proposed project on existing residential development located to the west and south of the project site. Multi-family residential land uses located to the south, approximately 60 feet from the project site and single-family residences are located approximately 250 feet to the west of the West Parcel.

Analysis of the proposed project's temporary construction noise effects is based on estimates of construction equipment units and duration of use. The analysis accounted for attenuation of noise levels due to distances that would be between the construction activity and the nearest noise sensitive land uses. Construction noise levels at nearby sensitive land uses were estimated using the Federal Highway Administration (FHWA) Traffic Noise Construction Noise Handbook (FHWA, 2006) and guidance from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment.

The proposed project would comply with Section 8.48 of the CMC; the proposed project's construction activities would not occur after 6:00 p.m., before 7:00 a.m., Monday through Friday; before 8:00 a.m. on Saturday; and any time Sunday or on federal holidays.

Roadway noise impacts were evaluated using the FHWA Traffic Noise Model method (FHWA 2006b) based on the roadway traffic volume data provided in the Traffic Impact Analysis (TIA) (MBI, 2019) prepared for the proposed project and included in Appendix J of this EIR. The traffic noise calculation methodology assumed speeds of 45 miles per hour (mph) on Aviara Parkway and 55 mph on Palomar Airport Road, and assumed trucks made up 3% of traffic. Roadway noise

attributable to development of the proposed project was calculated and compared to existing noise levels.

4.11.4 Project Impact Analysis

Impact 4.11-1: Would the proposed project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies?

Temporary Increases in Noise Levels due to Construction

Construction activities may include the use of heavy equipment for grading and other activities, through completion of buildings and landscaping. Heavy trucks would travel to, from, and within the site hauling soil, equipment, and building materials. Smaller equipment, such as saws, could also be used throughout the demolition and construction phases.

Existing residences located to the south and west of the project site, approximately 60 feet and 250 feet away, respectively, with direct line-of-sight to construction activities and construction traffic could be affected by construction noise. Potential construction noise impacts would vary with distance and shielding provided by existing buildings. Estimated construction noise levels at the nearest residences are shown in **Table 4.11-6, Construction Noise Levels**.

A calculation for construction noise at the closest residential locations, 60 feet to the south and 250 feet to the west, are provided in Appendix I.1, with locations indicated in Figure 4.11-1, *Distance to Nearest Residences*.

As noted above in Section 4.11.2, the City does not have numerical criteria for construction noise to determine if there is an impact. However, the City's Noise Guidelines Manual, Table IV-2 indicates an impact could occur when construction occurs within 1,000 feet of a noise sensitive land use. As indicated in Figure 4.11-1, *Distance to Nearest Residences*, the proposed project would be within 1,000 feet of the nearest noise-sensitive receptors. The closest noise-sensitive land uses are residences located to the south and west of the project site, approximately 60 feet and 250 feet away, respectively. Construction noise levels experienced at these respective distances are provided in Table 4.11.6, *Construction Noise Levels*. Construction of the project would comply with CMC Section 8.48, and thus would be in compliance with applicable city standards. Nonetheless, as construction activities would temporarily increase the ambient noise level at noise-sensitive receptors by more than a readily noticeable margin within the 1,000-foot distance as referenced in the City's Noise Guidelines Manual, it is conservatively concluded that impacts from construction of the proposed project would be **potentially significant**.

**TABLE 4.11-6
CONSTRUCTION NOISE LEVELS**

Phase	Equipment	Noise Level at 60-feet	Noise Level at 60-feet with Mitigation ^a	Noise Level at 250-feet	Noise Level at 250-feet with Mitigation ^a
Demolition	Concrete/Industrial Saws, Excavators, Rubber-Tired Dozers, Tractors/Loaders/Backhoes	85-88 dB	75-78 dB	72-75 dB	62-65 dB
Site Preparation	Graders, Rubber-Tired Dozers, Tractors/Loaders/Backhoes	83-88 dB	73-78 dB	70-75 dB	60-65 dB
Grading/Excavation	Excavators, Graders, Rubber-Tired Dozers, Tractors/Loaders/Backhoes	83-88 dB	73-78 dB	71-76 dB	61-66 dB
Trenching	Tractor/Loader/Backhoe, Excavators	79-85 dB	69-75 dB	67-73 dB	57-63 dB
Building Exterior	Cranes, Forklifts, Generator Sets, Tractors/Loaders/Backhoes, Welders	82-88 dB	72-78 dB	69-75 dB	59-65 dB
Building Interior/Architectural Coating	Air Compressors, Aerial Lift	81-83 dB	71-73 dB	66-68 dB	56-58 dB
Paving/Landscaping/Site Concrete	Cement and Mortar Mixers, Pavers, Paving Equipment, Rollers, Tractors/Loaders/Backhoes	82-89 dB	72-79 dB	69-76 dB	59-66 dB

NOTES:

^a Reductions of 10 dBA or more can be achieved with optimal muffler systems. (FHWA, Construction Noise. June 2017. Available at: https://www.fhwa.dot.gov/Environment/noise/construction_noise/special_report/hcn04.cfm)

dB = decibel

SOURCE: CMSA, Inc., 2019 and FHWA, 2017.

Permanent Increases in Noise Levels due to Project-Generated Noise

Operational noise sources associated with the proposed project site would include, but would not be limited to, mechanical equipment (e.g., HVAC units and swimming pool pumps); landscape maintenance equipment; and outdoor activities in the swimming pool areas.

Although mechanical equipment associated with the proposed project has not yet been selected, noise from rooftop mechanical equipment must be limited to the levels described above in Table 4.11-5 to meet the CMC Section 21.31.080.G, which requires that all roof appurtenances, including air conditioners, are sound buffered from adjacent properties and streets. During the design phase of the proposed project all rooftop mechanical equipment would be designed with appropriate noise control devices, such as sound attenuators, acoustics louvers, or sound screen/parapet walls to comply with the requirements of the CMC. Therefore, operation of mechanical equipment would not exceed the city’s thresholds of significance and impacts would be **less than significant**.

The project's noise from the pool courtyard (outdoor pool activities and swimming pool pumps and pool maintenance activities) would be shielded at off-site noise-sensitive receptors to the north, east, and south by the project buildings. With respect to pool activities, under a conservative scenario, there could be up to approximately 100 people at the communal pool at one time. Noise from human conversation is approximately 55 dBA at a distance of 3 feet and

noise from children talking loudly is approximately 74 dBA at a distance of 3 feet (AJA, 1998). Assuming 50 adults and 50 children, with half of the people talking loudly simultaneously, the continuous noise level would be approximately 91 dBA at 3 feet. Based on a noise level source strength of 91 dBA at a reference distance of 3 feet, and accounting for distance attenuation of 6 dBA per doubling of distance, the communal pool related noise would be approximately 52 dBA or less at the single-family residences located approximately 300 feet to the west of the pool courtyard, which is the closest resident to the communal pool area. Noise shielding effects from the project buildings, which would fully block the line-of-sight to the off-site noise-sensitive receptors to the north, east, and south, would further reduce the noise level from pool activities by 10 dBA or more to 42 dBA or less. This noise level would not exceed the General Plan standards for residential uses of 65 dBA and would not contribute substantially to project-related permanent increases in composite operational noise.

Swimming pool pumps and pool maintenance activities would generate noise within the site. Similar to the HVAC equipment, the pool pumps have not yet been selected. Nonetheless, swimming pool pumps would be selected and installed to comply with the City's General Plan standards such that the noise level at the property line would not exceed 65 dBA for residential uses. Furthermore, noise generated by swimming pool pumps and pool maintenance activities would be relatively low and would be fully shielded at off-site noise-sensitive receptors to the north, east, and south by the project buildings, which would fully block the line-of-sight to the off-site noise-sensitive receptors. Based on the noise shielding effects from the project buildings and by complying with the City's Noise Ordinance, operation of the pool courtyard would not exceed the city's thresholds of significance and impacts would be **less than significant**.

The passive courtyard is located on the eastern perimeter of the West Parcel. The project's noise from the passive courtyard would be shielded at off-site receptors to the north, west, and southwest by the project buildings. Under a conservative scenario, there could be up to 30 people at the passive courtyard at one time. Noise from human conversation is approximately 55 dBA at a distance of 3 feet and noise from children talking loudly is approximately 74 dBA at a distance of 3 feet (AJA, 1998). Assuming 15 adults and 15 children, with half of the people talking loudly simultaneously, the continuous noise level would be approximately 86 dBA at 3 feet. Based on a noise level source strength of 86 dBA at a reference distance of 3 feet, and accounting for distance attenuation of 6 dBA per doubling of distance, the outdoor area noise would be approximately 50 dBA at the multi-family residences located approximately 200 feet to the southeast of the passive courtyard, which would not exceed the General Plan standards for residential uses of 65 dBA and would not contribute substantially to project-related permanent increases in composite operational noise. Therefore, operation of the passive courtyard would not exceed the city's thresholds of significance and impacts would be **less than significant**.

Landscaping at the project site would be occur periodically during daytime hours only for short-term durations. Noise from landscape maintenance equipment would be similar to noise currently generated by the same activities occurring at nearby land uses (the multi-family residence to the south and single-family residences to the west). Because landscaping equipment would typically be used on a periodic weekly basis during daytime hours only and would not occur on a regular

daily basis, the short-term and periodic noise from landscaping equipment would not substantially alter the day-to-day community noise levels and would have no effect on evening or nighttime hour community noise levels. Therefore, project landscaping would not result in a substantial increase in noise above existing noise levels. Noise impacts from use of landscape maintenance equipment would be **less than significant**.

Permanent Increases in Noise Levels due to Project Traffic Volumes

Based on the roadway noise methodology previously described, existing and 2020 plus project peak-hour traffic counts are shown in **Table 4.11-7, *Traffic Noise Levels***, and summarized as follows:

- Aviara Parkway from Palomar Airport Road to Laurel Tree Lane – increase from 1,403 vehicles to 1,904 vehicles, which corresponds to an approximate 1.3 dB increase in traffic noise
- Aviara Parkway from Laurel Tree Lane to Cobblestone Road – increase from 1,126 vehicles to 1,591 vehicles, which corresponds to an approximate 1.5 dB increase in traffic noise
- Aviara Parkway from Cobblestone Road to Plum Tree Road – increase from 1,128 vehicles to 1,593 vehicles, which corresponds to an approximate increase of 1.5 dB in traffic noise
- Aviara Parkway from Plum Tree Road to Camino de las Ondas – increase from 1,222 vehicles to 1,679 vehicles, which corresponds to an approximate increase of 1.4 dB in traffic noise
- Aviara Parkway from Camino de las Ondas to Poinsettia Lane – increase from 1,193 vehicles to 1,650 vehicles, which corresponds to an approximate increase of 1.4 dB in traffic noise
- Calculations for the traffic noise levels are provided in Appendix I.2, which include calculations based on the existing traffic counts, the 2020 traffic counts (which does not include the proposed project) and the 2020 plus project traffic counts. The noise level increase on local roadways due to the proposed project's off-site traffic would not exceed the 3 dBA threshold (for mobile source noise based on human perceptibility to changes in noise levels). Therefore, no further analysis is required and impacts would be **less than significant**.
- Due to future growth in the area surrounding the project site, traffic volumes on local roadways in the project study area under the future cumulative conditions would be greater than those under the existing and 2020 conditions. Project-related traffic volume increases would contribute to a smaller percentage of the future cumulative traffic volumes. Accordingly, project-related traffic noise level increases would be smaller than the corresponding increases under the existing and 2020 scenarios. Based on the existing and 2020 scenarios, project-related traffic noise level increases would be less than 3 dBA along roadway segments analyzed in the project study area. Therefore, future cumulative traffic noise impacts would be **less than significant**.

**TABLE 4.11-7
 TRAFFIC NOISE LEVELS**

Roadway Segment	Traffic Volume			dB Increase		
	Time	2018 Existing	2020	2020 + Project	2020 over Existing	2020 + Project over Existing
Aviara Parkway - Palomar Airport Road to Laurel Tree Lane	AM	1,294	1,509	1,602	0.6	0.9
	PM	1,403	1,798	1,904	1.1	1.3
Aviara Parkway - Laurel Tree Lane to Cobblestone Road	AM	1,224	1,439	1,502	0.7	0.9
	PM	1,126	1,521	1,591	1.3	1.5
Aviara Parkway - Cobblestone Road to Plum Tree Road	AM	1,113	1,328	1,391	0.8	1.0
	PM	1,128	1,523	1,593	1.3	1.5
Aviara Parkway - Plum Tree Road to Camino de las Ondas	AM	1,178	1,393	1,448	0.7	0.9
	PM	1,222	1,617	1,679	1.2	1.4
Aviara Parkway - Camino de las Ondas to Pointsettia Lane	AM	1,184	1,399	1,454	0.8	0.9
	PM	1,193	1,588	1,650	1.2	1.4

NOTES:
 dB = decibel
 SOURCE: MBI 2019 and ESA 2019.

Impact 4.11-2: Would the proposed project result in generation of excessive groundborne vibration or groundborne noise levels?

Temporary Increase in Vibration Levels due to Construction

Construction of the proposed project may include activities such as the use of concrete saws, excavation and grading, and the use of rolling stock equipment (tracked vehicles, compactors, etc.), which may result in increased vibration levels. Typical construction vibration levels are listed in **Table 4.11-8, Construction Equipment Example Vibration Levels.**

**TABLE 4.11-8
 CONSTRUCTION EQUIPMENT EXAMPLE VIBRATION LEVELS**

Equipment	PPV at 25 feet (in/sec)	PPV at 60 feet (in/sec) ^a
Vibratory Roller	0.210	0.056
Hoe Ram	0.089	0.024
Large Bulldozer	0.089	0.024
Loaded Trucks	0.076	0.020
Jackhammer	0.035	0.009
Small Bulldozer	0.003	0.001

NOTES:
 a) Using a value of n = 1.5 per FTA recommendation, where n is the attenuation rate through the ground
 - PPV (Peak Particle Velocity) - A measure used to describe how the ground or structure responds to excitation, describing the zero-to-peak amplitude.
 SOURCE: CMSA, Inc., 2019 and FTA, 2018.

As shown on Figure 4.11-1, *Distance to Nearest Residences*, the nearest sensitive receptors are the multi-family residences located approximately 60 feet south of the project site. Based on the distance of the nearest sensitive receptors and the anticipated vibration levels shown in Table 4.11-8, *Construction Equipment Example Vibration Levels*, construction equipment is not expected to cause structural damage to adjacent residences because construction activities associated with the proposed project are not expected to exceed the thresholds shown above in Table 4.11-3 for older or new residences. Vibration levels would need to be substantially higher and would need to persist for extended periods of time, to cause structural damage. Thus, vibration levels are expected to be less than both the transient and continuous Caltrans vibration damage potential threshold shown above in Table 4.11-3. Therefore, vibration impacts during construction of the proposed project would be **less than significant**.

Permanent Increase in Vibration Levels due to Project-Generated Vibration

Once construction activities have been completed, there would be no substantial sources of vibration activities from the project site. Operation of the proposed project would include typical stationary mechanical and electrical equipment, such as air handling units, condenser units, and exhaust fans, which would produce limited levels of vibration. The project mechanical and electrical equipment would be located on or within the project buildings, such as on the rooftop or within mechanical rooms. The equipment would be designed to avoid generating discernable vibration levels on the project buildings themselves, which would also avoid generating groundborne vibration off the project site. Therefore, groundborne vibration from the operation of such mechanical equipment would not impact any of the off-site sensitive receptors. The primary sources of transient vibration would include passenger vehicle circulation within the proposed parking areas, which also produce limited levels of vibration. According to the FTA, vibration from rubber-tired traffic on fairly smooth roadways is rarely perceptible (FTA, 2018). Thus, passenger vehicles would generate substantially lower levels of vibration compared to the vibration levels identified above for construction. Therefore, vibration impacts during operation of the proposed project would be **less than significant**.

Impact 4.11-3: For a project located within the vicinity of a private airstrip or an airport land use plan, expose people residing or working in the project area to excessive noise levels?

The proposed project is not located near a private airstrip but is located within the McClellan-Palomar AIA. The ALUCP defines the noise impact area of the McClellan-Palomar Airport as all land uses located within the 60 dBA contour. Based on Exhibit III-1 of the ALUCP, the project site is located within the 60 to 65 dBA noise contour; thus, the proposed project site is within the noise impact area of the airport.

As stated above, the project site is located within the 60 to 65 dBA noise contour within the McClellan-Palomar ALUCP. Aside from airport noise, roadway traffic is the predominant source of noise in the project site area. At the West Parcel, at the ground floor outdoor lounge area and

pool courtyard areas, future noise levels are estimated to be approximately 62 dBA due to local traffic. At the passive courtyard, future noise levels are estimated to be approximately 67 dBA due to local traffic. Additionally, at the East Parcel in the courtyard, future noise levels are estimated to be approximately 69 dBA due to local traffic.

The ALUCP states that the California Building Code requires that building structures must reduce interior noise levels from aircraft to 45 dBA. This indoor noise exposure standard is also within the city's General Plan Noise Element.

Residential buildings with typical construction materials and techniques can achieve a 25 dB noise level reduction from exterior to interior, when windows are closed (Gordon, 1971). The project would include an HVAC system that would provide central heat and air conditioning allowing residents to comfortably close the windows. Thus, future project residents would be able to close their windows, while maintaining a comfortable temperature level, and the interior noise levels would experience a 25 dB reduction in noise levels from exterior noise levels. Assuming the maximum noise level generated by transportation noise (69 dBA), combined with the McClellan-Palomar ALUCP noise contour level of 60 to 65 dBA results in an approximate 70 dBA noise level. Reducing that by 25 dB from closed windows results in interior noise levels of approximately 45 dBA for future residents within the proposed project buildings. Residents of the proposed project would not be subject to interior noise levels in excess of 45 dBA; therefore, operation of the proposed project within the McClellan-Palomar AIA would be less than significant.

The City of Carlsbad's Noise Element of the General Plan has adopted an exterior noise standard of 60 dBA for multi-family residential land uses. As discussed above, based on airport and roadway traffic noise modeling, the estimated exterior noise levels at these outdoor recreational areas would exceed 60 dBA. Therefore, the noise study conducted for the project recommended noise barriers be constructed on the sides of both courtyards. While this recommendation is not necessary in response to an environmental impact caused by the project, the city and the project applicant have the discretion to consider this recommendation.

4.11.5 Level of Significance before Mitigation

Implementation of the proposed project would result in a potentially significant impact, as discussed above under Impact 4.11-1.

4.11.6 Environmental Mitigation Measures

The following mitigation measure would reduce the proposed project's potentially significant impact identified under Impact 4.11-1, which would result from noise generated during construction activities. The following mitigation measure would reduce noise impacts during construction by implementing a variety of methods and techniques for noise reduction, as outlined below.

Mitigation Measure NOI-1: Construction-measures to Reduce Noise Impacts. The following field techniques shall be implemented by the project construction contractor to reduce construction-related noise:

- a. The applicant shall coordinate with contractors and sub-contractors to require that equipment and trucks use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds). The installation of improved mufflers would provide at least 10 dBA noise reduction at all off-site sensitive receptor locations (FHWA, 2017).
- b. Internal combustion engine driven equipment shall be equipped with intake and exhaust mufflers that are in good condition. Engines shall be turned off when not in use. Idling shall be limited to no more than 5 minutes at a time.
- c. Impact tools used for this project shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools.
- d. Impact tools shall use external jackets to reduce noise generation.
- e. Vehicle staging and stockpiling shall be located as far as practical from nearby residences, such as in the northern half of the East Parcel or the northern half or central portions of the West Parcel.

This mitigation measure addresses the impact identified under Impact 4.11-1 of the EIR.

4.11.7 Level of Significance after Mitigation

Implementation of Mitigation Measure NOI-1 would reduce potentially significant impacts resulting from construction of the proposed project to levels that would be **less than significant**. Mitigation Measure NOI-1 would reduce the overall noise generation and duration of noise associated with construction of the proposed project. Thus, impacts related to construction noise would be **less than significant**.

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4.12 Population and Housing

This section provides a description and an evaluation of potential impacts to population and housing that could result from implementation of the proposed project. The analysis in this section is based on city growth guidance documents (such as the GMP and the Local Facilities Management Plan [LFMP] for Zone 5), information in the General Plan, and California Department of Finance, U.S. Census Bureau, and San Diego Association of Governments (SANDAG) population projections. Any applicable issues and concerns regarding potential impacts related to population and housing as a result of implementation of the proposed project are analyzed within this section.

4.12.1 Existing Conditions

Population

Since incorporation in 1952, the city has grown steadily and substantially over the decades from a population of 9,253 in 1960 to 105,328 in 2010 (City of Carlsbad, 2017a). According to the Housing Element of the General Plan (Housing Element), the city's population is projected to reach 118,241 residents in 2020, an increase of 12% over the 2010 population (City of Carlsbad, 2017a). Between 2000 and 2010, Carlsbad's proportional change in population was over three times that for the region as a whole (City of Carlsbad 2017a). According to the U.S. Census, Carlsbad's population on January 1, 2017, was 115,330, which is a 9.5% increase from 2010 and only 2,911 residents shy of the city's 2020 projection (U.S. Census Bureau, 2017a).

The project site is located in the southwest quadrant of the city, and is entirely within LFMP Zone 5. The city's General Plan designates the project site as R-30, Residential (23–30 dwelling units per acre [du/ac]) (City of Carlsbad, 2015a). The project site is zoned as Residential Density – Multiple (RD-M) (City of Carlsbad, 2017b). Both the zoning and land use designations are planned for high-density residential uses, thus indicating the city has planned for an increase in population at the project site.

Housing

According to the Housing Element, Carlsbad had 46,022 housing units as of 2015. Among these units, two-thirds or 67% were single-family, including 49% single-family detached units and 18% single-family attached units. Multi-family dwelling units comprised 30% of the city's housing stock in 2010 and the remaining 3% were mobile homes (City of Carlsbad, 2017a). According to the U.S. Census Bureau, the amount of housing units within the city was estimated at 47,119 units by the end of 2017, which represents an increase of 5.5% since 2010.

Between 2000 and 2010, the housing stock in Carlsbad increased 31%, which is over 10,000 homes. Much of that growth was due to the significant increase in the development of multi-family units. Through 2010, the proportion of single-family dwelling units (detached and attached) and mobile homes in the city decreased, but the number of multi-family units increased, suggesting a trend toward more compact development and opportunities for more affordable housing. This trend continued through 2015, particularly seen in a decrease in the development of

single-family attached housing. The pace of growth, however, declined as the housing stock only increased by 1,600 units, or almost 4% since 2010. (City of Carlsbad, 2017a). As mentioned above, the project site is within the southwest quadrant. According to the October 2019 Development Monitoring Report, the current housing stock in the southwest quadrant is 10,158 units (City of Carlsbad, 2019).

Table 4.12-1, *Population and Household Estimates for City of Carlsbad*, summarizes population and household estimates for the City from 2000 through 2017.

**TABLE 4.12-1
POPULATION AND HOUSEHOLD ESTIMATES FOR CITY OF CARLSBAD**

	2000	2010	2015	2017	% Change from 2010-2017
Population	78,247	105,328	111,547	115,330	9.5%
Total Households	33,798	44,673	46,296	47,119	5.5%

SOURCE: U.S. Census Bureau. 2000; 2010a; 2015, 2017. DOF 2018.

The SANDAG Series 13 Regional Growth Forecast shows the population and housing projections for communities within its jurisdictions. SANDAG projections for the city are shown in **Table 4.12-2, *SANDAG Population and Housing Projections for the City of Carlsbad***. The Series 13 Regional Growth Forecast represents a combination of economic and demographic projections, existing land use plans and policies, as well as potential land use plan changes that may occur in the region between 2030 and 2050. In general, growth between 2012 and 2030 is based on adopted land use plans and policies, and growth between 2030 and 2050 includes alternatives that may, in some cases, reach beyond existing adopted plans.

**TABLE 4.12-2
SANDAG POPULATION AND HOUSING PROJECTIONS FOR THE CITY OF CARLSBAD**

	2010	2015	2020	2035	2050	% Change from 2010-2050
Population	106,804	111,547 ^a	118,450	124,351	124,518	16.5%
Households	43,844	46,022	48,104	50,224	50,559	15.3%

^a SANDAG population estimates for Carlsbad were not available for the year 2015 so the 2015 U.S. Census Bureau estimate is shown.

SOURCE: SANDAG 2011b; 2013; U.S. Census Bureau 2015

The Housing Element provides population, household, and employment projections for 2000 through 2020. **Table 4.12-3, *Housing Element Projections for the City of Carlsbad***, shows that the city's population projection for 2020 is an estimated 118,241 residents, which would be an increase of 12% from the city's population in 2010. Table 4.12-3 also shows the projection of the city's housing units to be an estimated 48,104 units in 2020, which represents an increase of about 16% from 2010 (City of Carlsbad, 2017a).

**TABLE 4.12-3
HOUSING ELEMENT PROJECTIONS FOR THE CITY OF CARLSBAD**

	2000	2010	2020	% Change from 2000- 2010	% Change from 2010- 2020
Population	78,247	105,328	118,241	35%	12%
Housing Units	31,410	41,345	48,104	32%	16%

NOTE: Please refer to Housing Element Appendix B, which specifies a higher minimum density for individual properties. Residential development shall not be approved below this density or the density specified in the Housing Element, whichever is higher, except as provided for by Policy 2-P.7 of this element.

SOURCE: City of Carlsbad 2017a.

4.12.2 Regulatory Setting

State

State law mandates local communities plan for housing to meet projected growth in California. Article 10.6 of the California Government Code (Sections 655801–65590) requires each county and city to prepare a housing element for its general plan. The housing element is one of seven state-mandated elements that every general plan must contain, and it is required to be updated every 8 years and determined legally adequate by the State. The purpose of the housing element is to identify the community’s housing needs; state the community’s goals and objectives with regard to housing production, rehabilitation, and conservation to meet those needs; and define the policies and programs that the community would implement to achieve the stated goals and objectives.

State Housing Element Law

Pursuant to Section 65580 of the Government Code, a housing element must contain local commitments to:

- Provide sites with appropriate zoning and development standards and with services and facilities to accommodate the jurisdiction’s Regional Housing Needs Assessment (RHNA) for each income level. The RHNA is the only population and/or housing requirement that applies to a General Plan Update.
- Assist in the development of adequate housing to meet the needs of lower- and moderate-income households.
- Address, and where appropriate and legally possible, remove governmental constraints to the maintenance, improvement, and development of housing, including housing for all income levels and housing for persons with disabilities.
- Conserve and improve the condition of the existing affordable housing stock.
- Promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, familial status, or disability.
- Preserve assisted housing developments for lower-income households.

State law requires that adequate opportunity for participation be solicited from all economic segments of the community towards preparation of the housing element. Specifically, the

jurisdiction must reach out to lower and moderate-income persons and persons with special needs. Preparation of the Housing Element must also be coordinated with other local jurisdictions within the regional housing market area (County of San Diego, 2017).

A priority of both state and local governments, Government Code Section 65580 states the intent of creating housing elements:

The availability of housing is of vital statewide importance, and the early attainment of decent housing and a suitable living environment for every Californian family is a priority of the highest order.

Per state law, the Housing Element has two main purposes:

1. To provide an assessment of both current and future housing needs and constraints in meeting those needs.
2. To provide a strategy that establishes housing goals, policies, and programs

State law now requires housing elements to be updated every 8 years to reflect a community's changing housing needs, unless otherwise extended by state legislation.

While state housing law provides requirements that city staff need to be aware of and implement, the housing law does not have requirements or regulations that specifically apply to the proposed project's environmental review. This information is provided as background information.

Local

The section below provides a summary of regional and city plans, ordinances, regulations, and policies applicable to the proposed project. Where provisions are required by law or ordinance (e.g., the Carlsbad Municipal Code, or the CMC) it is presumed that the proposed project would adhere to the requirements. Where planning documents or policies that are not enforceable by ordinance are summarized (i.e., they are not specific regulatory requirements) more detail and consistency of the project with the policies of the planning document are addressed in Section 4.10, *Land Use and Planning*.

San Diego Association of Governments

The project site is located within the jurisdiction of SANDAG, a Joint Powers Agency established under California Government Code Section 6502 et seq.

On October 9, 2015, SANDAG adopted San Diego Forward: The Regional Plan. This plan combines the Regional Comprehensive Plan (RCP) with the 2050 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) (RTP/SCS), which was adopted in 2012. The Regional Plan identifies the five following strategies to move the San Diego region toward sustainability (SANDAG, 2015):

- Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.

- Protect the environment and help ensure the success of smart growth land use policies by preserving sensitive habitat, open space, cultural resources, and farmland.
- Invest in a transportation network that gives people transportation choices and reduces greenhouse gas emissions.
- Address the housing needs of all economic segments of the population.
- Implement the Regional Plan through incentives and collaboration.

Additional information on the Regional Plan is contained in Section 4.10, Land Use and Planning, including a specific consistency determination analysis with specific sustainable strategies, which is provided in **Table 4.10-1**, *SANDAG Regional Plan Consistency Determination Summary*.

City of Carlsbad General Plan Housing Element

The Housing Element is designed to provide the city with a coordinated and comprehensive strategy for promoting the production of safe, decent, and affordable housing within the community. The Housing Element serves as an integrated part of the General Plan, but is updated more frequently to ensure its relevancy and accuracy.

In 2017, the city adopted an update to its Housing Element to address housing needs for the 2013-2021 housing planning period (2017 Housing Element Update). The 2017 Housing Element Update identifies strategies and programs that focus on:

1. Conserving and improving existing affordable housing
2. Maximizing housing opportunities throughout the community
3. Assisting in the provision of affordable housing
4. Removing governmental and other constraints to housing investment
5. Promoting fair and equal housing opportunities

The County's RHNA allocation is 161,980 new housing units for an 11-year period between January 1, 2010 and December 31, 2020. The city's share of the RHNA is 4,999 units, which is about 3% of the overall regional housing need. (City of Carlsbad, 2017b).

Additional information on the General Plan is contained in Section 4.10, Land Use and Planning, including a specific consistency determination analysis with specific goals and policies, which is provided in **Table 4.10-2**, *General Plan Consistency Determination Summary*.

Growth Management Plan

Chapter 21.90 of the CMC enacts the city's GMP, which guides balanced growth and development within the city by ensuring adequate housing, utilities, and public services and facilities. The city's GMP establishes citywide, quadrant, and previously mentioned LFMP Zone performance standards for eleven public facilities to ensure that adequate public facilities and services are guaranteed at all times as growth occurs. The city's GMP quadrants are the northwest, northeast, southwest, and southeast. The quadrants are further broken down into

separate LFMPs. Specifically, the city is organized into 25 zones with LFMPs for each zone, which analyze and establish a plan for supplying the public facilities that will be needed to accommodate development (City of Carlsbad, 2019).

The GMP requires that the appropriate public facilities must be available in conformance with the adopted performance standards in an area when new development occurs. The LFMP, described below, is one component of the city’s three-tiered or phased planning process to ensure compliance with the GMP throughout the development process. Because the GMP is implemented through the CMC, implementation would be required and enforced by city staff as the proposed project moves through the development review process.

Growth Management Plan/Zone 5 Local Facilities Management Plan

The Growth Management Chapter of the City Zoning Ordinance is generally intended to provide a balanced community, ensure that development is consistent with the General Plan, and prevent growth unless adequate public facilities and improvements are provided in a phased and logical fashion. Pursuant to the city’s GMP and Chapter 21.90 of the CMC, the city is organized into 25 zones. The GMP requires the preparation of LFMPs for the 25 different management zones within the city. The LFMPs implement the provisions of the city’s GMP by phasing all development and public facility needs in accordance with the adopted GMP performance standards. The public facilities include city administration, library, wastewater treatment, parks, drainage, circulation, fire, open space, schools, sewer collection, and water distribution. Individual projects must comply with the provisions of the LFMP in which they are located, as well as implement the provisions of the citywide plan.

As shown in Figure 4.10-1, *Local Facility Management Zones* of Section 4.10, *Land Use and Planning*, the project site is located in the southwest quadrant within LFMP Zone 5 of the city’s GMP which covers a portion of the city for several miles around the McClellan-Palomar Airport (e.g., from roughly El Camino Real in the north to Camino Vida Roble in the south, and from Melrose Drive in the east to Paseo Del Norte in the west) (City of Carlsbad, 2019). According to the 2017 Housing Element Update of the General Plan and as provided in **Table 4.12-4, Analysis of Identified Sites Compared to Quadrant Dwelling Unit Limits**, the quadrant cap for the southwest quadrant is 12,859 units with 10,158 existing units. As shown in Table 4.12-4, there are 1,232 remaining future units within the southwest quadrant.

**TABLE 4.12-4
 ANALYSIS OF IDENTIFIED SITES COMPARED TO QUADRANT DWELLING UNIT LIMITS**

Quadrant	Existing Units	General Plan Capacity	Quadrant Dwelling Unit Limit	Remaining Future Units
Northwest	12,431	15,113	15,370	688
Northeast	6,971	8,939	9,042	102
Southwest	10,158	11,109	12,859	1,232
Southeast	16,367	16,667	17,328	318

SOURCE: City of Carlsbad, 2017a; City of Carlsbad, 2019

Because the GMP and LFMZs are implemented through the CMC, implementation would be required and enforced by city staff as the proposed project moves through the development review process.

City Council Policy 43

City Council Policy 43 is the established policy for the number and allocation of Proposition E (Growth Management) “excess” dwelling units. Policy 43 establishes the city’s policy regarding the number and the criteria for allocation of “excess” dwelling units which have become available as a result of residential projects being approved and constructed with less dwelling units than would have been allowed by the density control points of the GMP as approved by the voters on November 4, 1986, as Proposition E.

Under city policy, “excess” dwelling units may be allocated to projects located in any quadrant of the city as long as the number of residential units constructed in each quadrant does not violate the dwelling unit limitations established by Proposition E.

The number of excess dwelling units allocated shall be at the sole discretion of the decision-maker designated by the CMC. The City Council, Planning Commission, or the City Planner retains the discretion to deny approval of a proposed project or approve a proposed project without any excess dwelling units. In approving a request for an allocation of excess dwelling units, the City Council, Planning Commission, or City Planner shall make the following applicable findings:

1. That the project location and density are compatible with existing adjacent residential neighborhoods and/or nearby existing or planned uses.
2. That the project location and density are in accordance with the applicable provisions of the General Plan and any other applicable planning document.
3. That the project complies with the findings stated in the General Plan Land Use Element for projects that exceed the growth management control point for the applicable density range. (This finding applies only to properties outside the Village Review Zone.)

City Council Policy No. 43 identifies that an allocation of excess dwelling units is an “incentive”, as defined by CMC Section 21.86.020.A.12 and Government Code Section 65915(k), in that it is a regulatory concession that modifies the requirements of CMC Chapter 21.90 by permitting development with more dwelling units than otherwise permitted by the growth management control point established in CMC Chapter 21.90.

Planning Commission Resolution No. 7114 requires projects on identified properties (including the project site) requesting units from the Excess Dwelling Unit Bank, to provide a minimum of 20% of the total housing units on the site as affordable to lower-income households. Table A of Planning Commission Resolution No. 7114 allocates 224 units from the city’s Excess Dwelling Unit Bank to the project site. As described in Chapter 3, *Project Description*, of this EIR, the proposed project would develop a total of 329 residential units at the project site, which would exceed the General Plan allocation of 224 units and would require 105 additional units to be transferred from the city’s Excess Dwelling Unit Bank.

Carlsbad Municipal Code, Title 21 (21.53.120) Affordable Housing Multi-Family Residential Projects, Site Development Plan Required

Section 21.53.120 of the CMC states that development (both for multi-family residential and affordable housing) shall be subject to the development standards of the zone in which the development is located and/or any applicable specific or master plan, except for affordable housing projects as expressly modified by a Site Development Plan (SDP). Any modifications to the development standards must be shown on a modified SDP.

The city is able to provide offsets to developers that provide affordable housing in excess of the requirements of CMC Chapter 21.85 through a SDP. These offsets, referred to as development standards modifications (standards modifications), are outlined in CMC Section 21.53.120(B), and may allow less restrictive development standards than specified in the underlying zone or elsewhere. Projects must be in conformity with the General Plan and adopted policies and goals of the city, must have no detrimental effect on public health, safety and welfare, and, in the coastal zone, the project shall be consistent with the LCP, with the exception of density.

In addition, the decision-making authority may impose special conditions or requirements which are more restrictive than the development standards in the underlying zone or elsewhere that include provisions for, but are not limited to, the following:

- Density of use
- Compatibility with surrounding properties and land uses
- Parking standards
- Setbacks, yards, active and passive open space required as part of the entitlement process, and on-site recreational facilities
- Height and bulk of buildings
- Fences and walls
- Signs
- Additional landscaping
- Grading, slopes, and drainage
- Time period within which the project or any phases of the project shall be completed;
- Points of ingress and egress
- Such other conditions as deemed necessary to ensure conformity with the General Plan and other adopted policies, goals or objectives of the city

In addition, the decision-making authority may require that the developer provide public improvements either on or off the subject site as are needed to serve the proposed development or to mitigate public facilities needs or impacts created by the project.

Inclusionary Housing Ordinance (CMC, Title 21, Chapter 21.85)

The city adopted an Inclusionary Housing Ordinance to ensure that all residential development, including residential subdivisions, provide a range of housing opportunities for all economic segments of the population. The Inclusionary Housing Ordinance requires the following, as applicable to the proposed project:

- A minimum of 15% of all approved residential development be restricted to, and affordable to, lower-income households, subject to adjustment based on the granting of an inclusionary credit.
- That for those developments which provide 10 or more units affordable to lower-income households, at least 10% of the lower-income units shall have three or more bedrooms.

Per CMC Section 21.85.030, a project is required to provide 15% of the total units as affordable units. Per CMC Section 21.85.100, the city is able to provide offsets to developers that provide affordable housing in excess of the requirements of CMC Chapter 21.85. Offsets to developers could include a density increase or other development standards modifications (standards modifications), pursuant to a SDP, per CMC Section 21.53.120.

Planning Commission Resolution No. 7114 was adopted by the Planning Commission on July 24, 2015. Planning Commission Resolution No. 7114 identified several sites throughout the city, including the project site, and recommended them for a General Plan designation change to a designation allowing for a greater density at the sites. As established in City Council Policy 43, any proposed residential density increases would require an allocation of units from the city's Excess Dwelling Unit Bank and is considered an incentive. In exchange for making this incentive available, the City Council resolved that it is required for any applicant proposing residential development at these sites to enter into an affordable housing agreement with the city to provide a minimum of 20% of the total housing units as affordable units. As such, per Planning Commission Resolution No. 7114, the project site requires a minimum of 20% of the total units as affordable units.

4.12.3 Thresholds and Methodology

Thresholds

As defined in Appendix G of the CEQA Guidelines, project impacts with regard to population and housing would be considered significant if the proposed project was determined to:

- Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

Methodology

Impacts related to population growth were evaluated by identifying the existing population in the city and determining if implementation of the proposed project would substantially induce

unplanned population growth directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure) as well as displace substantial numbers of existing people or housing. However, since the project site does not currently contain housing nor persons residing on-site, this analysis does not evaluate potential displacement of people or housing based on increasing the existing residential units within the city.

4.12.4 Project Impact Analysis

Impact 4.12-1: Would the proposed project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

As described above under Existing Conditions, there are a number of local policies aimed at controlling population growth in the City of Carlsbad. The following discussion is focused on the project's compliance with the applicable policies, including whether or not the project would directly or indirectly induce unplanned population growth.

The project site is designated by the General Plan as R-30, Residential (with a density range of 23–30 du/ac), which accommodates higher-density residential land uses (City of Carlsbad, 2017a). Based on the project site's General Plan designation of R-30, and the project site's size of approximately 9.5 acres, the project site would, in theory, be permitted to build 285 units. However, Table A of Planning Commission Resolution No. 7114 only allocates 224 units from the Excess Dwelling Unit Bank to the project site. The applicant is proposed to develop 329 residential units and associated parking, amenities and open space, resulting in a residential density of 40 du/ac. This would be consistent with the type of uses permitted by the R-30 designation, but would exceed the permitted maximum density of 30 du/ac and would exceed the units allocated from the Excess Dwelling Unit Bank to the site. As proposed, the project would implement two residential apartment buildings on separate parcels totaling 9.5-acres that would include 329 apartment units; the West Parcel would contain 247 market-rate and 12 affordable rental units and the East Parcel would contain 70 affordable rental units.

Because the applicant is proposing 25% for affordable housing units, CMC Section 21.53.120 provides for less restrictive development standards than the underlying zoning for affordable housing projects, including a density increase. With submittal of the required SDP and Affordable Housing Agreement to the city for review and approval, and with approval by the city for the requested density increase, the proposed project would be consistent with the population growth projections for the area.

According to the Fiscal Year 2017-2018 Growth Management Plan Monitoring Report for the City of Carlsbad, the estimated persons per household standard is 2.36 persons (City of Carlsbad 2018, page 6), resulting in an estimated population increase of 776 attributable to the proposed project. Additionally, the proposed project is within LFMP Zone 5, which, as shown in Table 4.12-4, *Analysis of Identified Sites Compared to Quadrant Dwelling Unit Limits*, above, there are 1,232 future units remaining in the Excess Dwelling Unit Bank for the southwest quadrant of the city. As such, as part of its approvals, the proposed project would request

allocation of 105 units from the city's Excess Dwelling Units Bank, beyond the initially-allocated 224 units.

According to the General Plan, residential projects must meet specific city criteria to be eligible for "excess dwelling units." Such criteria include development of affordable housing (in addition to that required by the Inclusionary Housing Ordinance). The proposed project would exceed with the city's Inclusionary Housing Ordinance requirements of 15% inclusionary housing by providing 82 affordable housing units (or 33 units more than the 49 affordable units minimally required by the Inclusionary Housing Ordinance). The proposed project would also provide a range of housing opportunities for all identifiable economic segments of the population, including households of lower and moderate income. The West Parcel's 12 affordable units would be one-bedroom units set aside for residents with incomes that do not exceed 90% of the Area Median Income (AMI). From the 70 affordable rental units located on the East Parcel, seven units would be set aside for residents with incomes that do not exceed 30% of the AMI, 62 units would be reserved for residents with incomes that do not exceed 60% of the AMI, and one unit would be the manager's unit.

City Council Policy 43, notes that if a project is allocated units from the Excess Dwelling Unit Bank, the allocation is considered an incentive. In September 2015, the City Council approved the General Plan update, Planning Commission Resolution No. 7114, which requires projects on identified properties (including the project site), to provide a minimum of 20% of the total housing units on the site as affordable to lower-income households. Therefore, the proposed project is required to provide 20% of the total units as affordable units. The proposed project would include 82 affordable housing units for individuals and families that meet the income requirements, which would total 25% of the total units as affordable units.

Thus, although the proposed project is generally consistent with the General Plan and Zoning for the site, which without the standards modifications, would allow for a maximum residential density of 30 du/ac, the proposed project is requesting 40 du/ac. The proposed project is requesting an increase in density to 40 du/ac and an increase of 105 dwelling units from the 224 units initially allocated to the site. The LFMP for Zone 5, released in 1987, envisioned a population of approximately 8,090 persons. The proposed project is proposing units that would house approximately 776 people or 9.6% of total projected population in the southwest quadrant of the city. The unplanned population growth associated with the project would produce a slightly higher increase in population than what was originally envisioned within LFMP Zone 5. With the approval of the increased density request and proposed project through the participation in the Excess Dwelling Unit Bank, the proposed project would conform to planned growth that is anticipated by the General Plan and result in compliance with state and local housing regulations, LFMP and Affordable Housing Agreement request. Therefore, direct population impacts would be **less than significant**.

The proposed project would also have the potential to induce indirect population through extension of roads or other infrastructure. However, the proposed project's roads would be within the West and East Parcels and, therefore, would not extend new public roads to areas that are currently inaccessible. The proposed project would not size utilities beyond their demand for

services, as discussed in Section 4.15, Utilities and Service Systems. Additionally, the project site is proposed on land that is designated for residential development and surrounded by designated open space or developed land, according to the City of Carlsbad General Plan. Therefore, the project would not induce substantial population growth indirectly through the extension of roads or other infrastructure and impacts would be **less than significant**.

4.12.5 Level of Significance before Mitigation

Implementation of the proposed project would not result in a significant population and housing impact; therefore, no mitigation measures are proposed.

4.12.6 Environmental Mitigation Measures

No mitigation measures are proposed, as no significant impacts have been identified.

4.12.7 Level of Significance after Mitigation

No significant impacts to population/housing have been identified.

4.13 Public Services

This section summarizes the existing conditions, regulatory framework, and potential impacts to public services (city administrative facilities, library, fire, police, schools, and parks and recreation) as a result of implementation of the proposed project. The project site is located within Zone 5 of the city's Local Facilities Management Plan (LFMP) under the city's Growth Management Program. The analysis in this section is based on consideration of applicable regulations, information, and correspondence from and with several city sources, including the Zone 5 LFMP, City of Carlsbad Fire Department (CFD), Carlsbad Municipal Code (CMC), Carlsbad City Library, the City of Carlsbad Parks and Recreation Department, City of Carlsbad Police Department (CPD), and Carlsbad Unified School District (CUSD).

4.13.1 Existing Conditions

Fire Protection

The CFD currently maintains six stations throughout the city. Fire operations is the largest division within the CFD and is responsible for fire suppression, rescue, emergency medical service delivery and disaster mitigation. The CFD responds to every type of emergency, including traffic collisions, medical emergencies, and severe traumas. The CFD delivers advanced life support level care on all fire engines and ambulances, including a licensed paramedic. Total existing staff at the CFD includes 79 suppression personnel, 2 fire lifeguards, 4 prevention personnel, one emergency preparedness staff, and 4 administrative staff (CFD, 2019). Currently, more than 75% of fire suppression personnel are licensed paramedics; frequently multiple paramedics are available on-scene at emergency incidents.

The locations of the fire stations are dictated by Carlsbad's GMP, which calls for additional fire stations whenever there are more than 1,500 dwelling units outside a 5-minute road response time from an existing station. The project site is within LFMP Zone 5, which is within the 5-minute response time of Fire Station No. 4 (6885 Batiquitos Road), located approximately 1.8 miles southwest of the project site; and Fire Station 2 (1906 Arenal Road), located approximately 3.6 miles southeast of the project site (City of Carlsbad, 1987). Fire Station 2 is currently undergoing expansion to meet the current needs of the station, which was built in 1969 and was originally meant to house one full-time firefighter and yearly call volume of 250. Today, the station houses five full-time firefighters and responds to approximately 4,000 calls a year. Construction is scheduled for mid-2022 and fall 2022. Additionally, according to correspondence with Fire Chief Mile Calderwood, Fire Station 5 (2540 Orion Way) located approximately 2.4 miles northeast of the project site and Fire Station 3 (3465 Trailblazer Way) located approximately 3.3 miles of the project site are other stations that could potentially serve the project site (CFD, 2019).

According to Chapter 6, Public Safety of the Carlsbad General Plan, the project site is not located within a Very High Fire Hazard Severity Zone but it is partially located within a Moderate Threat Fire Hazard Severity Zone (City of Carlsbad, 2015a). Additional information regarding wildfire related to the project site is detailed in Section 4.16, *Wildfire*, of this EIR.

Police Protection

Police protection for city residents is provided by the CPD, which operates from the Safety Center, located on 2560 Orion Way, approximately 2.4 miles from the project site. The CPD reports crime according to the Federal Bureau of Investigation's (FBI) Uniform Crime Reporting Program, a nationwide statistical effort of law enforcement agencies reporting data on crime. According to the San Diego Association of Governments (SANDAG), the city had a FBI Index Crime Total of 2,456 in 2017, which represents approximately 3.6% of all FBI index crimes reported in 2017 in the San Diego region (SANDAG, 2018). The CPD employs 171 full-time personnel. Part-time positions are limited and add up to an equivalent of 2.8 full-time employees (City of Carlsbad, 2019a). Of the 171 authorized full-time positions, 119 are sworn officers (approximately 1 officer per 922 residents) and 52 are civilian (CPD, 2018).

The patrol division provides the fundamental base for the CPD's law enforcement services. Responding to more than 90,000 calls for service annually, the patrol division serves the community and meets crime face-to-face in a wide range of situations 24 hours a day, 365 days a year. Although street patrols are the majority of the division's activity, other special details and services include canine units, bicycle patrol, crisis negotiations, bilingual services, tactical response team (SWAT; Special Weapons and Tactics) and mental health assistance teams (City of Carlsbad, 2015a).

Police service is based upon actual workload measures including response times, travel times, type of service, number of calls for service, and the time of day that calls are received. As of May 2019, the year-to-date average response time in the city was 5.82 minutes (CPD, 2019). The 2017 yearly average response time was 5.72 minutes (CPD, 2019).

Schools

LFMP Zone 5, which includes the project site, is located entirely within the CUSD. CUSD school fees are determined based on the square footage of all new construction and additions on residential and commercial property falling within the CUSD boundaries (CUSD, 2018). At the time the LFMP was drafted in 1987, the zone was comprised primarily of industrial and commercial uses and a school generation factor for non-residential uses was non-quantifiable; thus non-residential development was required to pay a school fee of \$0.25 per square foot of building area (City of Carlsbad, 1987). Additionally, the CUSD has developer fees, which are set by the State Allocation Board every 2 years, for residential and or commercial/industrial construction (CUSD, 2018). The residential fee for the proposed project would be collected by the CUSD at the time of issuance of building permits, which would be applied for after January 1, 2020, and would offset the costs of expanding its facilities related to population growth within the CUSD.

The CUSD is currently composed of nine elementary schools, three middle schools, two alternative schools, and two high schools, and accommodates more than 10,000 students (City of Carlsbad, 2014). Students that reside in Zone 5 attend the following schools: Pacific Rim Elementary, Aviara Oaks Elementary School, Aviara Oaks Middle School, Sage Creek High School, or Carlsbad High School. Correspondence from Christopher L. Wright, Assistant

Superintendent of Business Services of the CUSD has indicated that the following schools would serve the project:

- Aviara Oaks Elementary, located at 6900 Ambrosia Lane, approximately 1.85 miles southeast from the project site.
- Aviara Oaks Middle, located at 6880 Ambrosia Lane, approximately 1.93 miles southeast from the project site.
- Carlsbad High, located at 3557 Monroe Street, approximately 3.20 miles northwest from the project site.
- Sage Creek High, located at 3900 Cannon Road, approximately 2.55 miles northeast from the project site.

Enrollment and capacities for each of these schools is shown in **Table 4.13-1, Current and Projected Enrollment for Schools Serving the Project Site**. CUSD has indicated that per their facility master plan, both the Aviara Oaks Elementary and Middle schools will be modernized, Carlsbad High will undergo partial modernization, and improvements are expected to be made at Sage Creek High School as the district continues to watch enrollment trends and will expand any school to meet enrollment demands. (CUSD, 2019)

**TABLE 4.13-1
 CURRENT AND PROJECTED ENROLLMENT FOR SCHOOLS SERVING THE PROJECT SITE**

	Reported 2017-18	Projected 2018-19	2018 Capacity	Existing Capacity	Projected 2028 Enrollment
Aviara Oaks Elementary	672	678	810	132	670
Aviara Oaks Middle	1050	1069	1053	-16	1086
Carlsbad High	2313	2335	2313	-22	2430
Sage Creek High	1321	1357	1446	89	1431

SOURCE: Carlsbad Unified School District (CUSD), 2019.

Parks and Recreation

The city’s performance standard for park facilities requires that 3 acres of community park or Special Use Area per 1,000 residents within the Park District must be scheduled for construction¹ within a 5-year period beginning at the time the need is first identified (i.e., no earlier than August 22, 2017) (City of Carlsbad, 2015b). There are four park districts which correspond to the four quadrants of the city. As previously mentioned, the project site is located in the southwest quadrant of the city, which also corresponds with Park District 3. There are two existing community parks (Aviara Community Park and Poinsettia Community) and one special-use area (Aviara Oaks School Field) within Park District 3. The closest park to the proposed project is

¹ According to City Council Resolution No. 97-435, “scheduled for construction” means that the improvements have been designed, a park site has been selected, and a financing plan for construction of the facility has been approved.

Poinsettia Community Park, which is approximately 0.9 miles southwest from the proposed project.

Across the city, the combined park acreage required by the GMP performance standards is 330.9 acres, and 335.6 acres of park are existing (City of Carlsbad, 2018). However, as reported in the 2017-18 GMP Monitoring Report, all quadrants except the northwest quadrant do not meet the quadrant-level performance standard requirements. Although short of the acreage required, these quadrants are not yet out of compliance with the performance standard because the 5-year period after the identification of needs has not been reached. Upon buildout of the General Plan, 394.6 acres of parks would be required. Taking into account the 2017-18 Capital Improvements Projects list, the projected inventory of parkland within the city would be 427.2 acres, and each quadrant would exceed their respective requirements (City of Carlsbad, 2018).

Library Facilities

The city currently owns or leases library facilities in three locations: Carlsbad City Library (1775 Dove Lane), Georgina Cole Library (1250 Carlsbad Village Drive), and the Carlsbad City Learning Center (3368 Eureka Place) (City of Carlsbad, 2014). In addition to its diverse collection of resource materials, the municipal library system offers services and programs for all ages. It also houses the William D. Cannon Art Gallery, the Ruby G. Schulman Auditorium, and the George and Patricia Gowland Meeting Room (City of Carlsbad, 2014). According to the Fiscal Year (FY) 2017-2018 GMP Monitoring Report, the current inventory consists of 99,993 square feet of library facilities. The library performance standard requires 800 square feet of library space per 1,000 residents to be scheduled for construction within a 5-year period beginning at the time the need is first identified (City of Carlsbad, 2018). Based on the June 30, 2018, population estimate of 110,306, the growth management standard requires 88,245 square feet of public library space. The city's current 99,993 square feet of library facilities exceeds this growth management standard (City of Carlsbad, 2018).

4.13.2 Regulatory Setting

State

The following state regulations provide an overall context for the consideration of site-specific issues at the project site. When provisions are requirements (e.g., law, code, regulation, or ordinance), it is assumed these regulatory requirements would be adhered to with project implementation, both as they apply to development of the proposed project and related project activities.

California Fire Code and California Building Code

These codes prescribe performance characteristics and materials to be used to achieve acceptable levels of fire protection. Development of structures within the project site would be required to adhere to the California Fire Code (CFC) and California Building Code (CBC), as adopted and amended by the city. California Fire and Building codes applicable to the proposed project are listed in Section 4.16, *Wildfire*, of this EIR.

School Facilities Act (Senate Bill 50, Stats. 1998, c.407)

In 1998, the state legislature adopted Senate Bill (SB) 50, the historic school facility financing and reform legislation, which became operative with the passage of Proposition 1A by the state electorate on November 3, 1998. SB 50 provides limitations on development fee exactions for school mitigation purposes. SB 50 substantially revamped the method of providing state monies for school construction by establishing a system by which the state would provide 50% of the cost of new school facilities from school bond proceeds with school districts providing the other 50% matching share from development fees and other local funding sources such as local school bonds. SB 50 establishes tiers or levels of development fees that can be imposed upon new development. School districts must meet a list of specific criteria, including the completion and annual update of a School Facility Needs Analysis, in order to be legally able to impose additional fees. The CUSD is qualified to impose development impact fees per square foot of new residential, commercial, and/or industrial development (CUSD, 2018). The proposed project would be required to adhere to SB 50 through the payment of school fees with the final amount to be determined at the time of building permit issuance or through annexation into the community facilities district.

SB 50 specifically provides that it is the exclusive method for financing school facilities and mitigating environmental effects related to the adequacy of school facilities. Compliance with SB 50 is thus full and complete mitigation for impacts to school facilities.

Quimby Act

The 1975 Quimby Act (California Government Code Section 66477) authorized cities and counties to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. Under the Quimby Act, fees must be paid and land conveyed directly to the local public agencies that provide park and recreation services community-wide; however, revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities. The act states that the dedication requirement of parkland can be a minimum of 3 acres per thousand residents or more, and equal to the existing parkland provision (up to 5 acres per thousand residents) if the existing ratio is greater than the minimum standard. In 1982, the act was substantially amended. The amendments: (1) defined acceptable uses of, or restrictions on, Quimby funds; (2) provided acreage/population standards and formulas for determining the exaction; and (3) indicated that the exactions must show a reasonable relationship to a project's impacts as identified through studies required by CEQA.

Local

The section below provides a summary of the city's ordinances, regulations, and policies that are related to the provision of public services and are applicable to the proposed project. Where provisions are required by code or ordinance (e.g., the CMC) it is presumed that the proposed project would adhere to the requirements. Consistency of the project with applicable goals and policies of the City of Carlsbad General Plan is addressed in Section 4.10, *Land Use and Planning*, specifically in **Table 4.10-2, General Plan Consistency Determination Summary**.

City of Carlsbad Growth Management Plan/Citywide Facilities and Improvements Plan

The Citywide Facilities and Improvements Plan (CFIP) is the first phase of implementation of the city's GMP (1986, with amendments through 1997). The CFIP seeks to ensure that development does not occur unless adequate public facilities are in place to serve that development. As part of the overall GMP, the city was divided into 25 Local Facilities Management Plan Zones (the project site is located within LFMP Zone 5), each of which has its own LFMP, consistent with all aspects of the CFIP. Together, these plans ensure that adopted performance standards for each type of facility are met prior to new development.

The CFIP specifies performance standards for 11 facilities, including parks, schools, libraries, fire services, and city administrative services which are evaluated in this section. The performance standards for parks, schools, libraries, fire services, and city administrative facilities are as follows:

- City Administrative Facilities: 1,500 square feet per 1,000 population must be scheduled for construction within a 5-year period or prior to construction of 6,520 dwelling units, beginning at the time the need is first identified.
- Library: 800 square per 1,000 population must be scheduled for construction within a 5-year period or prior to construction of 6,250 dwelling units, beginning at the time the need is first identified.
- Fire: No more than 1,500 dwelling units outside of a 5-minute response time.
- Schools: School capacity to meet projected enrollment within the zone as determined by the appropriate school district must be provided prior to projected occupancy.
- Parks: Three acres of community park or special use area per 1,000 population within the park district (quadrant) must be scheduled for construction within a 5-year period or prior to construction of 1,562 dwelling units within the park district, beginning at the time the need is first identified.

Local Facilities Management Plan Zone 5

The purpose of the LFMP is to provide a plan and financing structure to ensure that utilities and service systems are provided to accommodate development within Zone 5. The LFMP Zone 5 is located in the center of Carlsbad at the intersection of the city's four quadrants which are bounded by Interstate 5 (I-5) on the west, the city's eastern boundary to the east, and bisected east to west by Palomar Airport Road and north to south by El Camino Real (Carlsbad, 1987). The LFMP is prepared as a requirement of the city's adopted GMP, and in accordance with Chapter 21.90, Growth Management, of the CMC and Citywide Facilities and Improvements Plan of 1986. The LFMP provides a phasing schedule to determine approximate threshold years for construction or upgrading various public facilities to maintain compliance with the performance standards adopted in the Growth Management Program.

The city monitors development within the zone to ensure Growth Management Standards are maintained. The LFMP also contains general and special conditions of approval to ensure compliance with the performance standards. Public facilities addressed in this section and as

required by the city's GMP include fire, schools, libraries, and parks. Overall, the performance standards related to these public service systems are currently being met (City of Carlsbad, 2018).

Fire Prevention Code 17.04 (Carlsbad Municipal Code, Title 17)

The CMC is a collection of city laws or ordinances that have been adopted by the City Council over time. The CMC is periodically amended to remain consistent with state and federal laws, City Council policy direction and community standards. Fire related codes are listed under CMC Chapter 17.04, Fire Prevention Code. The applicable code establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations. This code incorporates by reference the CFC, which is developed and updated every 3 years by the California Building Standards Commission. The city adopted the 2016 CFC for topics such as, but not limited to, emergency planning and preparedness, building services and systems, egress, fire and smoke protection features, interior finish, fire safety during construction and demolition, and combustible fibers. City-adopted CFC provisions applicable to the proposed project are discussed in detail in Section 4.16, *Wildfire*, of this EIR.

Zoning Ordinance (Carlsbad Municipal Code, Title 21)

The Zoning Ordinance implements the General Plan by regulating the distribution and intensity of land uses, including public facilities. Regulations establish standards for minimum lot size, building height and setback limits, fence heights, parking, and other development parameters within each land use. In the event of an inconsistency between the Zoning Ordinance and the General Plan, the General Plan shall prevail. Additionally, the Zoning Ordinance contains provisions for parkland dedication or in-lieu fees to meet growth management parkland standards.

Open Space Management Plan

As a framework plan to assist in the implementation of the Multiple Habitat Conservation Program (MHCP) and the Habitat Management Plan (HMP), the city's Open Space Management Plan (OSMP) establishes procedures, standards, guidelines and conditions for long-term conservation and management of sensitive species and habitat. There are three additional categories of open space land in the OSMP that are dedicated as non-preserve uses in the HMP or MHCP; one of which is parks. The OSMP Developed Parks category includes existing parks as well as parks to be developed in the future. Some of the parks under this category are not strictly "open space" in the natural sense, but are developed facilities, such as a skate park, that are used for outdoor recreational purposes. Developed parks have been incorporated into the city's geographic information system (GIS) inventory so that citywide management can be scheduled, tracked and analyzed in this database.

City of Carlsbad General Plan

The city's General Plan contains goals and policies that address public services in the city. Specifically, policies in the Land Use and Community Design Element are applicable as summarized below. **Table 4.10-2, General Plan Consistency Determination Summary** (provided

in Section 4.10.4, *Project Impact Analysis* of the Land Use and Planning section) provides a summary of the applicable General Plan goals and policies, including those for public services, and a project consistency discussion for each. The specific goals and policies listed in this section are addressed in the Table 4.10-2 consistency analysis. As indicated therein, the proposed project would be consistent the applicable public services goals and policies of the General Plan.

Goals

Community Character, Design, and Connectedness

2-G.21 Ensure that adequate public facilities and services are provided in a timely manner to preserve the quality of life of residents.

Policies

Growth Management and Public Facilities

2-P.58 Require compliance with Growth Management Plan public facility performance standards, as specified in the Citywide Facilities and Improvements Plan, to ensure that adequate public facilities are provided prior to or concurrent with development.

4.13.3 Thresholds and Methodology

Thresholds

A significant impact would occur to public services if the proposed project would:

- 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 following public services:
 - Fire protection
 - Police protection
 - Schools
 - Parks
 - Other public facilities

A significant impact would occur to recreational resources if the proposed project would:

- 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.
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Methodology

The following evaluation of potential impacts is based on consideration of applicable regulations and correspondence and information from CFD, CMC, Carlsbad City Library, the City of Carlsbad Parks and Recreation Department, CPD, and CUSD. The evaluation of impacts is based

on an assessment of the changes in land uses that would occur on the project site and how the proposed project would affect current levels of public service, including applicable service goals and LFMP Zone 5 standards. The determination of impact significance is focused on whether new or expanded governmental facilities would be required to maintain adequate levels of service and whether construction of such facilities would result in significant impacts on the physical environment.

4.13.4 Project Impact Analysis

Impact 4.13-1: Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered fire service facilities, need for new or physically altered fire service facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection?

The proposed project would result in a net increase in population at the project site (an increase of approximately 776 people), including introducing a resident population that would increase the demand on existing fire service facilities. The proposed project would comply with city fire code requirements and be developed to ensure proper emergency access. Also, the proposed project would provide fire hydrants and supporting water infrastructure in accordance with fire marshal requirements. The CFD requires a minimum flow of water for fire protection in accordance with the applicable CFC provisions. The required fire-flow standard for commercial, industrial, manufacturing and large apartment buildings varies from 1,500 to 8,000 gallons per minute, in addition to the peak normal daily consumption needs. Water systems within the project site would be designed to meet this demand and flow. The development of the proposed project would be required to comply with all applicable CFC and city standards for construction, access, egress, water mains, fire flow, and fire hydrants.

As discussed in detail in Section 4.16, *Wildfire*, the project site is not located in a Very High Fire Hazard Severity Zone but it is located in a Moderate Fire Hazard Severity Zone as designated by the city. A Fuel Modification Plan has been prepared for the proposed project to demonstrate how the proposed project would conform to the policies and requirements for fuel modification as outlined in the Landscape Manual, particularly the Fire Policies and Fire Protection Requirements. Conformance with the recommendations in the Fuel Modification Plan would reduce the risk of wildland fire, as described in Section 4.16, *Wildfire*, of this EIR.

According to the LFMP, the number of dwelling units outside a 5-minute response time from the nearest fire station shall not exceed 1,500 units. In 2018, the GMP Monitoring Report states that the city's fire facilities are in compliance with the growth management performance standard. The GMP Monitoring Report showed that for Fire Stations 1, 3, and 4, the total, combined number of dwelling units outside of 5 minutes totaled to 1,227 units, 392 dwelling units for Fire Station 5, and there are 902 dwelling units located more than 5 minutes from Fire Station 2 (City of Carlsbad, 2018).

As previously discussed, the project site is within LMFP Zone 5, which is within the 5-minute response time for Fire Station No. 4. The project site is outside of the 5-minute response time for

Fire Station No. 2, but the proposed project includes 329 units and the addition of those units would not cause the stations to exceed the 1,500 unit threshold. Additionally, the CFD indicated that the department would be able to maintain service levels and that no new facilities would be necessary in order to provide services to the project and are currently in the process of altering two existing fire station to provide for flexibility in deployment models and meet increasing demands for calls (CFD, 2019).

The proposed project would not require the provision of new or physically altered fire facilities and there would be a **less than significant impact**.

Impact 4.13-2: Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities, 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 for police protection?

The proposed project would result in a net increase in population at the project site, including introducing a resident population that would increase the demand on existing police service facilities. Carlsbad has adopted a standard of a maximum 6-minute response time for police service on priority-one emergency calls. As noted above, the 2019 response time is 5.82 minutes for a priority call (CPD, 2019). Police service is based upon actual workload measures including response times, travel times, type of service, number of calls for service, and the time of day that calls are received. The number of additional service calls and call response times could increase; however, CPD has indicated that the anticipated response times to the proposed project would fit within the average response time parameters and no new police facilities would be required as a result of the proposed project (CPD, 2019).

Development resulting from the implementation of the proposed project would be required to pay into the city's Development Related Service Fees per the city's Master Fee Schedule Fiscal Year 2018-2019 (City of Carlsbad, 2019b). The proposed project would be conditioned to pay impact fees in the amount applicable at the time of issuance of the building permit to offset impacts to police facilities and services resulting from the need to service the proposed project.

The proposed project would not require the provision of new or physically altered existing police services facilities in order to maintain acceptable service ratios, response times, or other performance objectives; therefore, the impact would be **less than significant**.

Impact 4.13-3: Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for schools?

The proposed project would result in a net increase in population at the project site, including introducing a resident population that would increase the demand on existing school facilities. For the purposes of long-range planning, CUSD considers all existing school sites and facilities to be operating at capacity. The proposed project would increase demand on local school sites and

facilities due to the increase in school-age children produced by the 329 residential units. School enrollment projections and projects proposed by the district's facility planning division will be periodically updated by the school district, allowing future capacity analysis to be performed to verify that projected enrollment can be accommodated. According to both the district's Long Range Facility Master Plan (approved January 17, 2018) and CUSD staff, the district can accommodate both the current enrollment levels and expected future growth (City of Carlsbad, 2018). The master plan indicates that the district has plans for accommodating projected student enrollment levels through the next 15–20 years, which includes proposals for renovating and replacing a variety of school facilities.

According to correspondence with CSUD, the project would be served by Aviara Oaks Elementary and Middle schools, Carlsbad High School, and Sage Creek High School (CUSD, 2019). The generation factor for elementary, middle, and high school students for multi-family units is 0.26 students per unit (CUSD, 2019). Therefore, the proposed project's 329 units would generate 86 elementary, middle, and high school students. According to Table 3.12-1, *Current and Projected Enrollment for Schools Serving Project Site*, Aviara Oaks Elementary and Sage Creek High have capacity, whereas Aviara Oaks Middle School and Carlsbad High School are operating at capacity. CUSD has indicated the proposed project's increase in enrollment could trigger the need to add facilities for schools reaching operational capacity. Therefore, all development within the project site would be conditioned upon compliance with SB 50. The proposed project would be conditioned to pay all applicable school fees as required by CUSD in the amount applicable at the time of issuance of the building permit. Those fees are collected to assist the CUSD with funding any required facilities.

Therefore, the proposed project would not require the provision of new or physically altered existing school facilities in order to maintain acceptable service ratios; therefore, the impact would be **less than significant**.

Impact 4.13-4: Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities, need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks?

The proposed project would result in a net increase in population at the project site, including introducing a resident population that would increase the demand on existing park and recreational facilities. The city's performance standard for parks is 3 acres per 1,000 residents. According to the CFIP, parks within the identified park district must be scheduled for construction within a 5-year period, or prior to construction of additional dwelling units within the specified park district at the time the need is first identified. Prior to issuance of any building permit within Park District 3, a park in-lieu fee must be paid by the applicant in the amount applicable at the time of issuance of the building permit. The proposed project would be conditioned to pay park in-lieu fees to fund construction of public park improvements.

Therefore, with payment of the applicable park in-lieu fee at the time of building permit issuance, the proposed project would not generate an additional need for the provision of new or physically

altered existing park facilities outside of the project site in order to maintain acceptable service ratios or other performance objectives; therefore, there the impact would be **less than significant**.

Impact 4.13-5: Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities, need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for other public facilities, such as libraries?

The proposed project would result in a net increase in population at the project site, including introducing a resident population that would increase the demand on existing library facilities. The City Council created the following performance standards through adoption of the CFIP: 800 square feet of libraries per 1,000 residents must be scheduled for construction within a 5-year period or prior to construction of 6,250 dwelling units, beginning at the time the need is first identified.

As noted above, under Existing Conditions, the city currently maintains 99,993 square feet of library facilities and therefore a surplus of 12,312 square feet. According to the Fiscal Year 2017-18 GMP Monitoring Report, the projected buildout need for library facilities is 105,218 square feet (based on current population projections and performance standards). As a result, the city is expected to fall short of the growth management standard at buildout by 5,225 square feet of library facilities. However, there are plans for a complete replacement of the Cole facility, which is included in the Capital Improvement Program, which could provide for the shortfall of library facilities.

Implementation of the proposed project would require approximately 618 square feet of library facilities. As mentioned above, the city currently has a surplus of library facilities of 12,312 square feet. According to the Library Deputy Director, the proposed project would not result in the need for new or altered libraries (Bednarski, 2019). Therefore, the proposed project would not require the provision of new or physically altered existing library facilities in order to maintain acceptable service ratios or other performance objectives; therefore, the impact would be **less than significant impact**.

Impact 4.13-6: 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?

The proposed project would result in a net increase in population at the project site, including introducing a resident population that would increase the demand on existing neighborhood and regional parks and recreational facilities. As a condition of approval, the proposed project would pay the required Development Impact Fees, a portion of which would go towards maintaining existing city parks and recreation facilities. Therefore, the proposed project would not result in substantial physical deterioration of existing parks and recreation facilities, and the impact would be **less than significant**.

Impact 4.13-7: 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?

The proposed project would include private open space for the purposes of on-site resident amenities and open space for habitat preservation. As previously mentioned in Chapter 3, *Project Description*, open space and private amenities for the proposed project would encompass 37,570 square feet of the site. Common open space features of the West Parcel would include an outdoor recreation area and pool courtyard, an outdoor lounge area, two passive courtyards, an arrival yard and entry plaza. East Parcel common open space features would include an outdoor recreation area, an arrival yard, and entry plaza. Therefore, there should be no need to construct additional recreational facilities as a result of the proposed project. Impacts would be **less than significant**.

4.13.5 Level of Significance before Mitigation

Implementation of the proposed project would not result in a significant public services impact; therefore, no mitigation measures are proposed.

4.13.6 Environmental Mitigation Measures

No mitigation measures are proposed, as no significant impacts have been identified.

4.13.7 Level of Significance after Mitigation

No significant impact to public services has been identified.

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4.14 Transportation

This section provides an assessment of potential impacts related to transportation that could result from implementation of the proposed project. Potential impacts addressed in this section are related to conflicts with applicable transportation plans, policies, and programs, consistency with CEQA Guidelines Section 15064.3, subdivision (b), transportation design hazards, and emergency access. Information used in this section is from the Transportation Impact Analysis (TIA) prepared by Michael Baker International for the proposed project (MBI, 2019), which is included as Appendix J of this EIR.

4.14.1 Existing Conditions

The City of Carlsbad (city) is located along the northern coast of San Diego County, where regional access is provided primarily by Interstate 5 (I-5). Local access is provided to the proposed project via Aviara Parkway, Palomar Airport Road, and Poinsettia Lane, which are described below.

Aviara Parkway is a four-lane Arterial with a landscaped center median that generally runs in the north-south direction through the study area. The posted speed limit on Aviara Parkway is 45 miles per hour (mph) from Poinsettia Lane to Palomar Airport Road. Class II bicycle lanes (portion of roadway designated for bicyclists by striping or signage) are provided in both directions of travel through the study area. Sidewalks are provided on both sides of the street through the study area.

Palomar Airport Road is a six-lane Arterial with a landscaped center median that generally runs east-west through the study area. The posted speed limit on Palomar Airport Road is 55 mph east of Armada Drive through the study area and 45 mph west of Armada Drive. Palomar Airport Road provides direct access to I-5, connecting the project site to the regional transportation system. Class II bicycle lanes are provided in both directions of travel along Palomar Airport Road through the study area. Sidewalks along Palomar Airport Road connect the project site to the local transit network and nearby destinations.

Poinsettia Lane is a four-lane Arterial that generally runs east-west and provides direct access to I-5 connecting the project site to the regional transportation system. The posted speed limit along Poinsettia Lane is 50 mph. Sidewalks and Class II bicycle lanes are provided along both the north and south sides of Poinsettia Lane.

Study Intersections and Roadway Segments

Study intersections and roadway segments were selected for analysis based on the San Diego Traffic Engineers Council/Institute of Transportation Engineers (SANTEC/ITE) Traffic Impact Study Guidelines (2002), which state that roadway segments where 50 or more peak hour project trips would be added in either direction shall be evaluated. Based on this criterion, the following five study intersections and five roadway segments were evaluated:

Intersections:

1. Poinsettia Lane/Aviara Parkway
2. Aviara Parkway/Camino De Las Ondas
3. Aviara Parkway/Plum Tree Road
4. Aviara Parkway/Laurel Tree Lane
5. Aviara Parkway/College Boulevard/Palomar Airport Road

Roadway Segment, Aviara Parkway:

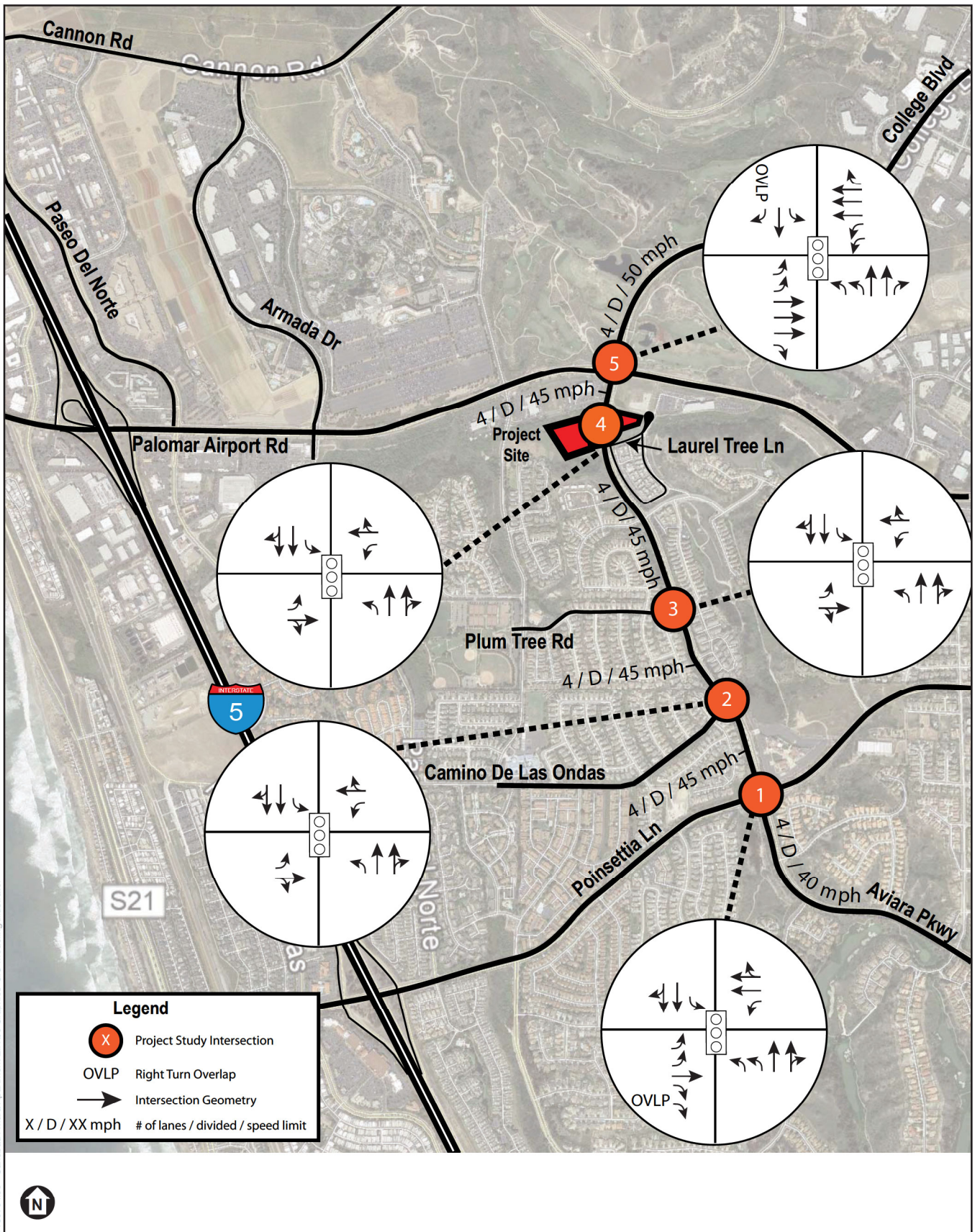
1. Aviara Parkway from Palomar Airport Road to Laurel Tree Lane
2. Aviara Parkway from Laurel Tree Lane to Cobblestone Road
3. Aviara Parkway from Cobblestone Road to Plum Tree Road
4. Aviara Parkway from Plum Tree Road to Camino De Las Ondas
5. Aviara Parkway from Camino De Las Ondas to Poinsettia Lane

Study intersections and roadway segments characteristics, including location, traffic control type, lane geometry, and speed limit, are shown in **Figure 4.14-1**, *Study Intersections and Roadway Segments*.

Existing Traffic Volumes and Intersection Level of Service

Traffic volumes at the study roadway segments and intersections were collected on April 27, 2017, for the AM peak period (7:00 a.m. to 9:00 a.m.) and PM peak period (4:00 p.m. to 6:00 p.m.). Peak hour intersection and roadway segment volumes, and traffic count worksheets are provided in Appendix J.

In compliance with the SANTEC/ITE Traffic Impact Study Guidelines (TIS Guidelines) (2002), study intersections were evaluated using the Highway Capacity Manual, 6th Edition (HCM6) Operation Methodology. **Table 4.14-1**, *Intersection Level of Service Definitions*, summarizes the Level of Service (LOS) thresholds for signalized intersections as described in the HCM6. LOS was determined at the study area intersections for the AM and PM peak hours. The AM intersection analysis evaluates the LOS during the hour with the highest vehicular traffic between 7:00 a.m. and 9:00 a.m. The PM intersection analysis evaluates the LOS during the hour with the highest vehicular traffic between 4:00 p.m. and 6:00 p.m.



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SOURCE: Michael Baker International, 2019

Avira Apartments Project

Figure 4.14-1
Study Intersections and Roadway Segments



**TABLE 4.14-1
INTERSECTION LEVEL OF SERVICE DEFINITIONS**

Level of Service	Description	Signalized Intersection Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	<10
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	>10 and <20
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	>20 and <35
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	>35 and <55
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	>55 and <80
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	>80

SOURCE: Highway Capacity Manual, 6th Edition (HCM6).

Table 4.14-2, Existing Intersection Levels of Service, presents the Existing Conditions peak hour operational analysis. As shown in the table, four of the five study intersections currently operate at LOS D or better, which is considered acceptable operating conditions per the TIS Guidelines. The exception is Intersection No. 5, Aviara Parkway-College Boulevard/Palomar Airport Road, which currently operates at LOS E. HCM6 worksheets are provided in Appendix J.

**TABLE 4.14-2
EXISTING INTERSECTION LEVELS OF SERVICE**

#	Intersection	Traffic Control	Peak Hour	Existing Conditions	
				Delay ^(a)	LOS ^(b)
1	Poinsettia Lane / Aviara Parkway	Signal	AM	25.4	C
			PM	30.9	C
2	Aviara Parkway / Camino De Las Ondas	Signal	AM	13.8	B
			PM	13.4	B
3	Aviara Parkway / Plum Tree Road	Signal	AM	10.6	B
			PM	12.4	B
4	Aviara Parkway / Laurel Tree Lane	Signal	AM	16.8	B
			PM	15.5	B
5	Aviara Parkway-College Boulevard / Palomar Airport Road	Signal	AM	77.9	E
			PM	57.6	E

NOTES:

(a) Delay is calculated based on the HCM6 Operations Methodology and is reported in seconds per vehicle.

(b) LOS is based on thresholds established in the HCM6.

SOURCE: MBI, 2019.

The study roadway segments were evaluated based on the ratio of peak hour volumes to the segment specific capacity (see Generalized Service Tables – Specific Corridors, which are provided in Appendix J). The volume-to-capacity ratio (V/C) is calculated to determine the change in V/C for each segment as a result of the proposed project. The V/C ratios are then assigned to a LOS (A through F). **Table 4.14-3, *Level of Service Thresholds for V/C Ratios***, provides the LOS thresholds based on the V/C ratio. **Table 4.14-4, *Existing Roadway Segment Levels of Service***, summarizes the results of the roadway segment analysis. As shown, all roadway segments operate at LOS D or better.

**TABLE 4.14-3
 LEVEL OF SERVICE THRESHOLDS FOR V/C RATIOS**

Level of Service	V/C Ratio
A	0.00-0.59
B	0.60-0.69
C	0.70-0.79
D	0.80-0.89
E	0.90-0.99
F	>0.99

SOURCE: Transportation Research Board Special Report 2019, Highway Capacity Manual (1994).

Pedestrian and Bicycle Facilities

As noted above, sidewalks are provided on both sides of the street on Palomar Airport Road, Poinsettia Lane and Aviara Parkway leading up to the project site. Sidewalks are also provided on most streets intersecting Aviara Parkway through the study area. A sidewalk is currently provided on Laurel Tree Lane along the south side of the street, but is lacking a sidewalk along the north side of the street, along the project site frontage. Additional detail, including ADA curb compliance and crosswalk markings/signals are provided in Appendix J for each of the key study intersections. As noted above, Class II bicycle lanes are provided along Poinsettia Lane, Aviara Parkway and Palomar Airport Road. There are currently no bicycle facilities on Laurel Tree Lane.

Transit Service

The North County Transit District (NCTD) provides Coaster Connection bus service within the study area. Bus Route 444 and 445 stops are located along Palomar Airport Road within a half-mile walking distance of the project site. There is also a Route 444 bus stop located 500 feet north of Palomar Airport Road on College Boulevard. There is no transit service provided along Aviara Parkway within the study area.

**TABLE 4.14-4
EXISTING ROADWAY SEGMENT LEVELS OF SERVICE**

Segment	Location	Direction	Class	Segment Capacity	Existing					
					AM Peak Hour			PM Peak Hour		
					Volume	V/C	LOS	Volume	V/C	LOS
	Palomar Airport Road to Laurel Tree Lane	SB	4/45/D	1,410	390	0.28	A	912	0.65	B
		NB	4/45/D	1,410	904	0.64	B	491	0.35	A
	Laurel Creek Lane to Cobblestone Road	SB	4/45/D	1,450	299	0.21	A	770	0.53	A
		NB	4/45/D	1,450	925	0.64	B	356	0.25	A
Aviara Parkway	Cobblestone Road to Plum Tree Road	SB	4/45/D	1,690	278	0.16	A	766	0.45	A
		NB	4/45/D	1,690	835	0.49	A	362	0.21	A
	Plum Tree to Camino de las Ondas	SB	4/45/D	1,720	351	0.20	A	795	0.46	A
		NB	4/45/D	1,720	827	0.48	A	427	0.25	A
	Camino de las Ondas to Poinsettia	SB	4/45/D	1,690	367	0.22	A	751	0.44	A
		NB	4/45/D	1,690	817	0.48	A	442	0.26	A

SOURCES: City of Carlsbad Segment Specific Capacities (October 2019) – See Appendix J; MBI, 2019.

4.14.2 Regulatory Setting

State

The following description of state agencies and requirements provides an overall context for the consideration of site-specific issues at the project site. When provisions are requirements (e.g., law, code, regulation, or ordinance), it is assumed these regulatory requirements would be adhered to with project implementation, both as they apply to development of the proposed project and related project activities.

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, building, operating, and maintaining California's state road system. Caltrans sets standards, policies, and strategic plans that aim to do the following: (1) provide the safest transportation system in the nation for users and workers, (2) maximize transportation system performance and accessibility, (3) efficiently deliver quality transportation projects and services, (4) preserve and enhance California's resources and assets, and (5) promote quality service. Caltrans has the discretionary authority to issue special permits for the use of state highways for other than normal transportation purposes. For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. For projects that would not physically affect facilities, but may influence traffic flow and levels of services at such facilities, these potential impacts to Caltrans facilities would need to be analyzed in accordance with Caltrans protocol, and Caltrans may recommend measures to mitigate the traffic impacts of such projects.

Assembly Bill 1358 – California Complete Streets Act of 2008

Assembly Bill (AB) 1358 requires circulation elements as of January 1, 2011, to accommodate the transportation system from a multi-modal perspective, including public transit, walking and biking, which have traditionally been marginalized in comparison to autos in contemporary American urban planning.

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law. SB 743 started a process that will fundamentally change transportation impact analysis as part of CEQA compliance. These changes include the elimination of auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts California. SB 743 required the Governor's Office of Planning and Research (OPR) to propose revisions to the CEQA Guidelines establishing new criteria to "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)).

The new CEQA Guidelines Section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts are primarily focused on projects within

transit priority areas, and shifts the focus from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses (which in turn reduces vehicle trips). Vehicle miles traveled (VMT) is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

The newly adopted guidance provides that a lead agency may elect to be governed by the provisions of SB 743 immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide. The city has not yet formally adopted its updated transportation significance thresholds or its updated transportation impact analysis procedures. Since the regulations of SB 743 have not been finalized or adopted by the city, automobile delay remains the measure used to determine the significance of a traffic impact.

Regional

The following regional plans and programs provide an overall context for the consideration of site-specific issues at the project site. However, neither the Regional Transportation Plan nor the San Diego County Congestion Management Program include regulations or policies that specifically apply to the development of the proposed project.

San Diego Association of Governments Regional Transportation Plan

The 2050 Regional Transportation Plan (RTP) acts as a blueprint for maintaining and improving the region's transportation systems. The plan focuses on building a transportation system that encompasses sustainability, land use patterns, and social equity. The RTP also outlines plans for maintaining, improving, and developing regional modes of transit, including rail systems, bus rapid transit, and roadways. The RTP identifies a potential future project that would provide peak period bus rapid transit (BRT) on I-5 and along an east-west corridor in the vicinity of Palomar Airport Road.

San Diego County Congestion Management Program

State Proposition 111, passed by voters in 1990, established a requirement that urbanized areas prepare and regularly update a Congestion Management Program (CMP). The San Diego Association of Governments (SANDAG) is the subregional planning agency for San Diego County and is responsible for the preparation and adoption of the county's CMP. The purpose of the CMP is to monitor the performance of the region's transportation system, develop programs to address near-term and long-term congestion, and better integrate transportation and land use planning. In October 2009, the San Diego region elected to be exempt from the state CMP, and since that decision SANDAG has been abiding by 23 CFR 450.320 (Congestion Management Process in Transportation Management Areas) to ensure the region's compliance with the federal congestion management process.

Local

The section below provides a summary of the city's plans, ordinances, regulations, and policies that are related to the provision of transportation systems within the city. Where provisions are

required by code or ordinance (e.g., the CMC) it is presumed that the proposed project would adhere to the requirements. Consistency of the project with applicable goals and policies of the City of Carlsbad General Plan is addressed in Section 4.10, *Land Use and Planning*, specifically in **Table 4.10-2, General Plan Consistency Determination Summary**.

Carlsbad Bikeway Master Plan

The city adopted a Bikeway Master Plan in 2007, which guides the future development of the city's bicycle facilities and enhancement of the existing bikeway network. The Bicycle Master Plan identifies existing and planned bicycle facilities and addresses gaps, constrained areas, and improvements at intersections. It also complies with the requirements of the Bicycle Transportation Account, which is an annual program providing state funds for bicycle facilities improvements. The Bikeway Master Plan is important in considering the overall context in which the project is proposed for development and understanding that the city supports non-vehicular modes of transportation within the city. However, there are no policies within the Bikeways Master Plan that are specifically applicable to the project when considering the project's development and ensuring adherence to environmental protection and mitigating policies.

Carlsbad General Plan

The city's General Plan Mobility Element discusses specific transportation policies to improve vehicle travel and increase bicycle and public transportation use as well as overall transportation connectivity. The following policies of the Mobility Element are applicable to the proposed project:

- 3-G.1: Keep Carlsbad moving with livable streets that provide a safe, balanced, cost-effective, multi-modal transportation system (vehicles, pedestrians, bikes, transit), accommodating the mobility needs of all community members, including children, the elderly and the disabled.
- 3-G.2: Improve connectivity for residents, visitors and businesses.
- 3-G.3: Provide inviting streetscapes that encourage walking and promote livable streets.
- 3-P.32: Require developers to improve pedestrian and bicycle connectivity consistent with the city's bicycle and pedestrian master plans and trails master planning efforts. In addition, new residential developments should demonstrate that a safe route to school and transit is provided to nearby schools and transit stations within a half mile walking distance.

Table 4.10-2, General Plan Consistency Determination Summary (provided in Section 4.10.4, *Project Impact Analysis* of the Land Use and Planning section) provides an analysis of the project's consistency with the above General Plan goals and policies. As indicated therein, the proposed project would be consistent with the above goals and policies.

Per the Mobility Element, Palomar Airport Road from I-5 to College Boulevard/Aviara Parkway is exempt from city LOS standards. Therefore, the city implements transportation demand management, transportation system management, and livable streets techniques to better manage the transportation system as a whole.

Carlsbad Growth Management Plan

In 1986, Carlsbad residents voted to pass the GMP, which put conditions on how growth could occur throughout the city while maintaining the right mix of commercial, industrial, recreation, open space, and infrastructure. It ensures the city maintains an excellent quality of life with sufficient parks, libraries, roads, open space, and important city infrastructure and services as the city grows. Under the GMP, development can only occur when certain quality of life standards are met. Specifically, the Citywide Facilities and Improvement Plan was adopted to establish performance standards for 11 types of public facilities, including transportation. Subsequently, the city was divided into 25 subareas with a unique Local Facilities Management Plan (LFMP) for each subarea. The proposed project is located within LFMP Zone 5, which was adopted July 1, 1987. Chapter 21.90 of the CMC enacts the city's GMP. Because the GMP is implemented through the CMC, implementation would be required and enforced by city staff as the proposed project moves through the development review process.

Carlsbad Municipal Code

The Carlsbad Municipal Code (CMC) identifies numerous components affecting transportation. This includes parking requirements and truck routes. Section 10.32.091 of the CMC defines the designated truck routes, which include Palomar Airport Road from Carlsbad Boulevard to the eastern city limits, and College Boulevard from Palomar Airport Road to El Camino Real near the project site.

Carlsbad Pedestrian Master Plan

The city's Pedestrian Master Plan was completed in August 2008. It is intended to assist the city in implementing and improving their pedestrian facilities into the future. The Pedestrian Master Plan is important in consideration of the overall context in which the project is proposed for development. However, there are not policies within the Pedestrian Master Plan that are specifically applicable to the project when considering the project's development and ensuring adherence to environmental protection and mitigating policies.

4.14.3 Thresholds and Methodology

Thresholds

A significant impact would occur to transportation if the proposed project would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.

The city's thresholds of significance for intersections and roadway segments as defined in the TIS Guidelines are as follows:

Intersections:

- If the existing LOS is LOS D, and the addition of project trips would cause operations to deteriorate to LOS E or LOS F conditions, an impact would occur.
- If the existing LOS is LOS E or LOS F, and the addition of project trips would cause the average intersection delay to increase by more than 2.0 seconds, an impact would occur.

Roadway Segments:

- If the existing LOS is LOS D, and the addition of project trips would cause operations to deteriorate to LOS E or LOS F conditions, an impact would occur.
- If the existing LOS is LOS E or LOS F, and the addition of project trips would cause the V/C ratio to increase by 0.02 or more, an impact would occur.

Methodology

The analysis of potential project-related impacts related to transportation is provided for the following scenarios:

- Existing Conditions
- Existing with Project Conditions
- Cumulative Conditions (2020)
- Cumulative with Project Conditions

Existing Conditions are described above under Section 4.14.1, *Existing Conditions*. Cumulative conditions were modeled based on expected 2020 conditions, which includes an analysis of traffic conditions with the addition of traffic volumes associated with approved or pending projects within the study area. In accordance with the city's Transportation Impact Study Guidelines, a horizon year analysis (beyond the 2020 cumulative year) is not required as the proposed land uses that comprise the proposed project are consistent with the General Plan.

In order to provide a thorough analysis of expected transportation conditions in a single section of the EIR, the full cumulative transportation analysis is included within this EIR section rather than presented solely in Section 6.1, *Cumulative Impacts*.

Trip Generation

To determine the trips generated by the proposed apartment land use, SANDAG trip generation rates (April 2002) were applied in accordance with the TIS Guidelines. **Table 4.14-5, *Project Trip Generation***, presents the trip generation rates used for the proposed project and summarizes the estimated AM peak hour, PM peak hour, and daily vehicle trips that would be generated by the project. As shown in the table, the proposed project would generate approximately 1,974

vehicle trips per day, which includes approximately 158 AM peak hour vehicle trips and approximately 178 PM peak hour vehicle trips.

**TABLE 4.14-5
 PROJECT TRIP GENERATION**

	Daily Trips	AM Peak Hour (7:30 to 8:30)			PM Peak Hour (4:15-5:15)		
		Total	Inbound	Outbound	Total	Inbound	Outbound
<i>Trip Rates</i>							
Apartments	6/DU	8%	20%	80%	9%	70%	30%
<i>Forecast Trips</i>							
259 apartment units (West Side)	1,554	124	25	99	140	98	42
70 apartment units (East Side)	420	34	7	27	38	27	11
Total Trips	1,974	158	32	126	178	125	53

NOTES:

DU: Dwelling Units

SOURCES: SANDAG "Not so Brief Guide" – April 2002; MBI, 2019.

Trip Distribution and Assignment

The project site would be accessed from Aviara Parkway to either Palomar Airport Road or Poinsettia Lane, as these roads provide the most direct routes to I-5 or to destinations east of the project site. Residents are also expected to use Plum Tree Road to access Poinsettia Community Park and Pacific Rim Elementary. The project trip distribution was developed based on existing travel patterns and access to major road networks in the study area. Considerations including local land use and local roadway network/freeway access were used in determining the trip distribution. The following list shows the general trip distribution assumed to and from the project site:

- 40% to/from the south using Aviara Parkway
- 30% to/from the west using Palomar Airport Road
- 20% to/from the east using Palomar Airport Road
- 10% to/from the north using College Boulevard

These trip distribution patterns, as well as further granular detail on patterns along Poinsettia Lane, Plum Tree Road, and Armada Drive, are illustrated in Appendix J. Based on these trip distribution patterns, project-related trips were assigned to the study area roadway network.

Intersection Analysis

As noted above under Section 4.14.1, in compliance with the TIS Guidelines, study intersections were evaluated using the HCM6 Operation Methodology. Table 4.14-1, *Intersection Level of Service Definitions*, summarizes the LOS thresholds for signalized intersections based on average intersection delay, as described in the HCM6.

Roadway Segment Analysis

As noted above under Section 4.14.1, the study roadway segments were evaluated based on peak hour volumes and capacities specific to the roadway segment as determined in the city’s Generalized Service Tables – Specific Corridors (see Appendix J). A V/C ratio was calculated for each segment based on the segment capacity. The V/C ratio was calculated to determine the change in V/C for each segment as a result of the proposed project.

4.14.4 Project Impact Analysis

Impact 4.14-1: Would the proposed project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Existing with Project

Intersection Analysis

The LOS was determined at the study area intersections for the AM and PM peak hours using the HCM6 methodology. **Table 4.14-6, Existing with Project Levels of Service**, presents the Existing with Project conditions peak hour analysis. Similar to Existing Conditions, four of the five study intersections would operate at LOS D or better with the addition of project-related traffic, which is considered acceptable operating conditions per the TIS Guidelines. The exception is Intersection No. 5, Aviara Parkway-College Boulevard/Palomar Airport Road, which currently operates at LOS E. Based on the impact thresholds previously identified, project impacts to intersections under the Existing with Project scenario would be **less than significant**. Analysis worksheets are provided in Appendix J.

**TABLE 4.14-6
EXISTING WITH PROJECT LEVELS OF SERVICE**

#	Intersection	Traffic Control	Peak Hour	Existing		Existing with Project		Significant Impact?	
				Delay (sec) ^(a)	LOS ^(b)	Delay (sec) ^(a)	LOS ^(b)	Change in Delay (sec)	CEQA Impact?
1	Poinsettia Lane / Aviara Parkway	Signal	AM	25.4	C	26.6	C	0.9	No
			PM	30.9	C	31.9	C	1.0	No
2	Aviara Parkway / Camino De Las Ondas	Signal	AM	13.8	B	13.8	B	0.0	No
			PM	13.4	B	13.5	B	0.1	No
3	Aviara Parkway / Plum Tree Road	Signal	AM	10.6	B	10.6	B	0.0	No
			PM	12.4	B	12.4	B	0.0	No
4	Aviara Parkway / Laurel Tree Lane	Signal	AM	16.8	B	20.5	C	3.7	No
			PM	15.5	B	18.3	B	2.8	No
5	Aviara Parkway-College Boulevard/ Palomar Airport Road	Signal	AM	77.9	E	78.7	E	0.8	No
			PM	57.6	E	59.2	E	1.6	No

NOTES:

(a) Delay is calculated based on the HCM6 Operations Methodology and is reported in seconds per vehicle

(b) LOS is based on thresholds established in the HCM6.

SOURCE: MBI, 2019.

Roadway Segment Analysis

Table 4.14-7, Existing with Project Roadway Segment Levels of Service, summarizes the forecast operating conditions at the study area roadway segments for the Existing with Project conditions. As shown in the table, all roadway segments would operate at acceptable LOS D or better with the proposed project. Based on the impact thresholds previously identified, project impacts to roadway segments under the Existing with Project scenario would be **less than significant**. Analysis worksheets are provided in Appendix J.

Cumulative with Project

Cumulative conditions volumes were based on information provided by the city regarding past, present and reasonably expected projects within the study area. A total of eleven cumulative projects were included in the analysis, and consist of residential, hotel, retail, and community facility land uses that are either pending approval, approved, or under construction. Additional detail on the cumulative projects is provided in Table 6-1, *Cumulative Projects List*, and in Appendix J of this EIR.

The city anticipates the extension of College Boulevard from Cannon Road to El Camino Real will be constructed in the near future. The College Boulevard extension is approximately 2 miles from the project site; the extension is expected to have little impact on traffic volumes in the study area because the shift in volumes is relatively small compared to the overall volume through the intersections. However, the cumulative year volumes considered in this EIR include the extension of this roadway. Cumulative project trips assigned to study area roadways and intersections are illustrated Appendix J.

To determine the Cumulative with Project volumes, the project trips were overlaid on the baseline (No Project) Cumulative volumes.

Intersection Analysis

The LOS was determined at the study area intersections for the AM and PM peak hours under baseline and with project conditions using the HCM6 methodology. **Table 4.14-8, Cumulative Conditions Levels of Service**, presents the Cumulative and Cumulative with Project conditions peak hour analysis. Similar to Existing Conditions, four of the five study intersections would operate at LOS D or better in the Cumulative Conditions traffic scenario both with without the addition of project traffic, which is considered acceptable operating conditions per the TIS Guidelines. The exception is Intersection No. 5, Aviara Parkway-College Boulevard/Palomar Airport Road, which would operate at LOS E during the AM peak hour and LOS F during the PM peak hour both with and without the proposed project. Based on the impact thresholds previously identified, project impacts to intersections under the Cumulative with Project scenario would be **less than significant**. Analysis worksheets are provided in Appendix J.

**TABLE 4.14-7
EXISTING WITH PROJECT ROADWAY SEGMENT LEVELS OF SERVICE**

Segment	Location	Direction	No. Lanes	Segment Capacity ¹	Existing						Existing Plus Project						Change in V/C		CEQA Impact?
					AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM	PM	
					Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	
Aviara Parkway	Palomar Airport Road to Laurel Tree Lane	SB	4/45/D	1,410	390	0.28	A	912	0.65	B	408	0.29	A	986	0.70	B	0.01	0.05	No
		NB	4/45/D	1,410	904	0.64	B	491	0.35	A	979	0.69	B	523	0.37	A	0.05	0.02	No
	Laurel Creek Lane to Cobblestone Road	SB	4/45/D	1,450	299	0.21	A	770	0.53	A	349	0.24	A	791	0.55	A	0.03	0.01	No
		NB	4/45/D	1,450	925	0.64	B	356	0.25	A	938	0.65	B	405	0.28	A	0.01	0.03	No
	Cobblestone Road to Plum Tree Road	SB	4/45/D	1,690	278	0.16	A	766	0.45	A	328	0.19	A	787	0.47	A	0.03	0.01	No
		NB	4/45/D	1,690	835	0.49	A	362	0.21	A	848	0.50	A	411	0.24	A	0.01	0.03	No
	Plum Tree Road to Camino de las Ondas	SB	4/45/D	1,720	351	0.20	A	795	0.46	A	395	0.23	A	814	0.47	A	0.03	0.01	No
		NB	4/45/D	1,720	827	0.48	A	427	0.25	A	838	0.49	A	470	0.27	A	0.01	0.03	No
	Camino de las Ondas to Poinsettia Lane	SB	4/45/D	1,690	367	0.22	A	751	0.44	A	411	0.24	A	770	0.46	A	0.03	0.01	No
		NB	4/45/D	1,690	817	0.48	A	442	0.26	A	828	0.49	A	485	0.29	A	0.01	0.03	No

NOTES:

(1) Segment Specific Capacity Tables (Oct 2019) – See Appendix J.

SOURCE: MBI, 2019.

**TABLE 4.14-8
CUMULATIVE CONDITIONS LEVELS OF SERVICE**

#	Intersection	Traffic Control	Peak Hour	Cumulative(baseline)		Cumulative with Project		Significant Impact?	
				Delay (sec) ^(a)	LOS ^(b)	Delay (sec) ^(a)	LOS ^(b)	Change in Delay (sec)	CEQA Impact?
1	Poinsettia Lane / Aviara Parkway	Signal	AM	27.4	C	28.3	C	0.9	No
			PM	34.0	C	35.2	D	1.2	No
2	Aviara Parkway / Camino De Las Ondas	Signal	AM	14.1	B	14.4	B	0.3	No
			PM	16.0	B	16.4	B	0.4	No
3	Aviara Parkway / Plum Tree Road	Signal	AM	10.8	B	10.9	B	0.1	No
			PM	13.5	B	13.8	B	0.3	No
4	Aviara Parkway / Laurel Tree Lane	Signal	AM	18.8	B	23.7	C	4.9	No
			PM	16.1	B	19.1	B	3.0	No
5	Aviara Parkway-College Boulevard/ Palomar Airport Road	Signal	AM	65.8	E	67.0	E	1.2	No
			PM	85.9	F	86.8	F	0.9	No

NOTES:

(a) Delay is calculated based on the HCM6 Operations Methodology and is reported in seconds per vehicle.

(b) LOS is based on thresholds established in the HCM6.

SOURCE: MBI, 2019.

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Roadway Segment Analysis

Table 4.14-9, *Cumulative Conditions Roadway Segment Levels of Service*, summarizes the forecast operating conditions at the study area roadway segments for Cumulative and Cumulative with Project conditions. Based on the impact thresholds previously identified, project impacts to roadway segments under the Cumulative with Project scenario would be **less than significant**. Analysis worksheets are provided in Appendix J.

Growth Management Plan

The TIA provides a full GMP analysis as required by the city's Transportation Impact Analysis Guidelines (2018). Through this analysis, several measures were identified to improve the design of the project and ensure project consistency with the city's transportation, pedestrian, bicycle, and transit policies. The applicant has agreed to implement these measures, which are outlined in Section 8 of the TIA (Appendix J). Requiring the incorporation of these features into the proposed project would ensure that the proposed project is consistent with the city's Growth Management Plan, as outlined in the TIA. As the city's Transportation Impact Analysis Guidelines and the GMP embody the requirements of the City of Carlsbad with regard to policies addressing the full range of circulation system requirements and improvements (including transit, roadway, bicycle, and pedestrian facilities) the project would be consistent with these plans and policies and the project impacts would be **less than significant**.

Impact 4.14-2: Would the proposed project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

In accordance with SB 743, the new CEQA Guidelines section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas, and shifts the focus from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. VMT is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

The newly adopted guidance provides that a lead agency may elect to be governed by the provisions of SB 743 immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide. The city has not yet formally adopted its updated transportation significance thresholds or its updated transportation impact analysis procedures. Since the regulations of SB 743 have not been finalized or adopted by the city, delay and LOS are the measures used in this EIR to determine the significance of transportation impacts (see Impact 4.14-1 discussion a, above). As such, no further analysis is required and impacts related to CEQA Guidelines Section 15064.3, subdivision (b) would be **less than significant**.

Impact 4.14-3: Would the proposed project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

As shown on the Fire Master Plan (Appendix L.2, approved by the city on August 1, 2018) access to the West Parcel would be provided on Aviara Parkway via two separate points of ingress. The

existing access driveway on the southern half of the West Parcel would be realigned to connect with a new private access road that would travel the entire perimeter of the West Parcel. An additional ingress only access would be provided from the existing access point closer to Palomar Airport Road. Access to the East Parcel would be provided via two separate driveways on Aviara Parkway and Laurel Tree Lane. A new access driveway would be provided on the northern boundary of the East Parcel that would travel along the northeast and south perimeter of the East Parcel and connect to the new access driveway on Laurel Tree Lane. An additional emergency access driveway would be constructed along Aviara Parkway, closer to Palomar Airport Road, and would also connect to the newly-created private access road.

All access routes to the West Parcel and the East Parcels as described above would have a minimum 20-foot-wide fire lane to ensure proper emergency access. The driveways would provide required turning radii per the CMC, which is a 20-foot-wide path with 28 feet inside and 46 feet outside. The project would also include a hammerhead turnaround on the West Parcel with dimensions that conform to the 2016 California Fire Code (120-foot Hammerhead, 60-foot “Y,” or 96-foot-diameter cul-de-sac). As well, the proposed project would provide aerial truck ladder access to buildings that are four stories, as shown on the approved Fire Master Plan, on the buildings located along the north, west, and south boundaries of the West Parcel and the leasing office and adjacent building in the East Parcel. Additionally, performance based aerial truck laddering has been provided on the East Parcel. All fire lane signs on-site would be placed in accordance with the CMC and the Carlsbad Fire Department requirements, as specified in the Fire Master Plan and approved by the city in the Alternatives Materials and Methods letter (City of Carlsbad, 2018), which is included in Appendix L.2. The proposed project would not alter existing roadways nor include any hazardous design features such as sharp curves or dangerous intersections. All driveways would be constructed to meet current driveway design standards established by the city. No incompatible uses such as farm equipment are proposed. Based on the above, the impact of the proposed project on hazardous conditions and incompatible uses would be **less than significant**.

Impact 4.14-4: Would the proposed project result in inadequate emergency access?

Access to the project site would mainly be provided via Aviara Parkway and Laurel Tree Lane. Driveways leading into and out of the West Parcel and the East Parcel from these roadways, as well as internal access driveways, would be developed in order to ensure proper emergency access. The project has been designed to comply with applicable Fire Code and Building Code requirements, including emergency vehicle access, demonstrated as part of the approved Fire Master Plan, which shows how the project aims to reduce hazard risks. The proposed project’s design and emergency access would ensure that the project would not substantially impair adopted emergency response or evacuation plans. This conclusion is reinforced by the City of Carlsbad Fire Department’s approval of the Fire Master Plan and the Alternative Materials and Methods that have been incorporated into the proposed project (City of Carlsbad Fire Department, 2018). The proposed project does not include or propose activities that would obstruct or degrade emergency access in the vicinity of the project site. For these reasons, the impact to emergency access would be **less than significant**.

**TABLE 4.14-9
CUMULATIVE CONDITIONS ROADWAY SEGMENT LEVELS OF SERVICE**

Segment	Location	Direction	Class.	Segment Capacity ⁽¹⁾	Cumulative Condition						Cumulative Plus Project Condition						Change in V/C		CEQA Impact?
					AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM	PM	
					Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	
Aviara Parkway	Palomar Airport Road to Laurel Tree Lane	SB	4/45/D	1,410	445	0.32	A	1089	0.77	C	463	0.33	A	1163	0.82	D	0.01	0.05	No
		NB	4/45/D	1,410	1064	0.75	C	709	0.50	A	1139	0.81	D	741	0.53	A	0.05	0.02	No
	Laurel Tree Lane to Cobblestone Road	SB	4/45/D	1,450	354	0.24	A	947	0.65	B	404	0.28	A	968	0.67	B	0.03	0.01	No
		NB	4/45/D	1,450	1085	0.75	C	574	0.40	A	1098	0.76	C	623	0.43	A	0.01	0.03	No
	Cobblestone Road to Plum Tree Road	SB	4/45/D	1,690	333	0.20	A	943	0.56	A	383	0.23	A	964	0.57	A	0.03	0.01	No
		NB	4/45/D	1,690	995	0.59	A	580	0.34	A	1008	0.60	A	629	0.37	A	0.01	0.03	No
	Plum Tree Road to Camino de las Ondas	SB	4/45/D	1,720	406	0.24	A	972	0.57	A	450	0.26	A	991	0.58	A	0.03	0.01	No
		NB	4/45/D	1,720	987	0.57	A	645	0.38	A	998	0.58	A	688	0.40	A	0.01	0.03	No
	Camino de las Ondas to Poinsettia Lane	SB	4/45/D	1,690	422	0.25	A	928	0.55	A	466	0.28	A	947	0.56	A	0.03	0.01	No
		NB	4/45/D	1,690	977	0.58	A	660	0.39	A	988	0.58	A	703	0.42	A	0.01	0.03	No

NOTES:

(1) Segment Specific Capacity Tables (Oct 2019) – See Appendix J.

SOURCE: MBI, 2019.

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4.14.5 Level of Significance before Mitigation

Implementation of the proposed project would not result in significant environmental impacts related to transportation; therefore, no mitigation measures are proposed.

4.14.6 Environmental Mitigation Measures

No mitigation measures are proposed, as no significant environmental impacts have been identified.

4.14.7 Level of Significance after Mitigation

No significant environmental impacts related to transportation have been identified.

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4.15 Utilities and Service Systems

This section summarizes the existing conditions, regulatory framework, and potential impacts to utilities (water supply, waste water, and solid waste) as a result of implementation of the proposed project. The analysis is partly based on a Private Water Analysis for Aviara Apartments (Appendix K.1) and the Offsite Sewer Analysis (Appendix K.2), both prepared by Dexter Wilson Engineering, Inc. for the City of Carlsbad (city) on April 2, 2019, as well as information, and correspondence from and with several city sources, including the 2015 Urban Water Management Plan (UWMP) for Carlsbad Municipal Water District (CMWD), the 2012 City of Carlsbad Sewer Master Plan for CMWD, CMWD Recycled Water Master Plan (2012), Waste Management and the Local Facilities Management Plan (LFMP) Zone 5.

4.15.1 Existing Conditions

Potable Water System/Water Supply

The project site is located within the CMWD service area, which is supplied with both potable and recycled water. CMWD imports all of its water supply from out of the region. The two main sources of potable water are from the Colorado River, where water is transported through the Colorado River Aqueduct, and Northern California, which brings water through the California Aqueduct (also known as the State Water Project) to Southern California. The water from these sources is treated by the Metropolitan Water District of Southern California (MWD) at its Lake Skinner Treatment Plant in Riverside County and by the San Diego County Water Authority (SDCWA). CMWD purchases its potable water supply from the SDCWA. The SDCWA annexed to the MWD in 1946 as its largest customer. SDCWA purchases water from MWD and other sources for resale to its 24 member agencies. To reduce its dependency on MWD and diversify its supplies, the SDCWA has undertaken the following:

- Imperial Irrigation District (IID) Water Transfer – Colorado River water via transfers from IID.
- All-American and Coachella Canal Lining Conserved Water – Colorado River water from conservation savings from various canal lining projects.
- Seawater Desalination Action Plan and Water Transfer and Banking Program – SDCWA purchases desalinated seawater from the Claude “Bud” Lewis Carlsbad Desalination Plant and blends it into member agency supplies.

By 2020, local water supplies are projected to meet more than a third of the region’s water demand. CMWD covers an area of 20,682 acres, approximately 32.32 square miles, and provides water service to 85% of the city (CMWD, 2016). CMWD receives all of its potable water supply from SDCWA through four connections. Water within CMWD is delivered through 450 miles of pipeline, 57 pressure regulating stations, five pump stations, ten storage tanks, and one reservoir (CMWD, 2016). CMWD operates and maintains one active pump station and four standby pump stations within the distribution system that are used for emergency purposes only. Water storage for the CMWD is provided by Maerkle Dam Reservoir, with a capacity of approximately 700 acre-feet and 10 additional reservoirs within the distribution system.

Table 4.15-1, Existing and Projected Water Demand in the CMWD Service Area (AFY), identifies the existing and projected normal-year water demand within the CMWD service area through 2040, including water demand associated with potable water use. As indicated therein, based on information in CMWD’s 2015 UWMP, total normal-year water demand within CMWD’s service area was 14,029 acre-feet per year (AFY) in 2015, with this demand projected to increase to 19,768 AFY by 2040, a 40.9% increase (CMWD, 2016). Multi-family residential is expected to comprise just over 11% of the future water demands in the CWMD service area.

**TABLE 4.15-1
 EXISTING AND PROJECTED WATER DEMAND IN THE CMWD SERVICE AREA (AFY)**

Customer Type	Current		Projected			
	2015	2020	2025	2030	2035	2040
Single-Family Residential	7,088	9,198	9,820	9,979	10,351	10,346
Multi-Family Residential	1,526	2,073	2,201	2,229	2,214	2,214
Commercial/Industrial/ Institutional/Governmental/Agricultural	4,650	5,890	6,255	6,342	6,251	6,278
Water Losses	765	846	901	915	928	9
Total Water Demand	14,029	18,007	19,177	19,465	19,744	19,768

SOURCE: CMWD, 2016

Table 4.15-2, Existing and Projected CMWD Water Supply (AFY), identifies CMWD’s existing and projected water supplies through 2040. As indicated therein, based on CMWD’s UWMP, total CMWD water supply was 17,057 AFY in 2015, this supply is projected to increase to 30,474 AFY by 2040, a 78.6% increase. As discussed above, this supply comes from several regional and local sources.

**TABLE 4.15-2
 EXISTING AND PROJECTED CMWD WATER SUPPLY (AFY)**

Water Supply Source	2015 ¹	2020	2025	2030	2035	2040
SDCWA Purchases	13,264	15,507	16,677	16,965	17,244	17,268
Seawater Desalination		2,500	2,500	2,500	2,500	2,500
<i>Potable Total</i>		<u>18,007</u>	<u>19,177</u>	<u>19,465</u>	<u>19,744</u>	<u>19,768</u>
Recycled Water ²	3,793	10,519	10,519	10,519	10,519	10,519
Total	17,057	28,526	29,696	29,984	30,450	30,474

¹ Actual 2015 water supplied.

² Recycled Water supplies include the Carlsbad Water Recycling Facility (WRF) capacity plus the existing recycled water purchased from

VWD and LWD. The Carlsbad WRF is undergoing an expansion, resulting in the substantial increase in recycled water supply between 2015 and 2020

SOURCE: CMWD, 2016

Based on the above, and as indicated in the CMWD's 2015 UWMP, the city has adequate water supplies to meet its existing and future annual water demand within the CMWD service area through at least 2040. Furthermore, the supply identified in Table 4.15-2, *Existing and Projected CMWD Water Supply (AFY)*, reflects the amount of water used to meet demand, not the total supply available to the city in a given year. The city can increase its available groundwater supply by importing and recharging water and can accumulate groundwater credits for later use. Additionally, the Carlsbad Water Recycling Facility (WRF) is undergoing an expansion, resulting in a substantial increase in recycled water supply from approximately 4.0 million gallons per day (mgd) to 8.0 mgd between 2015 and 2020 (CMWD, 2016).

The proposed project is located in an area of the city which is served by the 375 Pressure Zone. The nearest existing public water line in the vicinity of the project site is an 18-inch water line along Aviara Parkway and an 8-inch water line in Laurel Tree Lane, both served by the 375 Pressure Zone. The 375 Pressure Zone is served primarily from the D-3 Reservoirs, which are located near the intersection of Poinsettia Lane and Black Rail Road. Refer to Figure 2, *Private Fire Protection System*, of Appendix K.1 of this EIR, which depicts the existing water facilities in the vicinity of the project site that are described herein.

Recycled Water System

In addition to potable water supply, CMWD's provides recycled water to the city. CMWD operates a recycled water system consisting of five pressure zones, three storage tanks, three booster pumping stations, two supply sources with pump stations and three pressure regulating stations. CMWD receives recycled water from three reclamation plants within the Encina Wastewater Authority (EWA) service area: Carlsbad WRF, Meadowlark WRF, and Gafner Water Reclamation Plant. CMWD's recycled water system requires coordination with the three agencies, the EWA, Vallecitos Water District (VWD), and the Leucadia Wastewater District (LWD). The Carlsbad WRF is owned by the CMWD and the EWA has been contracted to provide operation and maintenance through a memorandum of understanding dated May 1, 2005 (City of Carlsbad, 2012b). The Meadowlark WRF is owned and operated by the VWD and serves both CMWD's recycled water system and a portion of the Olivenhain Municipal Water District's (OMWD) recycled water system within the city. The Gafner Water Reclamation Plant is owned and operated by the LWD.

Table 4.15-3, *Existing and Projected Recycled Water Supplies and Demand (AFY)*, identifies CMWD's existing and projected recycled water supplies and demand through 2040. In 2015, CMWD's recycled water system delivered 3.7 mgd (or 4,150 AFY) of recycled water. CMWD's 2015 UWMP indicates that recycled water deliveries are projected to increase to 10,706 AFY (9.6 mgd) by 2040 (CMWD, 2016).

**TABLE 4.15-3
 EXISTING AND PROJECTED RECYCLED WATER SUPPLIES AND DEMAND (AFY)**

	2015	2020	2025	2030	2035	2040
Recycled Water Supplies						
Carlsbad WRF	1,903	8,272	8,272	8,272	8,272	8,272
Meadowlark WRF	2,000	2,000	2,000	2,000	2,187	2,187
Gafner WRF	247	247	247	247	247	247
<i>Total Recycled Water Supplies</i>	<i>4,150</i>	<i>10,519</i>	<i>10,519</i>	<i>10,519</i>	<i>10,706</i>	<i>10,706</i>
Recycled Water Demands						
Projected Recycled Water Demands	3,793	5,078	5,078	5,078	5,078	5,078
Potential Recycled Water Surplus	357	5,441	5,441	5,441	5,628	5,628

SOURCE: CMWD, 2016

The proposed project is located within the 384 Pressure Zone of the EWA service area. The 384 Pressure Zone receives flow through the Carlsbad WRF Pump Station (PS). The Carlsbad WRF PS is located at the Carlsbad WRF and consists of three pump units that pump into Zone 384. The pump units are sized at 3,330 gallons per minute (gpm) each. The pump station design flow of 10,000 gpm requires simultaneous operation of all three pump units. Two empty pump bays would provide space for future expansion of the pump station. There are 384 Pressure Zones located north and south along Aviara Parkway and west on Palomar Airport Road which receives flow through the Carlsbad WRF Pump Station located approximately 1 mile from the project site (CMWD, 2012b).

Sewer and Wastewater Facilities

The city's wastewater service area covers approximately 30.5 square miles, or 78% of the 39.1 square miles comprising the city limits (CMWD, 2012a). Sewer service to the city is provided by three sewer agencies: the city, LWD, and VWD. The project site is located entirely within the city sewer services area. The project site is in an area of the city in which wastewater treatment is provided by the EWA through the Encina Water Pollution Control Facility (EWPCF). The EWPCF is owned and operated by EWA and treats an average flow of 20 mgd wastewater but has the capacity to treat over 40 mgd (Carlsbad, 2016).

Projects within Zone 5 are within the Encinas Creek sewer drainage basin and are required to pay the sewer benefit area fees for this basin. Ultimately, all the sewage generated by Zone 5 projects will be conveyed through the Encinas Creek Interceptor System to the EWPCF, which is located at the west end of the Encinas Creek basin (CMWD, 2012b). Carlsbad's current Engineering Standards identify the average daily sewage flow to be 220 gallons per day/dwelling unit (gpd/du). There is an existing 8-inch sewer line along Aviara Parkway which has 4 existing sewer access holes and meets a 30-inch existing public gravity line along Palomar Airport Road. On the east side of the East Parcel, an 8-inch existing pipeline runs north to also meet the 30-inch existing public gravity line along Palomar Airport Road, which meets the existing 30-inch Vallecitos interceptor that flows west to the EWPCF (Dexter Wilson Engineering, Inc., 2019b).

Storm Drain

The city is divided into four major watershed basins: the Buena Vista Creek Watershed, the Agua Hedionda Creek Watershed, the Encinas Creek Watershed, and the Batiquitos Lagoon Watershed. The project site is located in the Encinas Creek Watershed (Basin C), which covers an area of approximately 4 square miles (2,580 acres). The drainage courses parallel Palomar Airport Road along an alignment just south of the roadway and runs for 3 miles. The Encinas Creek watershed is the only one among the four listed watersheds that does not end in a lagoon but discharges directly to the Pacific Ocean after crossing Interstate 5 (I-5) and Carlsbad Boulevard. (City of Carlsbad, 2008)

Basin C is located in the center of the city and comprises approximately 2,580 acres of land, or 10% of the entire city area. The northern boundary includes Palomar Airport Road, Cannon Road, and College Boulevard. The western boundary is the Pacific Ocean, while the southern boundary follows Poinsettia Lane and El Camino Real. Palomar Airport Road runs through the center of the basin. The current infrastructure provides service to mainly residential communities, along with some planned industrial facilities (approximately 35% of the total area). Thirteen percent of the Basin C area is designated as open space (City of Carlsbad, 2008).

Existing storm drain facilities are located on Aviara Parkway between the West Parcel and the East Parcel and along Palomar Airport Road (City of Carlsbad, 2008).

Solid Waste Disposal

Solid waste disposal in the area surrounding the project site is provided by Waste Management of North County, a private waste hauling company which contracts with the city, Del Mar, Oceanside, the Camp Pendleton Marine Corps Base, and several unincorporated regions of San Diego County. Solid waste collected in the city is taken to the Palomar Transfer Station located at 5960 El Camino Real in Carlsbad. According to the California Department of Resources Recycling and Recovery (CalRecycle), the Palomar Transfer Station is a large-volume transfer/processing facility which is permitted to accept 2,250 tons of solid waste per day. The Palomar Transfer Station accepts mixed municipal, construction/demolition, green materials, and industrial waste (CalRecycle, 2019a). Solid waste is then transferred to Otay Landfill located at 1700 Maxwell Road in Chula Vista, California. Otay Landfill is a Class III landfill and accepts green materials, mixed municipal waste, construction/demolition waste, agricultural waste material, sludge (biosolids), and tires. Otay Landfill is permitted to accept 6,700 tons of waste per day. It has a maximum permitted capacity of 61,154,000 cubic yards. According to CalRecycle, the landfill has a remaining capacity of 21,194,008 cubic yards with an anticipated closure date of February 28, 2030 (CalRecycle, 2019b). Solid waste is also transferred to Sycamore Landfill which is located at 8514 Mast Boulevard at West Hills Pkwy in the city of San Diego, California. The Sycamore landfill accepts asbestos, contaminated soil, mixed municipal, biosolids, agricultural, dead animals, tires, shreds, wood waste, and other designated waste. Sycamore Landfill is permitted to accept 5,000 tons of waste per day. It has a maximum permitted capacity of 147,980,000 cubic yards. According to CalRecycle, the landfill has a remaining capacity of 113,972,637 cubic yards with an anticipated closure date of December 31, 2042 (CalRecycle, 2019c).

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

Energy capacity, or electrical power, is generally measured in watts (W) while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for 1 hour would be 100 Wh. If ten 100 W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts (MW), which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

The city is served by San Diego Gas & Electric (SDG&E). SDG&E provides electricity to approximately 3.6 million people, through 1.4 million electric meters and 873,000 natural gas meters in San Diego and southern Orange counties throughout the 4,100-square-mile service area (SDG&E, 2019). SDG&E is a regulated California utility of Sempra Energy. Sempra Energy is a San Diego-based energy services holding company whose subsidiaries provide electricity, natural gas and value-added products and services.

In 2015, electrical power consumption attributable to the County of San Diego was approximately 19,885 GWh from residential and non-residential sectors (CEC, 2016a).

4.15.2 Regulatory Setting

Federal

The following state and federal regulations provide an overall context for the consideration of site-specific issues at the project site. When provisions are requirements (e.g., law, code, regulation, or ordinance), it is assumed these regulatory requirements would be adhered to with project implementation, both as they apply to development of the proposed project and related project activities.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) is the nation's primary law governing the disposal of solid and hazardous waste. The RCRA set national goals for reducing the amount of waste generated and for ensuring that wastes are managed in an environmentally sound manner. The Solid Waste Program encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid

waste landfills, and prohibits the open dumping of solid waste. RCRA regulations encourage source reduction and recycling and promote the safe disposal of municipal waste.

Federal Communications Act of 1996

The Federal Telecommunications Act of 1996 (TCA) preserves the city's ability to regulate the placement, construction, and modification of wireless communication facilities. Under the TCA, the City is subject to the following restrictions: Regulations may not unreasonably discriminate among functionally equivalent service providers; Regulations may not prohibit or have the effect of prohibiting the provision of personal wireless services; A city must act on an application for WCFs within a "reasonable" amount of time (60, 90, or 150 days from the time an application is submitted); The city cannot deny an application because of perceived radio frequency health hazards; The city cannot deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station; Certain collocation facilities are not subject to discretionary permit requirements; and A decision to deny an application must be supported by substantial evidence.

State

Assembly Bill 939 – California Integrated Waste Management Act of 1989

Solid waste regulation in California is governed by the California Integrated Waste Management Act of 1989, which is commonly known as Assembly Bill (AB) 939. Oversight of these activities was set up under the guidance of the California Integrated Waste Management Board (CIWMB). The duties and responsibilities of CIWMB were transferred to CalRecycle as of January 1, 2010. AB 939 requires counties to develop an Integrated Waste Management Plan that describes local waste diversion and disposal conditions, and lays out realistic programs to achieve the waste diversion goals. The act, codified into the California Public Resources Code (PRC), emphasizes a reduction of waste disposed in California landfills. Integrated Waste Management Plans compile Source Reduction and Recycling Elements that are required to be prepared by each local government, including cities. Source Reduction and Recycling Elements analyze the local waste stream to determine where to focus diversion efforts, and provide a framework to meet waste reduction mandates. The goal of the solid waste management efforts is not to increase recycling, but to decrease the amount of waste entering landfills. AB 939 required all cities and counties to divert a minimum 50% of all solid waste from landfill disposal.

Additionally, AB 939 requires that all counties and cities develop a comprehensive solid waste management program that includes a Source Reduction and Recycling Element to address waste characterization, source reduction, recycling, composting, solid waste facility capacity, education and public information, funding, special waste (asbestos, sewage sludge, etc.), and household hazardous waste. It also requires counties to develop a Siting Element that addresses the need for landfill/transformation facilities for 15-year intervals; and it also mandates all cities and counties to prepare and submit annual reports that summarize the jurisdictions' progress in reducing solid waste.

The city's Chapter 6.08, Solid Waste outlines policies and regulations regarding solid waste receptacles, recycling, and disposal services for multi-family residential buildings.

Senate Bill 1374 – Construction and Demolition Waste Materials Diversion Requirements

Senate Bill (SB) 1374 was signed into law in 2002 and requires the range of diversion rates of construction and demolition (C&D) waste material from 50% to 75% at the local level. The bill called for preparation of a model C&D diversion ordinance by March 1, 2004, and a model ordinance was adopted by CalRecycle on March 16, 2004. The bill also required that jurisdictions include in their annual AB 939 report a summary of the progress made in diverting C&D wastes.

Assembly Bill 341 – California's 75 Percent Initiative

AB 341, which took effect on July 1, 2012, was designed to help California achieve its solid waste diversion goal of 75%, required per SB 1374, by the year 2020. AB 341 makes "...a legislative declaration that it is the policy goal of the state that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020..." AB 341 requires a multi-family residential dwelling of five units or more to arrange for recycling services. Such business/residential development must: (1) source separate recyclable materials from the solid waste they are discarding, and either self-haul or arrange for separate collection of the recyclables; and (2) subscribe to a service that includes mixed waste processing that yields diversion results comparable to source separation.

California Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code [CWC] Division 6, Part 2.6, Sections 10610-10656) was established by AB 797 on September 21, 1983. Passage of this law was recognition by state legislators that water is a limited resource and a declaration that efficient water use and conservation would be actively pursued throughout the state. The law requires water suppliers in California, providing water for municipal purposes either directly or indirectly to more than 3,000 people, prepare and adopt water management plans every 5 years which defines their current and future water use, sources of supply and their reliability, and existing conservation measures. Additionally, the plan must identify short-term and long-term demand management measures to meet growing water demands during normal, dry, and multiple-dry years. Specifically, municipal water suppliers that serve more than 3,000 customers or provide more than 3,000 AFY of water must adopt an UWMP. The city adopted its most recent UWMP in 2015, as noted above.

California Code of Regulations Title 20

Title 20, Sections 1605.1(h) and 1605.1(i) of the California Code of Regulations (CCR) establish efficiency standards (i.e., maximum flow rates) for all new federally-regulated plumbing fittings and fixtures, including such fixtures as showerheads, lavatory faucets and water closets. Amongst the standards, the maximum flow rate for showerheads and lavatory faucets are 2.5 gpm at 80 pounds per square inch (psi) and 2.2 gpm at 60 psi, respectively. The standard for water closets is

1.8 gallons per flush. In addition, Section 1605.3(h) establishes State efficiency standards for non-federally regulated plumbing fittings, including commercial pre-rinse spray valves.

2019 California Plumbing Code

Title 24, Part 5 of the CCR, establishes the California Plumbing Code. The California Plumbing Code sets forth efficiency standards (i.e., maximum flow rates) for all new federally regulated plumbing fittings and fixtures, including showerheads and lavatory faucets. The 2019 California Plumbing Code, which is an update to the 2016 Plumbing Code, was published by the California Building Standards Commission (CBSC) on July 1, 2019 and went into effect on January 1, 2020. The Carlsbad Municipal Code (CMC) adopted the 2019 California Plumbing Code as Chapter 18.16 Plumbing Code of its Title 18 Building Codes and Regulations on November 12, 2019.

Title 24, Building Standards Code and California Green Building Standards Code

The city has implemented the California Building Standards Code as part of their CMC (City of Carlsbad, 2019a). Part 11 of Title 24, the state code that regulates the design and construction of buildings, establishes the California Green Building Standards (CALGreen) Code. The CALGreen Code sets forth voluntary and mandatory standards related to water conservation. The mandatory measures establish minimum baselines that must be met in order for a building to be approved. The voluntary measures can be adopted by local jurisdictions for greater efficiency. For example, under the CALGreen Code, toilets are limited to 1.28 gallons per flush. Maximum flow rates for faucets are also established at 2.5 gpm at 80 pounds psi for showerheads.

2016 California Building Energy Efficiency Standards Code

The city requires all residential and commercial construction projects to comply with the current California Building Energy Efficiency Standards. The CBSC first established Energy Efficiency Standards for California in 1978, in response to a legislative mandate to reduce California's energy consumption. The standards, which are contained in Title 24, Part 6 (California Energy Code) of the CCR are updated periodically by the California Energy Commission (CEC) to allow consideration and possible incorporation of new energy efficiency technologies and methods. The standards regulate energy consumed in nonresidential buildings for heating, cooling, ventilation, water heating, and lighting. Title 24 is implemented through the local planning and permit process and therefore components of the proposed project requiring building permits would be required to comply with Title 24. Title 24 is updated approximately every 3 years. The latest version was adopted in January 2016, and continues to improve upon the standards for new construction of, and additions and alterations to, residential and nonresidential buildings. (CEC, 2016b)

SBX7-7 Requirements

The Water Conservation Bill of 2009 (SBX7-7) was one of four policy bills enacted as part of the November 2009 Comprehensive Water Package (Special Session Policy Bills and Bond Summary). SBX7-7 provides the regulatory framework to support the statewide reduction in urban per capita water use described in the 20 by 2020 Water Conservation Plan. This bill

requires that agencies achieve a 20% reduction in potable water use by 2020. As part of the 20 by 2020 plan, all retail water agencies in the state are required to detail how they plan to meet the mandatory reductions through their UWMP. Retail water agencies who have either 3,000 or more customers or provide 3,000 AFY or more of water, are required to be in compliance to SBX7-7. Consistent with SBX7-7, each water supplier must determine and report its existing baseline water consumption and establish future water use targets in gallons per capita per day.

Local

The section below provides a summary of the city's ordinances, regulations, and policies that are related to the provision of public services and are applicable to the proposed project. Where provisions are required by code or ordinance (e.g., the CMC and the City of Carlsbad Engineering Standards) it is presumed that the proposed project would adhere to the requirements.

City of Carlsbad General Plan

The city's General Plan contains goals and policies that address utilities and service systems in the city. Specifically, policies in the Sustainability Element are applicable as summarized below. **Table 4.10-2, *General Plan Consistency Determination Summary*** (provided in Section 4.10.4, *Project Impact Analysis* of the Land Use and Planning section) provides a summary of the applicable General Plan land use goals and policies, including those for utilities and service systems, and a project consistency discussion for each. The specific goals and policies listed in this section are addressed in the Table 4.10-2 consistency analysis. As indicated therein, the proposed project would be consistent the applicable sustainability goals and policies of the General Plan.

Policies

Climate Change and Greenhouse Gas

Policy 9-P.2 Continue efforts to decrease use of energy and fossil fuel consumption in municipal operations, including transportation, waste reduction and recycling, and efficient building design and use.

Water Conservation, Recycling, and Supply

Policy 9-P.9 Adopt a construction and demolition waste recycling ordinance that requires, except in unusual circumstances, all construction, demolition and renovation projects meeting a certain size or dollar value, to divert from landfills 100% of all Portland cement concrete and asphalt concrete and an average of at least 50% of all remaining non-hazardous debris from construction, demolition, and renovation projects.

City of Carlsbad Municipal Code – Chapter 18.04 Building Code

Per Chapter 18.04, the 2016 Edition of the California Building Code, Volumes 1 and 2 are thereafter referred to as “the code,” copyrighted by the California Building Standards Commission, two copies of which are on file with the building official at the Faraday Center for public record and inspection, are hereby adopted by reference as the building code of the city of Carlsbad. for regulating the erection, construction, enlargement, alteration, repair, moving,

removal, demolition, conversion, occupancy, equipment, use, height, area, and maintenance of all buildings or structures in the City of Carlsbad, except for changes, additions, deletions and amendments in this chapter, which shall supersede the provisions of said code.

City of Carlsbad Municipal Code – Chapter 18.21 Green Building Standards Code

Per Section 18.21.010, the CMC adopts the 2016 California Green Building Standards (CALGreen) code copyrighted by the California Building Standards Commission, as the Green Building Standards Code of the City of Carlsbad.

CALGreen requires that new buildings reduce water consumption, increase system efficiencies, divert construction waste from landfills, and install low pollutant emitting finish materials. CALGreen has mandatory measures that apply to nonresidential and residential construction. The most recent CALGreen code was adopted in 2013 and became effective in 2014 (Carlsbad, 2019a).

City of Carlsbad Municipal Code – Chapter 6.08, Solid Waste

Chapter 6.08, Solid Waste, outlines policies and regulations regarding solid waste receptacles, recycling, and disposal services for multi-family residential buildings. The applicable requirements are outlined below:

6.08.020 Required solid waste/recyclable materials/green waste handling.

- A. Every person in possession, charge or control of any place or premises in the city in, upon, or from which solid waste and recyclable materials, including green waste and organic waste, are created, produced or accumulated shall:
 - 1. Dispose of such solid waste through the regular solid waste service of the city or its franchisee; and
 - 2. First segregate from solid waste and dispose of recyclable materials, including green waste and, if necessary to comply with Section 6.08.024, organic waste, in recycling, green waste, and organic waste containers, as appropriate; and
 - 3. Pay therefor the fee or fees hereinafter established.
- B. The collection of solid waste shall occur at least once per week.

6.08.022 Requirements for multifamily residential complexes and commercial premises

The responsible person for any multifamily residential complex or commercial premises must do all of the following:

- 1. Provide on-site source separated collection of recyclable materials to the occupants of the complex or premises.
- 2. Provide a sufficient number and type of containers at the property to contain the solid waste generated by the occupants of the complex or premises.

3. Place recycling containers in convenient locations for use by occupants of the property, which means placement of recycling containers adjacent to, or in the immediate vicinity of, solid waste containers in disposal areas. The responsible person must pair recycling containers with solid waste containers of equivalent volume capacity at each disposal area.
4. Educate the occupants of the multifamily residential complex or commercial premises about the recycling services as follows:
 - a. The responsible person must annually distribute recycling program information to all occupants that describes the types of recyclable materials accepted, the location of recyclable materials containers, and the occupant's responsibility to recycle pursuant to this chapter;
 - b. The responsible person must provide occupants with the recycling program information upon their first occupancy or use of the complex or premises; and
 - c. The responsible person must provide occupants with updated recycling program information upon any change in recycling service to the multifamily residential complex or commercial premises.

Occupants of a multifamily residential complex or commercial premises must participate in the recycling program provided by the responsible person by separating recyclable materials from other solid waste and depositing the recyclable materials in the on-site recycling containers.

City of Carlsbad Engineering Standards, Volume 2, Potable and Recycled Water Standards

The *City of Carlsbad Engineering Standards, Volume 2, Potable and Recycled Water Standards*, 2016 Edition identifies the design criteria used in sizing water distribution system piping in the city. These criteria include a minimum desirable static pressure of 60 pounds per square inch (psi) and a maximum desirable static pressure of 125 psi.

Under Peak Hour Demand conditions, minimum residential pressure at any location must not be less than 40 psi. Under a Maximum Day Demand with Fire Flow, a minimum residual pressure of 20 psi must be maintained in the water system.

Ordinance No. CS-347

The City of Carlsbad's Climate Action Plan (CAP) seeks to improve the energy efficiency of residential buildings and establish an ordinance to disclose and conserve energy use in existing buildings. In pursuit of the goals established by the CAP, the city has adopted this residential energy conservation ordinance on March 12, 2019, amending CMC Chapters 18.21 and 18.30.

Applicable requirements include lighting alterations that would include installation of automatic-off vacancy sensors, water heating package consisting of exterior and pipe insulation and upgrading of sinks and showers to meet current CALGreen (Title 24, Part 11 of the California Building Code) standards and implementation of energy efficiency, photovoltaic energy and alternative water heating systems in new and existing residential and nonresidential buildings in order to significantly reduce emissions from these uses. The ordinance is in accordance with, community-wide goals to reduce GHG emissions 49% by 2035 to help achieve statewide reduction targets necessary to reduce impacts from climate change (City of Carlsbad, 2019b).

Construction Waste Management Plan

Section 4.408.1 and Section 5.408.1 of CALGreen Code requires proposed developments to submit a Construction Waste Management Plan (WMP) with submission of the Building Permit or permit issuance application demonstrating how at least 65% of non-hazardous construction debris generated from the proposed project would be recycled and/or salvaged for reuse.

Local Facilities Management Plan Zone 5

The purpose of the LFMP is to provide a plan and financing structure to ensure that utilities and service systems are provided to accommodate development. The LFMP Zone 5 is located in the center of Carlsbad at the intersection of the city's four quadrants and is bounded by I-5 on the west, the city's eastern boundary to the east, and is bisected east to west by Palomar Airport Road and north to south by El Camino Real (City of Carlsbad, 1987). The LFMP is prepared as a requirement of the city's adopted GMP, and in accordance with Chapter 21.90 (Growth Management) of the CMC and Citywide Facilities and Improvements Plan of 1986. The LFMP provides a phasing schedule to determine approximate threshold years for construction or upgrading various public facilities to maintain compliance with the performance standards adopted in the GMP.

The city monitors development within the zone to ensure Growth Management Standards are maintained. The LFMP also contains general and special conditions of approval to ensure compliance with the performance standards. Utilities and service systems addressed in this section (as required by the GMP) include wastewater, drainage, fire, schools, sewer, and water. Overall, the utilities and service system demands from the project site are presently minimal and all performance standards are currently being met.

City of Carlsbad Climate Action Plan

The City of Carlsbad CAP sets a baseline for GHG emissions, forecasts future emissions, and establishes a long term strategy to reduce emissions. The CAP was prepared concurrently with the city's General Plan and includes actions to carry out the General Plan's goals and policies, consistent with the Community Vision articulated during Envision Carlsbad. The CAP is also correlated with the EIR for the General Plan, with the CAP GHG emissions reduction target synchronized with the EIR. These GHG reductions are consistent with the State's goals to reduce GHG emissions to 1990 levels by 2020 and by 80% below 1990 levels by 2050 (City of Carlsbad, 2015a). To the extent that new GHG reduction requirements are in effect at the time of application for grading or building permits, the project will be required to comply with the effective requirements even if different than what is proposed in the project's planning approvals. Additionally, the CAP has goals and policies related to water conservation, solid waste, energy conservation, which require compliance with CALGreen Code (Title 24, Part 11). The city uses the California Building Code and the new CALGreen Code to review proposed development and renovations, including the CALGreen Code to divert 50% of construction waste from landfills, and install low pollutant-emitting materials (City of Carlsbad, 2015a).

City of Carlsbad Policy No. 64 – Wireless Communication Facilities

In accordance with the Federal Telecommunications Act of 1996, the City adopted Policy No. 64 on September 26, 2017 to guide the public, applicants, boards and commissions, and staff in reviewing the placement, construction, and modification of wireless communication facilities (WCFs). The policy applies to all commercial providers of wireless communication services. It does not apply to amateur (HAM) radio antennas, dish antennas, collocations and/or modifications covered under Federal Communications Commission (FCC) regulations at 47 C.F.R. §§ 1.40001 et seq. and other antennas installed on a residence for an individual's private use. The goal of the policy is to assure WCFs in the City do the following:

- Are reviewed and provided within the parameters of law.
- Are encouraged to locate away from residential and other sensitive areas, except as allowed by Section A. of this policy- Location Guidelines for the Placement of WCFs.
- Represent the fewest possible facilities necessary to complete a network without discriminating against providers of functionally equivalent services or prohibiting the provision of wireless services.
- Use, as much as possible, "stealth" techniques so they are not seen or easily noticed.
- Operate consistent with Carlsbad's quality of life.

4.15.3 Thresholds and Methodology

Thresholds

A significant impact would occur to utilities and service systems if the proposed project would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.
- 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.
- Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Methodology

The potential for adverse impacts on utilities and service systems has been evaluated based on the information concerning current service levels and the ability of the service providers to accommodate the increased demand created by the proposed project.

4.15.4 Project Impact Analysis

Impact 4.15-1: Would the proposed project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Water Facilities

The proposed project would increase demand on water infrastructure in the area. The project is within the CMWD service area. As previously discussed under Existing Conditions, the CMWD's water supply includes potable and recycled water. The analysis of water conveyance infrastructure capacity to serve the proposed project (including infrastructure for potable, recycled and fire flow needs) is based on the Private Water System Analysis (Appendix K.1) prepared by Dexter Wilson Engineering, Inc., to determine the water infrastructure needs of the proposed project.

Water service for the proposed project would consist of two separate systems: one for private domestic water service, and the other for private fire protection service. Therefore, development of the proposed project would require new pipeline connections to be extended from the project site to existing facilities immediately adjacent to the site within Aviara Parkway and Laurel Tree Lane. The proposed project would obtain potable water service from the existing 375 Zone system. Additionally, the proposed project's new pipeline connections would be developed in accordance with California Plumbing Code 2016.

The proposed potable water infrastructure would be located within the project site boundaries, and the impacts associated with these improvements are included as part of the overall project grading and development footprint (refer to Figure 2 in Appendix K.1 of this EIR). The proposed on-site private domestic water system would establish a new domestic service lateral and set a new domestic meter and backflow preventer for each of the parcels; one lateral, meter, and backflow for the West Parcel, and one lateral, meter, and backflow for the East Parcel. It is estimated that the public service lateral, meter, and backflow preventer would be 4 inches in diameter for the West Parcel and 3 inches in diameter for the East Parcel. The aforementioned laterals, all proposed within the project site, would be connected through existing infrastructure on Aviara Parkway and Laurel Tree Lane to the existing 375 Zone system hydraulic grade line by the D3 Storage Tank at the intersection of Poinsettia Lane and Black Rail Road, located approximately 1 mile southeast of the project site. Additionally, all fire hydrants on-site would be connected to a private fire protection water system; two connections to the existing 18-inch public water line in Aviara Parkway for the West Parcel and one connection to the existing 8-inch public water line in Laurel Tree Lane as well as a second connection to the existing 18-inch public water line in Aviara Parkway for the East Parcel.

Under a maximum day demand with fire flow, a minimum residual pressure of 20 psi must be maintained in the water system. The *Private Water System Analysis* (Appendix K.1 of this EIR), indicates that 3,000 gpm fire flow can be provided on-site with a minimum residual pressure of

20 psi. Under peak hour demand, the minimum residual pressure on the project site would be 60 psi.

The Private Water System Analysis (Appendix K.1 of this EIR) concluded that available flow and pressure from the CMWD water distribution system is adequate to meet the domestic water service needs, including fire flow requirements, of the proposed project. Additionally, off-site water infrastructure improvements would not result in significant physical impacts because the area affected has been graded and paved as a roadway (i.e., Aviara Parkway). Therefore, no additional environmental impacts are expected to occur with the proposed improvements of the new or expanded water systems and impacts would be **less than significant**.

Wastewater Facilities

The analysis of project-related wastewater conveyance infrastructure impacts is based on the Offsite Sewer Analysis prepared by Dexter Wilson Engineering, Inc. (Appendix K.2). The analysis follows city sewer capacity analysis (SCA) protocols and identifies the existing sewer lines that would serve the proposed project, the peak wastewater discharge rates, whether the sewer lines can accommodate proposed project flows without additional capital facility improvements, and where along the proposed sewer lines the proposed project may connect to. Note that the results of the Offsite Sewer Analysis include design parameters and conditions that must all be met before connection to the city sewer system would be permitted by the city.

Sewer improvements would be required to service the proposed project site as follows. As shown on Figure 2, *Existing and Proposed Sewer Facilities*, of Appendix K.2, the on-site sewer system would connect to the existing off-site 8-inch sewer line located in Aviara Parkway and an 8-inch gravity line in Laurel Tree Lane to the south and east of the East Parcel. The West Parcel is not able to gravity flow its wastewater to this existing infrastructure due to site elevations. Therefore, the proposed project would need to install a private sewer lift station within the West Parcel to provide sewer service to the proposed project. However, no off-site gravity sewer improvements are needed to provide sewer service to the proposed project. Therefore, the existing off-site sewer facilities are adequately sized to accommodate the project's wastewater flows and the proposed on-site sewer infrastructure would be located entirely within the project site boundaries. Thus, the impacts associated with the on-site sewer facility improvements are included as part of the overall grading and development footprint. With regard to on-site sewer facilities, no additional environmental impacts are expected to occur with the private wastewater systems and as a result, impacts would be **less than significant**. The following discussion addresses the adequacy of the off-site gravity sewer line in Aviara Parkway to service the project site.

Exhibit A, *Gravity Sewer Access Hole and Pipe Diagram*, in Appendix D, Sewer System Computer Modeling Results, of Appendix K.2 of this EIR, presents the sewer access hole and pipe diagram and the public sewer system within the proposed project's sub-basin. The wastewater from the West Parcel of the proposed project would be conveyed to Aviara Parkway via a private on-site sewer lift station that would enter the gravity sewer line in Aviara Parkway. The 120 gpm lift station flow from the West Parcel was inputted at the most possible upstream location, while the wastewater from the East Parcel of the proposed project would enter the

gravity sewer line at another location. The wastewater would then be conveyed to the 30-inch-diameter Vallecitos Interceptor in Palomar Airport Road approximately 600 feet north of the project site. The Vallecitos Interceptor in Palomar Airport Road joins other corresponding large-diameter gravity sewer interceptors before flowing west to the Encina Treatment Plant.

The results of the sewer flow analysis indicate that the sewer lines between the project site and the pipeline in Palomar Airport Road have a maximum rate capacity of 0.19 under existing peak flows and 0.39 under existing peak flows with the proposed project included. These flows are in 8-inch-diameter gravity sewer lines in Aviara Parkway where capacity ratios of up to 0.50 are acceptable per the city's Engineering Standards and Sewer Master Plan. Based on the sewer analysis conducted for the proposed project, the existing gravity sewer lines downstream of the project site can accommodate the wastewater flows from the proposed project (Appendix K.2 of this EIR). No additional environmental impacts are expected to occur with the proposed wastewater systems and as a result, impacts would be **less than significant**.

Storm Water Drainage Facilities

For a discussion on the potential for impacts associated with the proposed project and storm water drainage, refer to Section 4.9, *Hydrology and Water Quality*, of this EIR. As noted in that section, the proposed project would increase runoff and be responsible for the construction of drainage improvements on-site to service the site, connecting to the existing facilities within the project vicinity. Proposed drainage improvements would be located within the project site boundaries, and the impacts associated with these improvements are included as part of the overall project grading and development footprint. No off-site improvements or upgrades to existing storm water facilities are required to provide service to the project site because all required and proposed drainage improvements are located within the project site boundaries. Therefore, no additional environmental impacts are expected to occur with proposed improvements of new or expanded storm water drainage facilities and impacts are considered **less than significant**.

Electricity and Natural Gas Facilities

This analysis addresses the proposed project's potential energy usage, including electricity and natural gas. Energy and natural gas consumption during both construction and operation are assessed in Section 4.5 *Energy*, of this EIR. Calculations are provided in Appendix F.2 of this EIR, and are based on the same assumptions as are used in Section 4.7, *Greenhouse Gas Emissions*, of this EIR.

As noted in those sections, the proposed project would increase demand for electricity and natural gas requiring the construction of on-site infrastructure and tie ins into existing facilities in the project area. Because the site is currently served for electricity and natural gas, modifications to the on-site infrastructure would be required within the project boundaries as part of the development. Any construction of electrical and/or natural gas lines on-site associated with future development would occur in accordance with the city's permitting processes and construction standards to avoid or minimize impacts on environmentally sensitive habitat areas and landforms

through siting, grading or excavation, and erosion. Therefore, impacts associated with electricity and natural gas facilities from buildout of the proposed project would be **less than significant**.

Telecommunications Facilities

Communication systems for telephone, internet, and cable television are serviced throughout the city by utility providers such as Cox, Spectrum, AT&T, and other private utility companies. The proposed project would increase demand for telecommunications services requiring the construction of on-site infrastructure and tie ins into existing facilities in the project area. Future siting of communications infrastructure would be in accordance with the Federal Telecommunications Act of 1996 preserving the city's ability to regulate wireless communications facilities, including the city's Location Guidelines for Placement of Wireless Communications Facilities, which seek to minimize visual impacts (City of Carlsbad, 2017). Any construction of communications systems associated with future development would occur in accordance with the city's permitting processes and construction standards to avoid or minimize impacts on environmentally sensitive habitat areas and landforms through siting, grading or excavation, and erosion. Therefore, impacts associated with communications facilities from buildout of the proposed project would be **less than significant**.

Impact 4.15-2: Would the proposed project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

The analysis of water supply is focused on the nature and magnitude of the change in levels of water use from the buildout of the proposed project. The primary resources used for this analysis include the CMWD 2015 UWMP, information provided by the CMWD, and the Private Water Analysis for Aviara Apartments (Appendix K.1) prepared by Dexter Wilson Engineering, Inc. The proposed project's demand for water resources was evaluated in relation to CMWD's ability to supply water pursuant to its approved 2015 UWMP under normal, single dry, and multiple dry years in 5-year increments over a 20-year period, and includes water demand projections for potable water, additional water demand associated with water losses and firefighting. Potable and recycled water demand associated with the proposed project was calculated based on water use rates from CMWD.

The expected water demand for the proposed project was estimated using water demand criteria from the city's Engineering Standards. **Table 4.15-4, *Water Demand for the Proposed Project***, presents the estimated on-site water demand for the proposed project. As shown in Table 4.15-4, the estimated water demand for the proposed project is 82,250 gpd, according to the *Private Water System Analysis* (Appendix K.1 of this EIR), prepared for the proposed project. The peak hour demand would be 8,000 gpm (Dexter Wilson Engineering, Inc., 2019a, Appendix K.1 of this EIR).

**TABLE 4.15-4
 WATER DEMAND FOR THE PROPOSED PROJECT**

Land Use	Dwelling Units	Demand Factor	Average Demand (gpd)
Multi-Family Residential (West Parcel)	259	250 gpd/du	64,750
Multi-Family Residential (East Parcel)	70	250 gpd/du	17,500
Total			82,250

NOTES:

du=dwelling unit; gpd=gallons per day

SOURCE: Dexter Wilson Engineering, Inc., 2019a

The proposed project would obtain potable water service from the existing 375 Zone system.

As previously discussed, the project site is located within the CMWD service area. According to the 2015 CMWD UWMP, the CMWD expects to have adequate water supply available to meet the projected demand within its jurisdictions to 2040, due to future improvements and/or meeting SB X7-7 water conservation goals. These improvements may include the need to utilize local groundwater, surface water supplies, and desalinated seawater. Beginning in late 2015, desalinated seawater water made available via the Carlsbad Desalination Plant has been blended into the treated water purchased from SDCWA (CMWD, 2016). This identified water source, paired with already planned improvements to facilities and conservation measures at the federal, state, and local level, would yield an adequate supply of water for the proposed project. Based on these considerations, the proposed project would have sufficient water supplies available to serve the proposed project from existing entitlements and resources. The impact would be **less than significant**.

Impact 4.15-3: Would the proposed project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?

The average sewage generation for the proposed project was estimated using sewer generation rates from the city’s Engineering Standards and 2012 Sewer Master Plan (City of Carlsbad, 2012). As shown in **Table 4.15-5, Average Sewer Flow from Proposed Project**, the estimated average sewer generation for the proposed project is 72,380 gpd. As shown in **Table 4.15-6, Peak Sewer Flow from Proposed Project**, the estimated peak sewer generation for the proposed project is 180,950 gpd. The 2012 Sewer Master Plan accounts for a unit flow factor for high-density residential development (apartments) of 176 gpd/du as the unit flow generation factor as a basis for projecting the average sewer flows for residential use (Dexter Wilson Engineering, Inc., 2019b, Appendix K.2 of this EIR). The city’s Sewer Master Plan unit factor would have yielded a total average flow of 57,904 GPD. However, a sewer generation rate of 220 gpd/du was used in the *Offsite Sewer Analysis* (Appendix K.2 of this EIR) in order to remain conservative.

**TABLE 4.15-5
 AVERAGE SEWER FLOW FROM PROPOSED PROJECT**

Land Use	Quantity	Sewer Generation	Total Average Flow (gpd)
Multi-Family Residential (West Parcel)	259	220 gpd/du	56,980
Multi-Family Residential (East Parcel)	70	220 gpd/du	15,400
Total			72,380

NOTES:
 du=dwelling unit; gpd=gallons per day
 SOURCE: Dexter Wilson Engineering, Inc., 2019b

**TABLE 4.15-6
 PEAK SEWER FLOW FROM PROPOSED PROJECT**

Land Use	Average Flow (gpd)	Peaking Factor	Peak Flow (gpd)
Multi-Family Residential (West Parcel)	56,980	2.5	142,450
Multi-Family Residential (East Parcel)	15,400	2.5	38,500
Total			180,950

NOTES:
 gpd=gallons per day
 SOURCE: Dexter Wilson Engineering, Inc., 2019b

As previously indicated under Existing Conditions, the project site is located entirely within the city sewer services area for which wastewater treatment is provided by the EWPCF. The EWPCF is owned and operated by EWA and treats an average flow of 20 mgd wastewater but has the capacity to treat over 40 mgd (Carlsbad, 2016). As indicated in Table 4.15-5, the proposed project's total average wastewater flows would total 72,380 gpd or 0.07238 mgd, which represents 0.36% of the EWPCF average flow of 20 mgd and approximately 0.18% of the EWPCF's current design capacity of 40 mgd. As indicated in Table 4.15-6, the proposed project's total peak wastewater flows would total 180,950 gpd or 0.18095 mgd, which represents 0.90% of the EWPCF average flow of 20 mgd and approximately 0.45% of the EWPCF's current design capacity of 40 mgd.

As previously stated, the EWPCF currently receives flows of approximately 20 mgd; this represents approximately 50% of its capacity and leaves approximately 20 mgd of remaining capacity. The proposed project's contribution of approximately 0.07238 mgd average flow and 0.18095 mgd peak flow of wastewater represents a negligible increase in the wastewater volumes treated at the EWPCF. Additionally, according to the Sewer Study Summary provided in Appendix K.2, the sewer system analysis conducted for the proposed project indicates that the existing gravity sewer lines downstream of the project site can accommodate the wastewater flows for the project (Dexter Wilson Engineering Inc., 2019b, Appendix K.2 of this EIR). Therefore, the impact to the wastewater treatment provider would be **less than significant**.

Impact 4.15-4: Would the proposed project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

The analysis of the proposed project's impact on landfill facilities identifies solid waste that is anticipated to be generated during construction and operation of the proposed project. The analysis identifies the projected amount of non-hazardous construction debris and operational solid waste that would be generated from implementation of the proposed project and the amount that would be disposed of in landfills after compliance with recycling/diversion requirements. The results are compared with the available capacity of the landfill serving the area surrounding the project site to assess the significance of the proposed project's solid waste generation during construction and buildout. Impacts would be considered significant if the proposed project would result in a substantial increase in solid waste that would affect landfill capacity, such that a new or expanded landfill facility would be required, which could result in a significant impact on the environment.

The project site would be served by the Otay Landfill and Sycamore Landfill. As noted above under Existing Conditions, both of the landfill facilities have sufficient capacity to serve the city through 2030 and 2042, respectively. The proposed project would generate a small fraction of the daily allowed tonnage at either of these facilities and would be subject to city and state requirements regarding the diversion of solid waste from landfills. Per the County of San Diego Five-Year Review Report of the County Integrated Waste Management Plan (County of San Diego, 2017), there is more than 15 years of solid waste disposal capacity in San Diego County, as required by state law. It is likely that changes in regulations will occur that would decrease the need for landfill capacity through new recycling measures (City of Carlsbad, 2014b). Additionally, the proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste to aid in the attainment of solid waste reduction goals, as noted below under Impact 4.15-5. Therefore, the impact to solid waste infrastructure would be **less than significant**.

Impact 4.15-5: Would the proposed project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The analysis of the proposed project and its impact related to solid waste regulations identifies the non-hazardous solid waste that is anticipated to be generated during construction and operation of the proposed project and how the proposed project would dispose of that solid waste. Impacts would be considered significant if implementation of the proposed project would not comply or would be in conflict with federal state, or local statutes or regulations related to solid waste.

The project applicant would contract with a licensed waste hauler that would deposit all solid waste at a permitted solid waste facility and therefore, would comply with federal, state, and local statutes and regulations related to solid waste such as, AB 939, AB 1327, SB 1374, AB 341, and AB 1826, which are discussed in detail in the Regulatory Setting of this section. Additionally, the project would be conditioned to comply with CALGreen's Construction WMP requirement to demonstrate that at least 65% of non-hazardous construction debris generated from the proposed project would be recycled and/or salvaged for reuse. The proposed project would comply with

federal, state, and local management and reduction statutes and regulations related to solid waste; thus, impacts would be **less than significant**.

4.15.5 Level of Significance before Mitigation

Implementation of the proposed project would not result in a significant impact on utilities and service systems; therefore, no mitigation measures are proposed.

4.15.6 Environmental Mitigation Measures

No mitigation measures are proposed, as no significant impacts have been identified.

4.15.7 Level of Significance after Mitigation

No significant impacts on utilities and service systems have been identified.

4.16 Wildfire

This section addresses the potential impacts of the proposed project related to wildfire; a wildfire is an uncontrolled fire in an area of combustible vegetation generally occurring in rural areas and wildland-urban interface fires that result in disastrous property losses (CAL FIRE, 2019). The analysis in this section is based on information obtained from the California Department of Forestry and Fire Protection (CAL FIRE) as well as City of Carlsbad policy documents and regulations, including: the City of Carlsbad Landscape Manual (City of Carlsbad, 2016), General Plan (City of Carlsbad, 2015a and 2015b), and the Carlsbad Municipal Code (CMC).

Additional project-specific information was obtained from the documents submitted in support of the project application, including the Conceptual Fuel Modification Plan (Firesafe, 2018a) and the Fire Master Plan (Firesafe, 2018b). Both the Conceptual Fuel Modification Plan and the Fire Master Plan have been approved by the City of Carlsbad Fire Department (March 29, 2018, and August 1, 2018, respectively). Both of the fire plans are provided in Appendices L.1 and L.2 to this EIR, respectively (at a reduced 11x17 size). This appendix also includes a copy of the City of Carlsbad Fire Department approval letter for the Alternative Materials and Methods Request (City of Carlsbad Fire Department, 2018), which is embedded in the Fire Master Plan but is not legible in the 11x17 figure size. Full size versions of these plans are available for review at the City of Carlsbad Fire Prevention Division.

4.16.1 Existing Conditions

Fire Environment

Fire environments are dynamic systems and include many types of environmental factors and site characteristics. Fires can occur in any environment where conditions are conducive to ignition and fire movement. The three major components of fire environment are vegetation (fuels), climate, and topography. The state of each of these components and their interactions with each other determines the potential characteristics and behavior of a fire at any given moment. It is important to note that wildland fire may transition to urban fire if structures are receptive to ignition. Understanding the existing wildland vegetation and fuel conditions on and around the project site is necessary to understand the fire environment.

The climate of Southern California, including the project site, has been characterized by fire climatologists as the worst fire climate in the United States with high winds (Santa Ana) occurring during autumn after a 6-month drought period each year (J.E. Keeley, 2004). Meteorological data for the project area is collected from Camp Pendleton. According to 2010-2012 data collected, which is the most current data to be formatted for Atmospheric Dispersion Modeling (AERMOD) system, prevailing winds in the project area blow from the northeast and west at average speeds of 4.6 knots or 5.3 miles per hour (mph) (Camp Pendleton, 2012). Red flag warnings, which call attention to limited weather conditions that may result in extreme burning conditions, occur when a sustained wind average of 15 mph or greater is met, among other conditions (National Weather Service, 2019a)

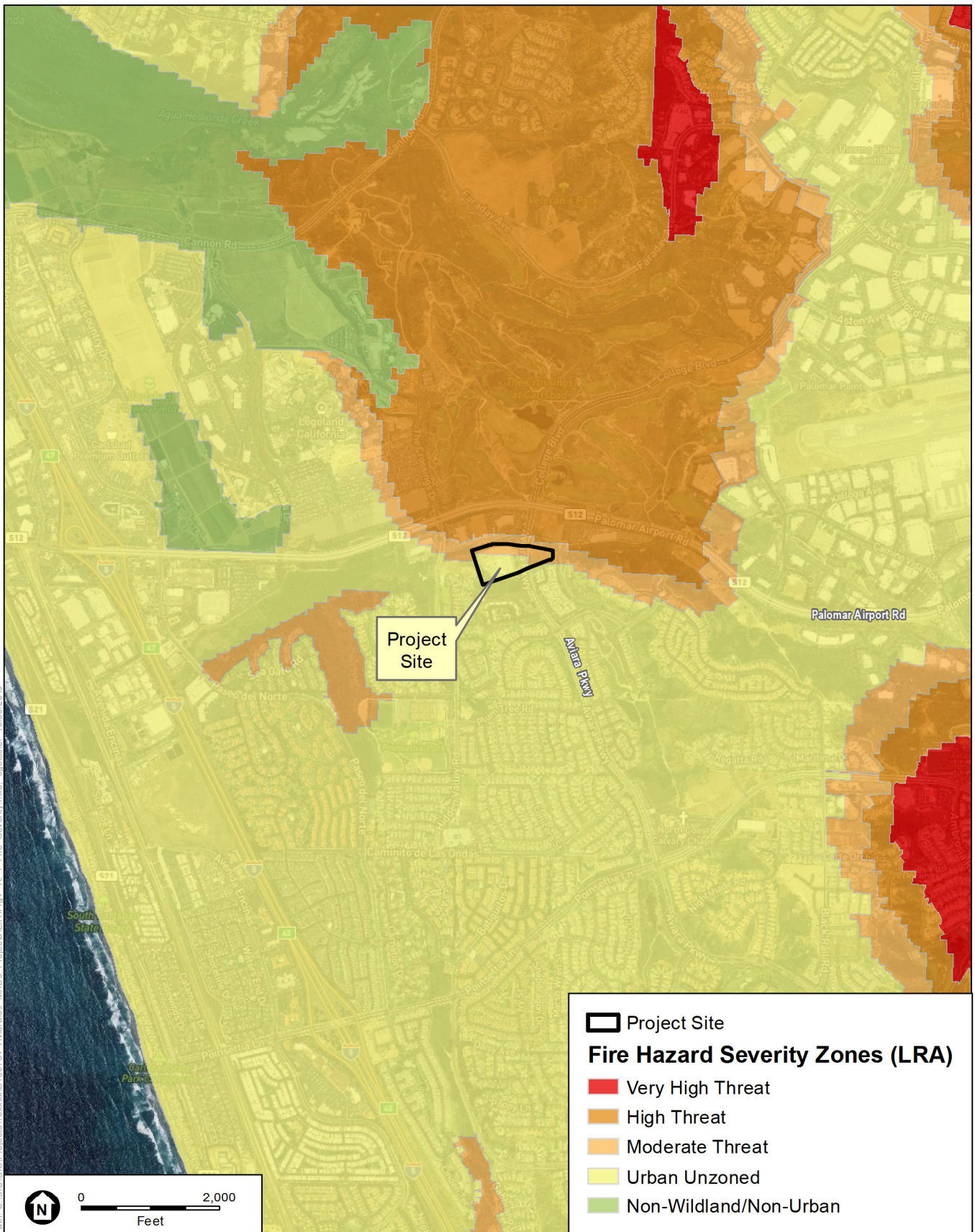
Slope and wind speed can influence the spread of fires. Upslope topography eventually increases the spread rate of the fire in all fuel beds over flat conditions. Chapter 3, *Project Description*, describes the various existing and proposed topographic conditions found in different areas of the project site. The natural topography of the project site previously was altered with development and the construction of Aviara Parkway and Laurel Tree Lane. Both Aviara Parkway and the portion of Laurel Tree Lane closest to Aviara Parkway are elevated above the two parcels that comprise the project site and relatively steep slopes are adjacent to the roadways. The East Parcel is currently undeveloped, vacant land that has previously been graded. Elevations on the East Parcel range between 94 and 111 feet above mean sea level, a total relief of approximately 17 feet. The West Parcel currently supports a flower and flower-supply packaging and wholesale operation and is bordered on the east, south, and west sides by existing slopes designated as open space. Elevations on the West Parcel range from approximately 82 feet to 144 feet above mean sea level, a total relief of approximately 62 feet. Project areas on the West Parcel and East Parcel contain hillside conditions that are defined as slopes greater than 15 feet in height and 15% in slope.

As defined by the Public Resources Code (PRC) 4126, State Responsibility Areas (SRAs) are State and privately-owned forest, watershed, and rangeland for which the primary financial responsibility of preventing and suppressing wildland fires rests with the State. SRAs, by definition, do not include any lands within city limits. Thus, neither the project site nor the surrounding properties are located within a SRA (CAL FIRE, 2007). The city of Carlsbad is wholly within a Local Responsibility Area (LRA); this means that the City of Carlsbad Fire Department has primary fire protection responsibility over the city limits, including the project site (CAL FIRE, 2009).

For SRA's, CAL FIRE identifies Fire Hazard Severity Zones (FHSZs) based on factors such fuel, slope, and fire weather to identify the degree of fire hazard throughout California (e.g., moderate, high, or very high). CAL FIRE only provides recommendations for Very High FHSZs within LRAs. Ultimate responsibility for mapping FHSZs within LRAs lies with the local jurisdiction responsible for fire management and control within the LRA.

State and locally designated FHSZs in and around the project site are shown on **Figure 4.16-1, Fire Hazard Severity Zones**. According to the FHSZ mapping completed by the City of Carlsbad and reflected by the San Diego Geographic Information Source (SanGIS), the northern portion of the project site (both the West Parcel and the East Parcel) is partially within a Moderate FHSZ (SanGIS, 2019) (CAL FIRE, 2009). The remainder of the project site is LRA Urban Unzoned (SanGIS, 2019). Thus, no portion of the project site is within a Very High FHSZ.

North and east of the project site and beyond the 50-foot open space buffer, where commercial developments and associated parking exists, properties are mapped as a High FHSZ. The High Threat FHSZ is approximately 70 feet north from the boundary of the project site. Properties adjacent and immediately surrounding the project site to the south and west are LRA Unzoned (SanGIS, 2019).



SOURCE: SanGIS 2019/CalFire, 2008; Open Street Map, 2019.

Aviara Apartments Project

Figure 4.16-1
Fire Hazard Severity Zones



Project Site Characteristics

The project site is comprised of the two parcels: (1) the East Parcel, which is approximately 2.31 acres, and (2) the West Parcel, which is approximately 7.19 acres. The East Parcel is currently undeveloped, vacant land with native and non-native vegetation, but the site has previously been graded. The West Parcel currently supports a flower and flower-supply packaging and wholesale operation, which includes a 38,000-square-foot warehouse, a 10,000-square-foot loading dock with a 350-square-foot shed, a 50,000-square-foot concrete parking area, and approximately 85,000 square feet of gravel roads and parking area (Arcadis, 2016). The West Parcel is bordered on the east, south, and west sides by existing slopes designated as open space.

The project site is located adjacent to several small and isolated areas of undeveloped vegetated lands. To the north of the project site is a 50-foot buffer zone designated as open space and Encinas Creek, which maintains a Hardline designation under the city's Habitat Management Plan (City of Carlsbad, 2004). This area is vegetated with a mix of native and non-native species and has some steep slopes. Beyond the open space to the north are commercial developments and associated parking adjacent to Palomar Airport Road. To the east of the project site is an existing gym and an undeveloped hillside. To the south of the West Parcel is an undeveloped hillside with native vegetation and residential uses located on the top of the hillside. To the south of the East Parcel is Laurel Tree Lane and multi-family residential developments. To the west of the project site are undeveloped vegetated hillsides designated as open space with single-family residences on top of the undeveloped hillside.

Vegetation (Fuels)

Seven vegetation and land cover types were delineated on-site as part of the biological resources analysis in this EIR (see Section 4.3, *Biological Resources*, and Appendix C.1, Biological Resources Letter Report (Helix Environmental Planning, 2019). Table 4.3-1, *Vegetation Communities and Land Cover Types*, included in Section 4.3, *Biological Resources*, of this EIR, lists the plant communities or land uses observed on the project site as well as the approximate corresponding acreages. Representative photographs of plant communities found within the project site are included in Appendix C.1 of this EIR.

A majority of the project site is developed and/or disturbed habitat. Disturbed habitat or disturbed land includes land cleared of vegetation; land containing a preponderance of non-native plant and disturbance-tolerant species; or land showing signs of past or present usage that removes any capability of providing viable habitat. This classification includes ruderal (weedy) areas dominated by species typical of highly disturbed sites. The eastern and western portions of the project site contain Diegan coastal sage scrub, non-native vegetation, southern mixed chaparral, southern willow scrub, and non-native grassland. These vegetation types are considered highly flammable due to rough or peeling bark, production of large amounts of litter, vegetation that contains oils, resin, wax, or pitch, large amounts of dead material in the plant (City of Carlsbad, 2016). Brush and grassland habitats are highly flammable while other vegetation, such as riparian communities or forest understory, are less flammable due to their perennially higher plant

moisture content, fuel arrangement, ignition resistance, compact structure, and available shading from overstory tree canopies.

Fire History

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources. The fire history data for the area surrounding the project site, which is based on CAL FIRE's California Statewide Fire Map that shows fires since 2011 and CAL FIRE's Fire Resource Assessment Program (FRAP) database, shows that there is generally significant wildfire potential in parts of the northern San Diego County region, in particular when in proximity to open canyons and hillsides, and the farther east one travels, where there is an increased preponderance of open space interspersed among developed uses.

According to available data from CAL FIRE's California Statewide Fire Map, two fires burned within 2 miles of the project site in 1987 and 2014. The 1987 fire was located approximately 2 miles from the East Parcel of the project site in the Palomar Mountain area and burned more than 8,000 acres in 3 days (LA Times, 1987). The Poinsettia Fire (2014) was located less than 1 mile east of the project site generally south of Palomar Airport Road and north of Aviara Parkway. The fire occurred within a 600-acre radius and was determined to have started from a golf club striking a rock at the Omni La Costa Resort and Spa's golf course (Gabbert, 2014).

4.16.2 Regulatory Setting

State

The following state regulations provide an overall context for the consideration of site-specific issues at the project site. When provisions are requirements (e.g., law, code, regulation, or ordinance), it is assumed these regulatory requirements would be adhered to with project implementation, both as they apply to development of the proposed project and related project activities.

California Fire Code (California Code of Regulations Title 24, Part 9)

The California Fire Code is found in Title 24, Part 9 of the CCR, and is also a part of the California Building Code (CBC). The California Fire Code combines the Uniform Fire Code with amendments necessary to address California's unique needs. The California Fire Code (Title 24, Part 9 of the CCR) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The California Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the California Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. The California Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire service features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas.

Typical fire safety requirements of the California Fire Code include: the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and, the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas. High-rise buildings are buildings 75 feet or greater in height measured from the lowest level of fire department vehicle access to the floor of the highest occupiable story. The proposed project does not include the development of high-rise buildings. The combined structure on the West Parcel would be a maximum of 60 feet in height above final grade. The building on the East Parcel would be a maximum of 57 feet in height above final grade. The California Fire Code applies to all occupancies in California, except where more stringent standards have been adopted by local agencies.

California Building Code

The CBC includes regulations that are consistent with nationally recognized standards of good practice, intended to facilitate protection of life and property. Among other things, its regulations address the mitigation of the hazards of fire explosion, management and control of the storage, handling and use of hazardous materials and devices, mitigation of conditions considered hazardous to life or property in the use or occupancy of buildings, and provisions to assist emergency response personnel.

Chapter 7 of the CBC details the materials, systems, and assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area. A Wildland-Urban Interface (WUI) Area is defined in Section 702A as a geographical area identified by the State of California as a FHSZ in accordance with Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. The CBC details the materials, systems, and assemblies used for structural fire resistance and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

Through the building permit process, the City of Carlsbad requires all new buildings to comply with CBC regulations corresponding to the use of fire resistance materials on newly constructed buildings.

Regional

San Diego County Office of Emergency Services

The San Diego County (County) Office of Emergency Services (OES) coordinates the overall County response to disasters. The County OES is responsible for notifying appropriate agencies when a disaster occurs, coordinating all responding agencies, ensuring that resources are available and mobilized, developing plans and procedures for response to and recovery from disasters, and developing and providing preparedness materials for the public. The OES staffs the Operational Area Emergency Operations Center, a central facility that provides regional coordinated emergency response, and also acts as staff to the Unified Disaster Council, its governing body. The Unified Disaster Council, established through a joint powers agreement among all

18 incorporated cities and the County, provides for the coordination of plans and programs countywide to ensure the protection of life and property. The County OES is responsible for maintaining the county emergency plan, currently the 2018 Unified San Diego County Emergency Services Organization (USDCESO) Operational Area Emergency Operations Plan, which facilitates regional mutual aid between the County and all jurisdictions within the County during emergencies (USDCESO, 2018).

Operational Area Emergency Operations Plan

The USDCESO Operational Area Emergency Operations Plan provides information on hazards that the County is susceptible to, including but not limited to, wildfire, flooding, and landslides. The Operational Area Emergency Operations Plan includes 16 functional annexes including fire and rescue mutual aid operations, environmental health operations, communications and warning systems, logistics, and evacuation. The Operational Area Emergency Operations Plan does not designate specific evacuation routes for the County but it does identify major highway interstates and highways are identified as primary evacuation routes. The Evacuation Annex (Annex Q) is intended to be used as a template for the development of other jurisdictional evacuation plans and will support or supplement the evacuation plans prepared and maintained by each local jurisdiction. Annex Q outlines strategies, procedures, recommendations and organizational structures that can be used to implement a coordinated evacuation effort in the County Operational Area, which generally would be developed by emergency responders in the event of an emergency (USDCESO, 2018).

Annex Q recognizes that wildfires may travel fast and quickly develop into emergency situations. Therefore, Annex Q recommends advanced warnings communicated to the public as soon as possible. Information should include preparedness actions such as securing property, assembling disaster supplies, refueling vehicles, and the identification of evacuation routes. Emergency responders must be prepared to make evacuation announcements via bullhorns, loudspeakers, or via door-to-door notification process as soon as a situation necessitates.

The city is listed in the Operational Area Emergency Operations Plan as a fire mutual aid zone, is included as part of the Community Emergency Response Team program and is listed as an animal shelter provider in case of a disaster (USDCESO, 2018). While the Operational Area Emergency Operations Plan is important in consideration of the overall context in which the project is proposed for development as well as an understanding of the region's emergency response framework, the plan does not include any specific policies or provisions that require a consistency analysis. This plan does not include specific environmental protection and mitigating policies applicable to the project.

Local

The section below provides a summary of the city's ordinances, regulations, and policies applicable to the proposed project. Where provisions are required by code or ordinance (e.g., the CMC) it is presumed that the proposed project would adhere to the requirements.

Carlsbad Municipal Code Fire Prevention Code 17.04

Local fire related codes are included in Chapter 17.04, Fire Prevention Code, of the CMC. The purpose of the Fire Prevention Code is to establish minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety and general welfare from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations. The Fire Prevention Code incorporates by reference the 2019 California Fire Code, which is developed and updated every 3 years by the California Building Standards Commission. The 2019 California Fire Code went into effect on January 1, 2020. Per Ordinance No. CS-363, the city adopts the 2019 California Fire Code provisions for emergency planning and preparedness, building services and systems, egress, fire and smoke protection features, interior finish, decorative materials and furnishings, flammable finishes, fumigation and insecticidal fogging, fire safety during construction and demolition, and combustible fibers (City of Carlsbad, 2020).

All new development within the city is required to comply with the Fire Prevention Code.

City of Carlsbad General Plan Chapter 6, Public Safety

In September 2015, an update to the city's General Plan was approved. The General Plan's Public Safety Element applies specifically to wildfire. The following goals and policies in the Public Safety Element are applicable:

Goals

6-G.1 Minimize injury, loss of life, and damage to property resulting from fire, flood, hazardous material release, or seismic disasters.

Police, Fire and Emergency Services

6-P.34 Enforce the Uniform Building and Fire codes, adopted by the city, to provide fire protection standards for all existing and proposed structures.

6-P.35 When future development is proposed to be intermixed with wildlands and/or adjacent to wildlands, require applicants to comply with the city's adopted Landscape Manual, which includes requirements related to fire protection.

In general, the proposed project is consistent with this goal and related policies. The California Fire Code is found in Title 24, Part 9 of the CCR, and is also a part of the CBC. The California Fire Code combines the Uniform Fire Code with amendments necessary to address California's unique needs. The city requires that all development meet the latest standards of the CBC, which includes identification of slope stability and factor of safety minimum requirements. The proposed development associated with the proposed project, including off-site improvements, would be in accordance with the city's grading permit and building code requirements which are also consistent with the most recent version of the CBC.

The project also has complied with the City Landscape Manual through the development of a project-specific Fire Master Plan which provides fire lane design features, emergency access

design, and street width dimensions. A Conceptual Fuel Modification Plan (Firesafe, 2018a) has also been prepared for the project. Both the Conceptual Fuel Modification Plan and the Fire Master Plan have been approved by the City of Carlsbad Fire Department (March 29, 2018, and August 1, 2018, respectively). As a result, the proposed project and the project-specific fire planning efforts are consistent with the directives of the General Plan related to fire risk.

In addition, according to Section 6.9, Emergency Preparedness, of the city's Public Safety Element, the city is a participant in the USDCESO Operational Area Emergency Operations Plan that contains 16 annexes, of which, Annex Q provides guidelines to identify evacuation routes (City of Carlsbad, 2015a) (USDCESO, 2018). This is an area-wide emergency response and operations plan, the implementation of which would not be obstructed by the proposed project, as further detailed in the impact analysis provided in response to Impact 4.16-1, which is contained in Section 4.16.4, *Project Impact Analysis*.

City of Carlsbad Landscape Manual Policies and Requirements

The city's Landscape Manual Policies and Requirements (Landscape Manual) (City of Carlsbad, 2016) applies to all public and private development requiring discretionary or development permits. The proposed project is required to comply with the provisions of the Landscape Manual with respect to planting, irrigation, water conservation, streetscape, slope revegetation/erosion control, and fire protection. The environmental impact analysis contained in Section 4.16.4, *Project Impact Analysis*, contains information about how the project has complied with the provisions of the Landscape Manual. Specifically, the analysis addressing Impact 4.16-1 describes the Fire Master Plan that has been prepared for the project; the Fire Master Plan provides fire lane design features, emergency access design, and street width dimensions and was approved by the city on August 1, 2018 (see Appendix L.2).

City of Carlsbad Hazard Mitigation Plan

The City of Carlsbad's 2018 Hazard Mitigation Plan (HAZMIT Plan) is included in the county's Multi-Jurisdictional HAZMIT Plan. The County's plan identifies specific risks for the county and provides methods to help minimize damage caused by natural and manmade disasters. The list of hazards profiled for the County includes wildfire/structure fire, flood, coastal storms/erosion/tsunami, earthquake/liquefaction, rain-induced landslide, dam failure, hazardous materials incidents, nuclear materials release, and terrorism. Similar to the county, the city identifies the top hazards threatening their jurisdiction in their 2018 Hazard Mitigation Plan (County, 2018). The city reviewed a set of jurisdictional-level hazard maps including detailed critical facility information and localized potential hazard exposure/loss estimates to help identify those hazards.

The city's HAZMIT Plan has specific hazard mitigation goals, objectives and related potential actions. The goals and objectives were developed by considering the risk assessment findings, localized hazard identification and loss/exposure estimates, and an analysis of the jurisdiction's current capabilities assessment. The HAZMIT Plan's preliminary goals, objectives and actions were developed to represent a vision of long term hazard reduction or enhancement of capabilities (County, 2018).

The following goals, objectives, and actions in the city's Hazard Mitigation Plan are applicable:

Goal

- 5: Reduce the possibility of damage and losses to existing assets, including people, critical facilities/infrastructure, and public facilities due to structural fire/wildfire.

Objectives

- 5.A: Develop a comprehensive approach to reducing the possibility of damage and losses due to structural fire/wildfire.
- 5.B: Coordinate with and support existing efforts to mitigate structural fire/wildfire.

Actions

- 5.A.1: Update structural fire/wildfire response actions in Emergency Operations Plan (EOP) and/or Wildland fire plans.
- 5.A.4: Participate in amendments to Fire Protection programs, policies, and requirements; ref. Section IV.F. City Landscape Manual.

In general, the proposed project is consistent with these goals, objectives, and actions. These directives are city-wide in nature, rather than providing specific measure or requirements that would apply to the proposed project. However, the project generally complies with the HAZMIT Plan by complying with the City Landscape Manual through the development of a project-specific Fire Master Plan which provides fire lane design features, emergency access design, and street width dimensions. As well, a Conceptual Fuel Modification Plan (Firesafe, 2018a) has also been prepared for the project. Both the Conceptual Fuel Modification Plan and the Fire Master Plan have been approved by the City of Carlsbad Fire Department (March 29, 2018, and August 1, 2018, respectively). As a result, the proposed project and the project-specific fire planning efforts are consistent with Goal 5 of the HAZMIT Plan which directs that the possibility of damage and losses to assets, including people, be reduced.

4.16.3 Thresholds and Methodology

Thresholds

A significant wildfire impact would occur if the proposed project would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. To determine whether this overarching threshold is reached, the project impact analysis in this section considers the specific questions listed in Appendix G of the CEQA Guidelines.

Specifically, for a project located in or near SRAs or lands classified as Very High FHSZ, a significant wildfire impact would occur if the proposed project would:

- Substantially impair an adopted emergency response plan or emergency evacuation plan.
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

It is important to note that none of the project site is included in an SRA. Further, the project site is not within a Very High FHSZ. However, lands mapped as Very High FHSZ are located less than 1 mile to the north, northeast, and southeast of the project site. While this location is not directly adjacent, a thorough analysis of the potential issue areas under consideration for wildfire is included herein to provide full disclosure to the public and City of Carlsbad decision-makers.

Methodology

The proposed project's potential impacts associated with wildfire are evaluated using a variety of resources, including SanGIS maps showing FHSZs, the FRAP database, and fire history. Vegetation data from the Biological Resources Letter Report for the proposed project was also referred to, and is provided in Appendix C.1 of this EIR.

The City of Carlsbad 2016 Landscape Manual lists preparation of a California Fire and Building Code-compliant "Fire Protection Plan" as part of their fire protection requirements for projects within a Very High FHSZ (City of Carlsbad, 2016). The "Fire Protection Plan" includes fire hydrant locations, yard setbacks, fuel modification, street widths dimensions, emergency access, and/or any other project modification to protect the development from fire hazards or as required or modified by the Fire Code Official (City of Carlsbad, 2016). Although the project site is not within a Very High FHSZ, a Conceptual Fuel Modification Plan (Firesafe, 2018a) and a Fire Master Plan for the project (Firesafe, 2018b) were prepared and submitted to the City of Carlsbad Fire Department to show how the project would be designed to minimize wildfire risk. According to communication with Hazard Reduction Specialist, Monty Kalin, with the city's Fire Prevention Division, "a Fire Protection Plan was not required, however the Fire Master Plan addressed the core items of a Fire Protection Plan" and fully addresses wildfire and fire safety hazard issues related to the project (Kalin, 2019).

Through the City of Carlsbad Fire Department review process, Alternate Materials and Methods were approved in accordance with California Fire Code Section 104.9 Alternate Materials and Methods (City of Carlsbad Fire Department, 2018). Both the Conceptual Fuel Modification Plan and the Fire Master Plan have been approved by the City of Carlsbad Fire Department (March 29, 2018, and August 1, 2018, respectively). Both of the fire plans are provided in Appendix L, and form the basis for the analysis within this section.

4.16.4 Project Impact Analysis

Impact 4.16-1: Would the proposed project substantially impair an adopted emergency response plan or emergency evacuation plan?

As described in detail in Section 3.9, *Hazards and Hazardous Materials*, under Impact 4.8-5, the proposed project would have a less-than-significant impact on emergency response and

evacuation plans during construction and operation. As described in Section 4.16-2, *Regulatory Setting*, under local regulations, the City of Carlsbad has adopted the Operational Area Emergency Operations Plan as its emergency response and evacuation plan (City of Carlsbad, 2015a). However, as previously described in 4.16-2, *Regulatory Setting*, the Operational Area Emergency Operations Plan does not designate specific evacuation routes in the County, nor project area. As stated in the Operational Area Emergency Operations Plan, evacuation routes are to be developed by emergency responders in the event of an emergency. The Operational Area Emergency Operations Plan identifies the major interstates, highways, and prime arterials within San Diego County as primary evacuation routes. The project site is accessed by Aviara Parkway, which is not a designated evacuation route, however, it is identified in the city's General Plan Mobility Element as an arterial roadway within the City of Carlsbad. The closest evacuation route to the project site, as identified by the Operational Area Emergency Operations Plan, is Interstate 5 (I-5), which is located approximately 1 mile west of the West Parcel boundary and is accessed from the project site through Aviara Parkway, from Palomar Airport Road. Palomar Airport Road is located 0.10 miles to the north of the project site, provides primary access to the project site, is a designated truck route per CMC 10.32.091, and is an arterial roadway within the city (City of Carlsbad, 2015a and 2015c).

During the 28-month construction phase, project activities would be temporary and primarily contained within the project site itself and would not result in significant construction activity along Palomar Airport Road nor the I-5 evacuation route. Limited activities, such as trenching for connections to existing utilities and construction of proposed project driveways, could result in temporary lane closures or lane narrowing on Aviara Parkway. Additionally, construction-related traffic could result in temporary increased travel time due to flagging or stopping of traffic to accommodate trucks entering and exiting the project site during construction. These activities could temporarily affect traffic flow on Aviara Parkway to Palomar Airport Road and thus, to the designated emergency route on I-5 and in the surrounding area. However, as discussed in Section 4.14, *Transportation*, the proposed project would induce a minimal amount of construction related truck trips and would implement traffic control measures that would be used during construction to ensure safety and minimize congestion. In addition, the Applicant would coordinate with and respond to the needs of emergency responders during construction and would not interfere with evacuation routes in the event of an emergency.

Temporary lane closure or narrowing would require city approval through Traffic and Mobility Commission review and approval by City Council. The Traffic and Mobility Commission reviews staff studies and reports, and make recommendations to the City Council and Planning Commission on mobility and traffic safety matters. Through the Traffic and Mobility Commission evaluation process, the city would ensure that the proposed project would not significantly affect emergency access and through-travel in the area. The level of activities proposed by the project is typical of other routine maintenance and construction activities and would not pose a unique or substantial interference with evacuation routes or evacuation plans and impacts would be less than significant.

Per CMC 8.48.010, Construction hour limitations, construction is only permitted between 7 a.m. and 6 p.m. Monday through Friday and between 8 a.m. and 6 p.m. on Saturdays. Given the

permitted hours of construction and nature of construction projects, most of the construction worker trips and haul truck trips would occur outside the typical weekday commuter morning and afternoon peak periods, thereby reducing the potential for traffic-related conflicts. Furthermore, emergency vehicle drivers normally have a variety of options for avoiding traffic, such as using sirens to clear a path of travel or driving in the lanes of opposing traffic, which would further reduce any potential impacts to emergency plans or evacuation. For these reasons, construction of the proposed project would not substantially impair an adopted emergency response plan or evacuation plan and impacts would be less than significant.

Although the project is not within a Very High FHSZ, in compliance with the Landscape Manual, the Applicant has prepared a Fire Master Plan that shows fire lane design features, emergency access design, and street width dimensions (see Appendix L.2). This plan was approved by the city on August 1, 2018. As shown on the Fire Master Plan, access to the West Parcel would be provided on Aviara Parkway via two separate points of ingress. The existing access driveway on the northern half of the West Parcel would be realigned to connect with a new private access road that would travel the entire perimeter of the West Parcel. Access to the East Parcel would be provided via two separate driveways on Aviara Parkway and Laurel Tree Lane. A new access driveway would be provided on the northern boundary of the East Parcel that would travel along the northeast and south perimeter of the East Parcel and connect to the new access driveway on Laurel Tree Lane. An additional one-way driveway would be constructed along Aviara Parkway, closer to Palomar Airport Road, and would also connect to the newly-created private access road.

All access routes to the West Parcel and the East Parcels as described above would have a minimum 20-foot wide fire lane to ensure proper emergency access. The driveways would provide required turning radii per the CMC, which is a 20-foot wide path with 28 feet inside and 46 feet outside. The project would also include a hammerhead turnaround on the West Parcel with dimensions that conform to the 2016 California Fire Code (120-foot Hammerhead, 60-foot “Y,” or 96-foot-diameter cul-de-sac). As well, the proposed project would provide aerial truck ladder access to buildings that are 4-stories, as shown on the approved Fire Master Plan, on the buildings located along the north, west, and south boundaries of the West Parcel and the leasing office and adjacent building in the East Parcel. Additionally, performance based aerial truck laddering has been provided on the East Parcel. All fire lane signs on-site would be placed in accordance with the CMC and the Carlsbad Fire Department requirements, as specified in the Fire Master Plan and approved by the city in the Alternatives Materials and Methods letter (City of Carlsbad, 2018), which is included in Appendix L.2.

In addition, as discussed in Section 4.13, *Public Services*, fire protection services would be provided to the project site by the City of Carlsbad Fire Department, which delivers emergency and non-emergency services, including rapid assistance for medical, fire, or other hazardous situations, to the entire city. As well, as previously summarized, the city implements the HAZMIT Plan, the intent of which is to facilitate cooperation between agencies and encourages and rewards local and state pre-disaster planning and promotes sustainability as a strategy for disaster resilience. The project has been designed to comply with applicable Fire Code and Building Code requirements, including emergency vehicle access, demonstrated as part of the approved Fire Master Plan, which shows how the project aims to reduce risks to structural

fire/wildfire in order to be consistent with the HAZMIT Plan. Additionally, as described above, the project is not located within a Very High FHSZ.

The Carlsbad Fire Department has determined, through their review and approval of the Fire Master Plan, that the project as designed would adequately provide life safety and property protection in lieu of code compliant fire department access throughout the entire property (Firesafe, 2018b). The proposed project's design and emergency access would ensure that the project would not substantially impair adopted emergency response or evacuation plans, including the HAZMIT Plan and Operational Area Emergency Operations Plan. This conclusion is reinforced by the City of Carlsbad Fire Department's approval of the Fire Master Plan and the Alternative Materials and Methods that have been incorporated into the proposed project (City of Carlsbad Fire Department, 2018). As such, construction and operation of the proposed project would not interfere with the implementation of the Operational Area Emergency Operations Plan or HAZMIT Plan nor impede any other officially adopted emergency response or evacuation plan and impacts would be **less than significant**.

Impact 4.16-2: Would the proposed project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

The project site topography would not be substantially modified and would be situated at the base of descending slopes surrounding the project site. As previously stated under Existing Conditions, Fire Environment, prevailing winds in the project area blow from the northeast and west at average speeds of 5.3 mph (National Weather Service, 2019b). Red flag warnings, which call attention to limited weather conditions that may result in extreme burning conditions, occur when a sustained wind average of 15 mph or greater is met (National Weather Service, 2019a). Prevailing winds would not exacerbate the fire conditions in the area of the project site as the site topography would not be substantially modified and average speed of the prevailing winds is 5.3 mph, below 15 mph. Therefore, construction of the proposed project would not exacerbate wildfire risks and expose project-associated occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors.

Much of the southern California region is susceptible to wildfires and therefore can be exposed to pollutant concentrations resulting from a fire, or uncontrolled spread of a wildfire. As previously noted however, the project site is not within a Very High FHSZ. The northern portion of the project site is within the Moderate Threat FHSZ as shown in Figure 4.16-1, *Fire Hazard Severity Zones*. High and Very High FHSZs are located less than 2 miles to the north, west, and southeast. To ensure the proposed project design incorporates fire prevention, a Conceptual Fuel Modification Plan and Fire Master Plan have prepared and approved by the City of Carlsbad Fire Department (March 29, 2018, and August 1, 2018, respectively). The Conceptual Fuel Modification Plan includes buffers around the project boundary which incorporate low-combustible plant materials and serve as fire prevention between development and native areas (City of Carlsbad, 2016). Fuel Modification Zone C-1 is a 20-foot buffer from the edge or fence line that is irrigated, includes fire resistive plants, trees, and shrubs. Fuel Modification Zone C-2 is a 20-foot buffer from Zone C-1 and has separate requirements for manufactured slopes and natural slopes. Fuel Modification Zone C-3 is a 20-foot buffer from Zone C-2 and has separate

requirements for manufactured slopes and natural slopes. The fuel modification zone totals 60 feet and each zone (C-1, C-2, and C-3) would include specific guidelines for types of vegetation as specified on the Conceptual Fuel Modification Plan. For example, “high fuel” species would be removed, up to 50% of moderate fuel species would be removed, and low fuel species would be planted. Following the aforementioned modifications detailed within the Carlsbad Fire Department-approved Conceptual Fuel Modification Plan, the proposed project would provide safe, defensible space from the effects of wildfire spread.

As provided in the approved Fire Master Plan, the proposed structures would include a variety of fire protection features (e.g., fire alarms, automatic sprinklers, emergency responder accessibility, fire extinguishers) to minimize the likelihood of exposing residents, visitors, staff, and structures to a significant risk involving the spread of wildland fires. Additionally, project building materials would comply with applicable fire and building codes (including but not limited the code requirements outlined in Section 4.16.2, *Regulatory Setting*, above) and would include a layered fire protection system designed to current codes and inclusive of site-specific measures that would result in a development that is less susceptible to wildfire than surrounding landscapes. This same fire protection system provides protections from on-site fire spreading to off-site vegetation. As such, accidental fires within the landscape or structures on the project site would have limited ability to spread.

Additionally, the proposed project would provide increased fire and emergency response access throughout the project site. Under existing conditions, no paved driveways are provided through most of the project site thus making it difficult for emergency responders to access the project site. The proposed project would include new paved roads/driveways throughout the site in accordance with applicable codes, making all areas of the project site accessible to emergency responders, and thus reducing the risk of the uncontrolled spread of fire. Once developed, the proposed project would not facilitate wildfire spread and would reduce projected flame lengths given the ignition resistance of the structures and the site landscaping because of the requirements of the approved Conceptual Fuel Modification Plan and Fire Master Plan and implementation of the Fire Code.

Although the proposed project would add approximately 776 residents to the area, the potential increase in ignition sources would be offset by providing a regularly maintained low flammability landscape with more paved areas and increased emergency access. As such, off-site fires would not have the same spread potential across the project site due to a lack of continuous fuels. Wildfire occurrence would not be expected to be significantly increased in frequency, duration, or size following development on the project site as proposed. Therefore, the proposed project would not exacerbate wildfire risks and increase the potential exposure of project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors and impacts would be **less than significant**.

Impact 4.16-3: Would the proposed project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

During the 28-month construction activities, all demolition, grading, site work, and other construction activities would be situated interior to the project site, and would be set back from areas of flammable vegetation as identified in the approved Conceptual Fuel Modification Plan. The setbacks would reduce the fire risk during construction (Firesafe, 2018a).

The proposed project would include development of necessary infrastructure improvements, however, these improvements would be interior to the project site, and would not require additional off-site maintenance or activities, particularly in nearby vegetated areas, that would exacerbate fire risks as identified in the approved Conceptual Fuel Modification Plan (Firesafe, 2018a). The project does not include the installation of new aboveground power lines; all proposed electrical lines would be located underground, thereby reducing fire risk.

As detailed in the approved Fire Master Plan, the proposed project would install underground connections to the existing public water system within Aviara Parkway (Firesafe, 2018b). Additionally, the Carlsbad Fire Department has confirmed that there is sufficient infrastructure capacity for the proposed project to meet the minimum water pressure and flow requirements for fire protection (Dexter Wilson Engineering, Inc. 2019 and Appendix K.1 of this EIR). All natural gas transmission facilities would be provided on-site by existing underground infrastructure. Operation of the project would not include regular maintenance or other activities off-site that would exacerbate fire risks.

Additionally, all maintenance of the project site, including vegetation maintenance, would be in accordance with existing regulations and codes to prevent accidental fire conditions. Adherence of the proposed project to the Fire Code, approved Fire Master Plan and Conceptual Fuel Modification Plan would reduce the risk of wildfire spread in the area. Therefore, the proposed project would not exacerbate fire risk or result in temporary or ongoing impacts to the environment due to installation or maintenance of associated infrastructure. Impacts would be **less than significant**.

Impact 4.16-4: Would the proposed project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The proposed project would require grading and excavation during construction, which would alter the site topography and therefore alter the existing drainage pattern, which could result in erosion, siltation and/or flooding. However, as discussed in Section 4.9, *Hydrology and Water Quality*, of this EIR, the proposed project would require implementation of a Stormwater Pollution Prevention Plan, which would include erosion and sediment control Best Management Practices during construction, thereby reducing the potential of erosion and siltation from occurring during construction. Velocity control measures would be implemented during grading activities, thereby helping to control potential flooding events that could occur during

construction. Nearby fire damaged areas from the 2014 Poinsettia Fire are less than a mile from project site, however, due to existing slope of the project site, no post-fire slope or instability issues are anticipated (SanGIS, 2019).

Existing drainage from the project site flows to the adjacent Encinas Creek in the West Parcel and to off-site storm drain facilities in the East Parcel. As discussed in Section 4.9, *Hydrology and Water Quality*, of this EIR, project grading would result in an increase of drainage areas in comparison to existing conditions. According to the drainage study prepared for the project, the post-development peak storm flows from both the 10-year and 100-year storm events would be reduced (9.9% and 8.2%, respectively, for the West Parcel, and 86.1% and 0.8%, respectively, for the East Parcel) compared to existing levels. Thus, runoff volumes discharged from the project site would not increase.

Based on the project site location and proposed site grading, a slope stability analysis was performed to evaluate the potential for slope deformation under future, post-project conditions. While the Preliminary Geotechnical Evaluation (Appendix E.1 of this EIR) found no evidence of past landslide or mass wasting events, landslides are not uncommon in slopes steeper than 15%. The findings from the Geotechnical Report conclude that slope stability is a concern at the site. In addition, the report notes that the hills to the southwest of the site have been identified as susceptible to mudflows if wildfires were to occur in the reentrant natural drainage courses. However, the design of the proposed project would include drainage control measures (e.g., debris impact walls) and setbacks as necessary to ensure that adverse effects from slope stability and mud flow are minimized, which would be detailed within a grading plan submitted to and approved by the city. The grading plan would be consistent with the recommendations of the Preliminary Geotechnical Evaluation (found in Appendix E.1), a final design level Geotechnical Report, and the current version of the CBC. Implementation of these recommendations would ensure that any proposed structures and other improvements would not cause or be adversely affected by any slope failure if one did occur as a result of runoff, post-fire slope instability.

Additionally, the city requires that all development meet the latest standards of the CBC, which includes identification of slope stability and factor of safety minimum requirements. The proposed development associated with the proposed project, including off-site improvements, would be in accordance with the city's grading permit and building code requirements which are also consistent with the most recent version of the CBC. Additionally, the final design level Geotechnical Report, which would be prepared by a California registered Geotechnical Engineer or Engineering Geologist, would include final design parameters for the walls, foundations, foundation slabs, and surrounding related improvements for all proposed improvements and recommendations. These grading, building, and design requirements would ensure that improvements would not be adversely affected by in a landslide triggered by post-wildfire conditions.

As a result, the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be **less than significant**.

4.16.5 Level of Significance before Mitigation

Implementation of the proposed project would not result in a significant wildfire impact; therefore, no mitigation measures are proposed.

4.16.6 Environmental Mitigation Measures

No mitigation measures are proposed, as no significant impacts have been identified.

4.16.7 Level of Significance after Mitigation

No significant impact related to wildfires have been identified.

CHAPTER 5

Alternatives

5.1 Introduction

Section 15126.6(a) of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) compare the environmental effects of a “reasonable range of alternatives” to the effects of a project. Section 15126.6(a) also provides that an EIR need not consider every conceivable alternative to a project. Instead, the EIR must consider a reasonable range of potential alternatives that would feasibly attain most of the basic objectives of the project and would avoid or substantially lessen any of the significant effects of the project. An EIR need not consider alternatives that are infeasible. There also is no ironclad rule governing the nature or scope of the alternatives to be discussed in an EIR, other than the “rule of reason.” The rule of reason governing the range of alternatives specifies that an EIR should discuss only those alternatives necessary to foster meaningful public participation and informed decision-making.

Because an EIR must identify ways to mitigate or avoid significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the purpose of an EIR’s alternatives discussion is to focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if the alternatives would impede, to some degree, the attainment of the project’s objectives or would cost more. Further, CEQA requires that an EIR identify the environmentally superior alternative from among the alternatives evaluated.

For each of the alternatives identified, this chapter includes the following information:

- Description of the alternative
- Description of how the alternative achieves, or does not achieve, the project objectives
- A comparative evaluation of each alternative relative to the proposed project, specifically addressing project objectives, avoidance or reduction of significant impacts, and comparative merits

The following three alternatives to the proposed project are addressed in this chapter:

1. No Project, No Development Alternative
2. No Project, General Plan Allocation Alternative
3. Density Bonus Alternative

5.2 Criteria for Alternative Analysis

CEQA Guidelines Section 15126.6(c) provides the criteria for the selection and analysis of alternatives. To be considered feasible, the alternatives must: (1) meet most of the project objectives and (2) avoid or substantially lessen the significant impacts resulting from the proposed project (specifically, air quality, biological resources, cultural resources, geology/soils [paleontological resources], and noise and vibration).

5.2.1 Project Objectives

The project objectives provide the decision-makers with a way to evaluate the proposed project against the alternatives and assist in the preparation of findings and overriding considerations, if necessary. The project applicant has identified the following project objectives:

1. Provide a high-density multi-family residential community in compliance with the goals and policies of the Housing Element of the city's General Plan.
2. Utilize the site's unique elevation and surrounding geography to develop a project that is aesthetically pleasing and is compatible with and complementary to adjacent land uses.
3. Develop a high-density for-rent apartment project that is in compliance with the General Plan and Zoning Code, Local Coastal Plan, Climate Action Plan, Habitat Management Plan, and the Zone 5 Local Facilities Management Plan.
4. Increase the city's inventory of housing diversity and accommodate increasing growth in the region by providing market rate and maximizing the amount of affordable for-rent apartments on an underutilized site that is in close proximity to existing employment and commercial opportunities as well as to recreational, public services, and transit options, consistent with city policies related to the development of housing for a range of income levels.
5. Provide affordable rental housing to a wide range of income levels, including extremely low (30% average median income (AMI)), low (60% AMI) and moderate (90% AMI), in a location that is adjacent to an existing affordable housing community to create the potential for shared educational opportunities and services that could benefit both communities.
6. Foster development patterns that promote orderly growth and prevent urban sprawl with the intent to reduce greenhouse gas emissions consistent with policies in the CAP.
7. Develop a project that minimizes impacts to sensitive biological resources, to the greatest extent feasible, by redeveloping a previously developed and disturbed site.
8. Restore and contribute hardline preserve area to the Encinas Creek Preserve adjacent to the project site and include an adequate buffer between the proposed development and resources in the Encinas Creek Preserve, consistent with the Habitat Management Plan.

5.2.2 Feasibility

CEQA Guidelines Section 15126.6(f)(1) identifies the factors to be taken into account to determine the feasibility of alternatives. The factors include site suitability; economic viability; availability of infrastructure; General Plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and whether the applicant can reasonably acquire, control or otherwise have access to the alternative site. Not one of these factors establishes a fixed limit on the scope

of reasonable alternatives. An alternative does not need to be considered if its environmental effects cannot be reasonably ascertained and if implementation of such an alternative is remote or speculative.

5.2.3 Evaluation of Significant Impacts

According to CEQA Guidelines Section 15126.6(b), the alternatives discussion should focus on those alternatives that, if implemented, could eliminate or reduce any of the significant environmental impacts of the project. The project-related impacts addressed in this analysis are those that are identified as potentially significant prior to the incorporation or implementation of any mitigation measures. In this chapter, the performance of the alternatives relative to the proposed project are evaluated to determine the “comparative merits of the alternatives” (CEQA Guidelines Section 15126.6(a)).

5.3 Alternatives Eliminated from Detailed Consideration

The following alternatives were considered but rejected either because they are infeasible, the applicant does not control the potential alternative locations or the alternative fails to meet most of the basic project objectives. The following sections describe more fully the reasons for eliminating the alternatives from consideration.

5.3.1 Alternative Locations

The CEQA Guidelines specify that the key question and first step in considering alternative locations is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location (CEQA Guidelines 15126.6 (f)(2)). Factors that need to be considered when identifying an off-site alternative include the size of the site, its location, the General Plan (or other applicable planning document) land use designation and availability of infrastructure. With respect to the proposed project site, implementation of the project would not result in any significant and unavoidable impacts and with mitigation incorporated the project’s impacts would be less than significant. Thus, the location of the proposed development is not contributing to unavoidable impacts that can only be avoided by an off-site alternative.

Both the city, as the CEQA Lead Agency, and the applicant have investigated the opportunity to develop a similar project in the same general area of the city. Most of the potential housing sites of similar size (i.e., approximately 9 to 10 acres) have recently been entitled by others, are under construction, or are designated for a much lower density. There are no other available parcels of similar size within the residential land use designation in the city that would allow for the full range of residential housing affordability similar to what is proposed. There are also no residentially designated properties that would enable the construction of a range of rental housing through the redevelopment of an existing underutilized and developed/disturbed site (an objective of the project). In addition, no other available sites would be adjacent to an existing affordable

housing development that would enable shared services among both communities. An off-site alternative was, therefore, rejected from further consideration in this EIR.

5.3.2 Reduced Project, Tiny House Alternative

This alternative was initially discussed with city staff in 2017 in response to their desire for a development containing very-low income housing using “tiny homes” on the East Parcel. Tiny homes or houses are independent structures that are much smaller in square footage than a typical home. Currently, tiny houses are not permitted by right under the city’s residential development standards (i.e., Building Code and Zoning Code). Despite the development standards inconsistency, a reduced project was developed by the project applicant integrating tiny homes on the East Parcel to house extremely-low-income residents (i.e., 30% AMI). This alternative was proposed to address the very-low-income housing needs in the city.

Assuming each tiny housing unit would be approximately 240 square feet and each lot would average 470 square feet in area, approximately 40 single-story tiny house units could be constructed in a layout similar to a single-family home community wherein the houses would be arranged on individual (but very small) lots fronting private streets. Instead of parking garages, all parking on the East Parcel would be provided in resident carports with separate guest parking spaces in surface lots. Access would be provided via a main entry along Laurel Tree Lane similar to the proposed project. Private resident amenities could be integrated into the residential development on the East Parcel, such as a community garden and building. Under this alternative, the Excess Dwelling Units Bank would be tapped for 75 units to allow for up to 259 market-rate apartment units on the West Parcel and 40 affordable tiny houses on the East Parcel, resulting in a total of approximately 299 units on the project site. A total of 90 of the units would be for very low income tenants, in compliance with the Density Bonus and inclusionary housing allowances.

While reducing the project’s impacts related to population, such as air quality, GHG, noise and traffic through a small reduction in overall units, this alternative housing type would prevent the applicant from maximizing the number of affordable housing units on the project site and would not provide housing for a wide range of income levels. In addition, construction of tiny homes in the City of Carlsbad would require amendments to the building code (Carlsbad Municipal Code [CMC] Title 18) and the Zoning Code (CMC Title 21). The Tiny House Alternative was, therefore, rejected from further consideration in this EIR.

5.4 Evaluation of Alternatives

5.4.1 No Project, No Development Alternative

Alternative Description and Setting

The CEQA Guidelines require analysis of the No Project Alternative. According to Section 15126.6(e), “the specific alternative of ‘no project’ shall also be evaluated along with its impacts. The ‘no project’ analysis shall discuss the existing conditions at the time the NOP is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to

occur in the foreseeable future if the proposed project was not approved, based on current plans and consistent with available infrastructure and community services.”

In the case of the Aviara Apartments Project, the No Project, No Development Alternative assumes the project site would not be redeveloped with multi-family residential housing and the project site would remain in its current developed/disturbed condition with its current uses. The site contains a series of buildings on the West Parcel used for flower-supply packaging and wholesale operations. These existing uses would continue operating under this alternative. The East Parcel would remain undeveloped but historically disturbed.

Relationship to Project Objectives

The No Project, No Development Alternative would achieve only two of the project objectives., including development of a high-density residential project consistent with the site’s designated land use and zoning, among other plans. **Table 5-1, *Attainment of Project Objectives – No Project, No Development Alternative***, outlines this alternative’s ability to attain the basic project objectives outlined above and in Chapter 3, *Project Description*.

**TABLE 5-1
ATTAINMENT OF PROJECT OBJECTIVES – NO PROJECT, NO DEVELOPMENT ALTERNATIVE**

Project Objective	Alternative’s Consistency with Project Objective
Provide a high-density multi-family residential community in compliance with the policies of the Housing Element of the Carlsbad General Plan.	No. The project site would not be redeveloped with residential housing and would remain as a flower supply packaging and wholesale facility.
Utilize the site’s unique elevation and surrounding geography to develop a project that is aesthetically pleasing and is compatible with and complementary to adjacent land uses.	No. The West Parcel would continue to feature a warehouse, a loading dock, a parking area, and associated gravel roads that are older and more industrial in nature and are not characteristic of the surrounding development, which is primarily commercial and residential buildings with a newer architecture style. The East Parcel would remain disturbed but undeveloped.
Develop a high-density for-rent apartment project that is in compliance with the General Plan and Zoning Code, Local Coastal Plan, Climate Action Plan, Habitat Management Plan, and the Zone 5 Local Facilities Management Plan.	No. Continuation of the existing on-site use would not be in compliance with the General Plan or Zoning Ordinance, both of which anticipate high-density residential development on the project site.
Increase the city’s inventory of housing diversity and accommodate increasing growth in the region by providing market rate and maximizing the amount of affordable for-rent apartments on an underutilized site that is in close proximity to existing employment and commercial opportunities as well as to recreational, public services, and transit options, consistent with city policies related to the development of housing for a range of income levels.	No. Without redevelopment of the site, there would be no opportunity to increase the local inventory of affordable housing near local commercial or employment areas.
Provide affordable rental housing to a wide range of income levels, including extremely-low (30% average median income (AMI)), low (60% AMI) and moderate (90% AMI), in a location that is adjacent to an existing affordable housing community to create the potential for shared educational opportunities and services that could benefit both communities.	No. Without the redevelopment of the site, there would be no opportunity to increase the local inventory of affordable housing, which would have to be met at other locations in the city. There also would not be an opportunity to share education or services for affordable housing occupants, if those locations are not adjacent to existing affordable housing.

Project Objective	Alternative's Consistency with Project Objective
Foster development patterns that promote orderly growth and prevent urban sprawl with the intent to reduce greenhouse gas emissions consistent with policies in the CAP.	Yes. No development would occur under this alternative, which would avoid any new greenhouse gas emissions being produced in the city.
Develop a project that minimizes impacts to sensitive biological resources, to the greatest extent feasible, by redeveloping a previously developed and disturbed site.	Yes. No direct effects to sensitive biological resources would occur under the alternative. Any potential indirect effects to the quality of the adjacent biological resources associated with the existing uses would continue but would not result in the removal of habitat.
Restore and contribute hardline preserve area to the Encinas Creek Preserve adjacent to the project site and include an adequate buffer between the proposed development and resources in the Encinas Creek Preserve, consistent with the Habitat Management Plan.	No. None of the property would be transferred to the hardline preserve for Encinas Creek nor would any of the land be restored for biological habitat.

Comparison of Significant Effects of Alternative to the Proposed Project

Air Quality

Implementation of this alternative would not result in an increase in criteria pollutant emissions or odors because no construction would occur and no new operational sources would be created. Existing structures and the flower supply/wholesale operations would continue to generate a limited amount of pollutant emissions from existing sources, which all contribute to baseline air quality in the San Diego air basin. This alternative would avoid the project's potentially significant impact related to exposing nearby residential development to toxic air contaminants from the use of off-road diesel equipment during project construction leading to an incremental increase in cancer risk. All other air quality and odor impacts associated with the proposed project would be less than significant and avoided under this alternative.

Biological Resources

Because no grading or construction would take place on the project site under this alternative, potentially significant indirect impacts related to construction activities to sensitive plant and animal species would be avoided. Implementation of the proposed project would also result in permanent direct significant impacts to on-site vegetation communities, including special-status vegetation communities, which would be avoided by this alternative. Specifically, under the No Project, No Development Alternative, there would be no removal of Diegan coastal sage scrub (including disturbed) and non-native grassland. Potentially significant indirect effects related to wetlands (stormwater runoff) and wildlife corridors (night lighting) would be lessened by this alternative. Unlike the proposed project, which would dedicate land area and restore creek habitat, this alternative would not result in a gain in Habitat Management Plan hardline and native habitat along Encinas Creek.

Cultural Resources

No grading or construction would occur on the project site under this alternative. Therefore, potentially significant impacts related to the disturbance of unrecorded cultural resources and

subsurface historic-period features or cultural material would not occur under the No Project, No Development Alternative. In addition, potentially significant impacts related to construction disturbance of human remains, including those interred outside of dedicated cemeteries, would not occur under this alternative. No impacts related to recorded archaeological resources would occur because no ground-disturbing activities are proposed under this alternative. No impacts to historic structures would occur for the project or this alternative given the lack of such resources on site.

Geology and Soils

The No Project, No Development Alternative would not result in potentially significant direct impacts to paleontological resources because no earthwork activities (e.g., mass grading, utility trenching) would occur that would cut into the geologic units within which fossils are buried and physically destroy the fossil remains. No other geology and soils impacts, which were also determined to be no impact or less than significant for the proposed project, would occur under this alternative (i.e., rupture of a known earthquake fault, seismic ground shaking, liquefaction, landslides, soil erosion, unstable geologic unit or soils, expansive soils and septic tanks).

Noise and Vibration

With no grading or construction activities, this alternative would avoid potentially significant impacts to nearby sensitive residential receptors associated with temporary construction noise. No permanent noise sources would be constructed on-site, such as mechanical equipment, and on-site operational traffic would not change. As compared to the less-than-significant impacts associated with these permanent noise sources, the alternative would have no permanent noise impacts. Less-than-significant permanent vibration impacts associated with the project would also not occur under this alternative. There also would be no potential for interior noise impacts from aircraft noise associated with operations at McClellan-Palomar Airport because no noise-sensitive residences would be constructed on-site.

Other Resource Topics

Because the No Project, No Development Alternative would not result in any changes to the project site and the existing buildings would remain, even the project impacts that would be less than significant would not occur. Thus, no impacts to aesthetics, energy resources, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, population and housing, public services, wildfire, and transportation would be expected under this alternative.

5.4.2 No Project, General Plan Allocation Alternative

Alternative Description and Setting

Under this alternative, the project would involve the construction of the 224 residential units allocated to the project site in the General Plan update (City of Carlsbad, 2015). The project would be required to comply with the Inclusionary Housing Ordinance and Planning Commission Resolution No. 7114 by providing 20% affordable housing units equating to 45 units. There would be no density bonus or transfer of units from the Excess Dwelling Unit Bank to increase

the unit allocation above levels in the General Plan. Under this alternative, the residential density would be 27.3 dwelling units per acre (du/ac), which is above the minimum density of 23 du/ac allowed in the R-30 land use designation. The No Project, General Plan Allocation Alternative would result in a 105-unit reduction from the 329-unit proposed project, including 37 fewer affordable units. **Figure 5-1**, *Conceptual Site Plan – General Plan Allocation Alternative*, illustrates the conceptual site plan for the No Project, General Plan Allocation Alternative.

As can be seen in Figure 5-1, *Conceptual Site Plan – General Plan Allocation Alternative*, development would only occur on the West Parcel with this alternative. The East Parcel, which maintains a residential designation, would remain undeveloped because the development costs associated with spreading the unit count across Aviara Parkway would be too great. All other aspects of the project would still be implemented as proposed under this alternative, including on-site resident amenities, parking, utility improvements and the dedication of hardline open space and restoration of habitat in the Encinas Creek Preserve.

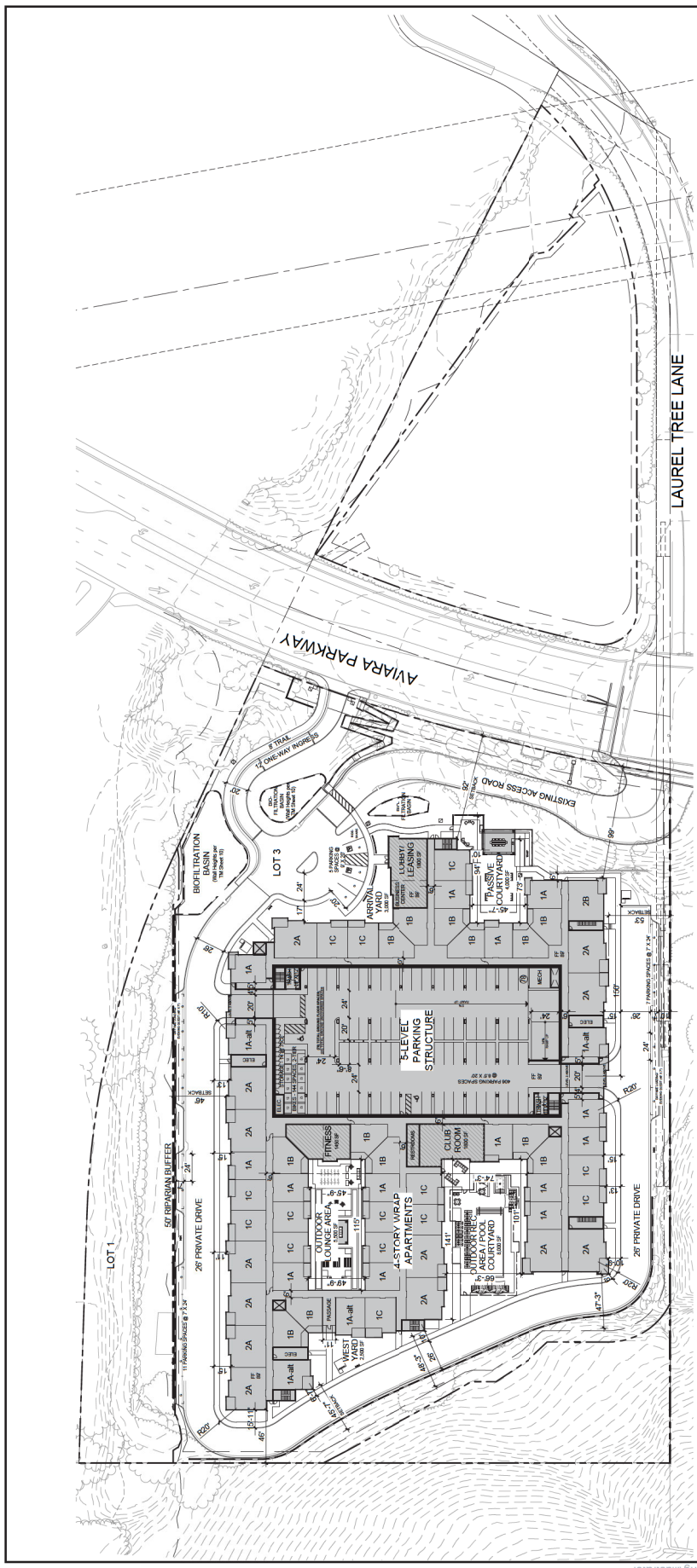
Relationship to Project Objectives

The No Project, General Plan Allocation Alternative would achieve most of the project objectives, including development of a high-density residential project consistent with the site's designated land use and zoning. **Table 5-2**, *Attainment of Project Objectives – No Project, General Plan Allocation Alternative*, outlines this alternative's ability to attain the basic project objectives outlined above and in Chapter 3, *Project Description*. However, this alternative would result in a vacant site (the East Parcel) parcel that is residentially designated but does not have any units allocated from the General Plan, which conflicts with the city's housing policies.

Comparison of Significant Effects of Alternative to the Proposed Project

Air Quality

Implementation of this alternative would still result in an increase in criteria pollutant emissions because construction activities would still occur and new operational sources would be created. Although the overall number of residential units and duration of construction would be less under the No Project, General Plan Allocation Alternative, the daily construction activities would be similar to those of the proposed project resulting in similar construction-related daily emissions. Operational emissions would be lower under this alternative due to the reduction in daily vehicle trips; however, the proposed project's operational air quality would not exceed thresholds and there would be less-than-significant impacts similar to this alternative. This alternative would lessen the project's potentially significant impact related to exposing nearby residential development to toxic air contaminants from the use of off-road diesel equipment since construction activities would still occur within 1,000 feet of nearby sensitive receptors but would not occur near the maximum impacted receptor location adjacent to the East Parcel. All other air quality and odor impacts associated with the proposed project would also be less than significant under this alternative.



UNIT MIX

Unit Type	Unit Area (net sf)	Level 1	Level 2	Level 3	Level 4	Level 5	Total Units (DU)	Total Area (net sf)	Unit Mix
Plan 1A	711	14	19	17			47	33,417	Mix
Plan 1B	720	13	15	16	18	60	106	43,200	Mix
Plan 1C	774	14	14	14	14	42	42	32,508	Mix
Plan 2A	1,104	1	1	1	1	4	4	62,625	68%
Plan 2B	1,006	1	1	1	1	7	7	7,728	
Subtotal 1 Bedroom Units	1,300	42	49	48	56	167	166	114,858	29%
Subtotal 2 Bedroom Units	1,300	1	1	1	1	5	5	6,500	2%
TOTAL		59	64	68	33	224	224	193,005	2%

PARKING SUMMARY

Facility	Spaces	Notes
5-Level Parking Structure	428	
Standard Covered Spaces	42	Resident
Standard Uncovered Spaces	23	Guest
Subtotal	493	
Standard Uncovered Spaces	23	Guest
Subtotal	470	
Total Spaces Provided	470	

DEVELOPMENT STANDARDS

Standard	Required	Proposed
Minimum Building Height	35'	35' (8.50' max)
Minimum Site Coverage	60%	47%
Minimum Setbacks	15'	8'
Front (per 21.24.040 A.1.)	5'	5'
Side	5'	5'
Rear	10'	44'

AFORDABILITY SUMMARY

Market Rate Units Provided	45
Market Rate Units Proposed	179
Market Rate Units Proposed	224
Total Units Provided	224

BUILDING INFORMATION

Address	6145 Laurel Tree Lane, Carlsbad, CA 92009
Parcel No.	020-010-010-000
Construction Type	Residential
Construction Type	Parking Structure
Total Gross Floor Area	435,000
Total Building Coverage	10,000
Site Area	49.2%

SOURCE: Michael Baker International, 2019

Aviara Apartments Project

Figure 5-1

Conceptual Site Plan – General Plan Allocation Alternative



TABLE 5-2
ATTAINMENT OF PROJECT OBJECTIVES – GENERAL PLAN ALLOCATION ALTERNATIVE

Project Objective	Alternative's Consistency with Project Objective
Provide a high-density multi-family residential community in compliance with the policies of the Housing Element of the Carlsbad General Plan.	No. The project site would be redeveloped with residential housing consistent with the city's General Plan residential densities. However, by not constructing at the density range intended in the General Plan and without a density bonus or increase from the Excess Dwelling Unit Bank, this alternative would not maximize the number of affordable housing units that could be allowed on the project site in accordance with the Housing Element and Regional Housing Needs Assessment.
Utilize the site's unique elevation and surrounding geography to develop a project that is aesthetically pleasing and is compatible with and complimentary to adjacent land uses.	Yes. The alternative project would comply with the city's General Plan policies regarding its design and creating buffers and transitions between the project and surrounding residential, commercial and office development, as well as open space.
Develop a high-density for-rent apartment project that is in compliance with the General Plan and Zoning Code, Local Coastal Plan (LCP), Climate Action Plan (CAP), Habitat Management Plan, and the Zone 5 Local Facilities Management Plan.	No. Development of a 224-unit residential housing project would be in compliance with the General Plan and Zoning Ordinance, both of which anticipate high-density residential development on the project site. However, with 37 less affordable units (as compared to the 82 units associated with the proposed project), this alternative would result in a vacant parcel that is residentially designated but does not have any units allocated from the General Plan, which is inconsistent with city housing policy that encourages a range of housing and encourages maximizing the development of affordable housing units.
Increase the city's inventory of housing diversity and accommodate increasing growth in the region by providing market rate and maximizing the amount of affordable for-rent apartments on an underutilized site that is in close proximity to existing employment and commercial opportunities as well as to recreational, public services, and transit options, consistent with city policies related to the development of housing for a range of income levels.	No. The alternative would increase the local inventory of affordable housing on an underutilized site near local commercial or employment areas but not to levels that are allowed or encouraged by local policies and anticipated with the proposed project.
Provide affordable rental housing to a wide range of income levels, including extremely-low (30% average median income (AMI)), low (60% AMI) and moderate (90% AMI), in a location that is adjacent to an existing affordable housing community to create the potential for shared educational opportunities and services that could benefit both communities.	No. Redevelopment of an underutilized housing site would increase the local inventory of affordable housing but not at the levels or range contemplated in local policies, including the Housing Element of the General Plan.
Foster development patterns that promote orderly growth and prevent urban sprawl with the intent to reduce greenhouse gas emissions consistent with policies in the CAP.	Yes. Site development under this alternative would be orderly and consistent with the General Plan and zoning. New greenhouse gas emissions would be produced by the alternative but would be consistent with the reduction policies of the CAP. However, the lesser unit count would reduce the opportunity to site affordable housing near jobs and along transit lines.
Develop a project that minimizes impacts to sensitive biological resources, to the greatest extent feasible, by redeveloping a previously developed and disturbed site.	Yes. Direct effects to sensitive biological resources would be the same under the alternative as those of the proposed project. Similar to the project, they would occur on a primarily developed/disturbed site.
Restore and contribute hardline preserve area to the Encinas Creek Preserve adjacent to the project site and include an adequate buffer between the proposed development and resources in the Encinas Creek Preserve, consistent with the Habitat Management Plan.	Yes. A portion of the West Parcel would be transferred to the hardline preserve for Encinas Creek and would be restored for biological habitat.

Biological Resources

Grading or construction impacts associated with the proposed project would be lessened but not avoided under this alternative because units would still be constructed within the same footprint on the West Parcel as the project. Impacts to biological resources on the East Parcel would be avoided by this alternative. Potentially significant indirect impacts to sensitive plant and animal species would still occur, but would be less as the East Parcel would remain undeveloped. Implementation of the proposed project would also result in permanent direct significant impacts to on-site vegetation communities, including special-status vegetation communities, which would be minimized by this alternative. Specifically, under the No Project, General Plan Allocation Alternative, impacts to the same amount of Diegan coastal sage scrub (including disturbed) and less impacts to non-native grassland would be expected. Potentially significant indirect effects related to wetlands (stormwater runoff) and wildlife corridors (night lighting) would also be expected under this alternative due to the proximity of West Parcel development to wetlands and sensitive resources (i.e., plants and wildlife). Indirect impacts on the East Parcel would be avoided by this alternative. To offset the impacts to biological resources, this alternative would dedicate the same amount of land area to the Encinas Creek Preserve, in accordance with the city's Habitat Management Plan. However, the East Parcel would remain undeveloped but not dedicated to the preserve due to its residential designation.

Cultural Resources

Because grading or construction would occur on the West Parcel of the project site under this alternative, potentially significant impacts related to the disturbance of unrecorded cultural resources and subsurface historic-period features or cultural material would occur under the No Project, General Plan Allocation Alternative. Impacts would, however, be less since the East Parcel would remain undeveloped under this alternative. In addition, potentially significant impacts related to construction disturbance of human remains, including those interred outside of dedicated cemeteries, would still occur under this alternative however, the potential to encounter such resources would be less given that no grading would occur on the East Parcel. The less-than-significant impacts related to recorded archaeological resources would be the same as those of the proposed project; no impacts to historic structures would occur for the proposed project or this alternative.

Geology and Soils

The No Project, General Plan Allocation Alternative would result in potentially significant direct impacts to paleontological resources because earthwork activities (e.g., mass grading, utility trenching) would occur that would cut into the geologic units within which fossils could be buried and physically destroy those fossil remains. Less ground disturbance would occur under this alternative; therefore, any fossil remains under the East Parcel would remain in place resulting in a minimization of impacts. All the other geology and soils impacts that were determined to be no impact or less than significant for the proposed project would be similar with this alternative (i.e., earthquake fault rupture, seismic shaking, liquefaction, landslides, soil erosion, unstable geologic unit or soils, expansive soils and septic tanks).

Noise and Vibration

Because grading and construction activities would occur, this alternative would result in potentially significant impacts to nearby sensitive residential receptors associated with temporary construction noise. However, sensitive receptors along Laurel Tree Lane near the East Parcel would not be exposed to significant construction noise under this alternative. Although permanent noise sources would be constructed on the West Parcel, such as mechanical equipment, and operational traffic would increase in the project area (below levels anticipated with the proposed project), impacts would be less than significant similar to the proposed project. Less-than-significant permanent vibration impacts associated with the project would also occur under this alternative but be limited to the West Parcel where construction would occur. The potential for significant interior noise impacts from aircraft noise associated with operations at McClellan-Palomar Airport would be avoided through standard construction methods, similar to the proposed project.

Other Resource Topics

Because the No Project, General Plan Allocation Alternative would allow for the redevelopment of the project site with a multi-family residential development that is lower in intensity than the proposed project, the less-than-significant project impacts would still occur but would be substantially less. As such, less-than-significant impacts to aesthetics, biological resources, agriculture and forestry resources, cultural resources, energy, geology/soils/seismicity, greenhouse gas emissions, hydrology, mineral resources, population and housing, recreation, public services, utilities, tribal cultural resources, land use and planning, wildfire, and transportation would be expected under this alternative.

5.4.3 Density Bonus Alternative

Alternative Description and Setting

This alternative would use a different methodology for determining how many residential units could be developed on the project site, provided that affordable housing is incorporated into the project. In comparison to the proposed density increase approach wherein additional units above and beyond the units allocated by the General Plan to the project site are transferred from the Excess Dwelling Unit Bank and the applicable development standards, including allowable density, are modified pursuant to SDP (CMC Section 21.53.120), this alternative would involve using a density bonus approach which would increase the number of residential units on-site as permitted by the city's density bonus law (Chapter 21.86). In general, the density bonus provisions in the CMC allow for a 35% increase in maximum allowable unit count under the General Plan if a project constructs affordable housing. The General Plan land use designation of R-30 would allow for 246 dwelling units to be developed on the project site (assuming 8.2 acres of net usable land area and the maximum 30 dwelling units per acre density); the Density Bonus Alternative would increase that amount by 35% resulting in up to 333 residential units on the project site. This alternative would, therefore, represent the maximum dwelling units allowed solely under the density bonus provisions in the CMC. Of the 333 units allowed under this alternative, 67 units would be classified as affordable in accordance with City Council Policy 43

and Planning Commission Resolution No. 7114. This alternative would result in a residential density of 40.5 du/ac.

Under the Density Bonus Alternative, the West Parcel would support up to 263 market-rate apartments, while the East Parcel would be developed with up to 70 affordable apartments. Therefore, the Density Bonus Alternative would result in 16 more market-rate apartments and 12 fewer affordable apartments, for an overall increase of 4 apartments on the project site. All of the affordable units would be located on the East Parcel, as compared to the proposed project wherein 12 units would be integrated with the market-rate rentals on the West Parcel. A conceptual site plan for this alternative is provided in **Figure 5-2, Conceptual Site Plan – Density Bonus Alternative**, of this EIR. This alternative would include on-site resident amenities, parking, utility improvements, and the dedication of hardline open space and restoration of habitat in the Encinas Creek Preserve similar to the proposed project.

Because this alternative would increase the maximum residential units allowed under the R-30 designation using the density bonus approach, the applicant would utilize available incentives and waivers pursuant to the city's density bonus law (Chapter 21.86) to allow for the development of the proposed project. With regard to parking, the applicant would be allowed by right to reduce the required parking for this alternative to 434 parking spaces pursuant to CMC Section 21.86.090(g).

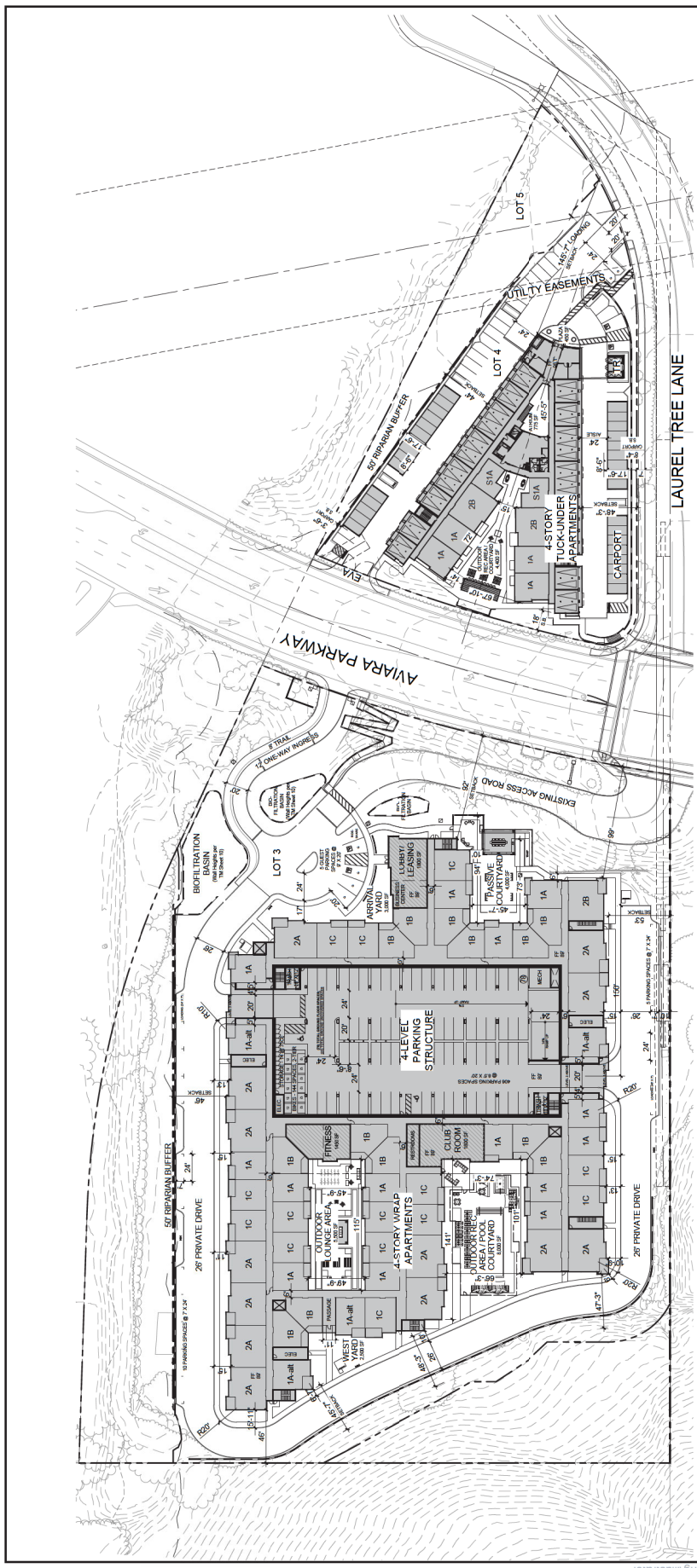
Relationship to Project Objectives

The Density Bonus Alternative would achieve most of the project objectives, including development of a high-density residential project consistent with the site's designated land use and zoning. **Table 5-3, Attainment of Project Objectives – Density Bonus Alternative**, outlines this alternative's ability to attain the basic project objectives outlined above and in Chapter 3, *Project Description*.

Comparison of Significant Effects of Alternative to the Proposed Project

Air Quality

Implementation of this alternative would still result in an increase in criteria pollutant emissions because construction activities would still occur and new operational sources would be created. Although the overall number of residential units would be slightly more under the Density Bonus Alternative, the daily construction activities (and therefore air emissions) would be similar to those of the proposed project, resulting in similar construction-related emissions. Operational emissions would be the same under this alternative, however, operational air quality would not exceed thresholds and less-than-significant impacts would occur under this alternative, despite the slight increase in emissions related to constructing up to three additional units.



PARKING SUMMARY

Category	Units	Ratio	West Spaces	East Spaces
1 Bedroom Units	1	2	2	2
2 Bedroom Units	2	2	2	2
Total Spaces Required Per Density Bonus	2	2	100	234

Spaces Provided

Category	Units	West Spaces	East Spaces
Standard Covered Spaces, Garage, Resident	32	32	32
Standard Covered Spaces, Carport, Resident	30	30	30
Standard Uncovered Spaces, Resident	30	30	30
Standard Uncovered Spaces, Guest	2	2	2
Total Spaces Provided	102	102	234

UNIT MIX - EAST SITE

Unit Type	Unit Area (net sf)	No. Units Per Floor (DU)	Total Units (DU)	Total Area (net sf)	Unit Area (net sf)
Plan 1A	445	2	2	3,850	15%
Plan 1B	625	4	4	10,100	38%
Plan 1C	650	4	4	10,100	38%
Plan 2A	850	2	2	6,800	26%
Plan 2B	720	2	2	5,760	22%
Plan 2C	1,040	1	1	8,320	31%
TOTAL	3,330	16	16	46,320	100%

UNIT MIX - WEST SITE

Unit Type	Unit Area (net sf)	No. Units Per Floor (DU)	Total Units (DU)	Total Area (net sf)	Unit Area (net sf)
Plan 1A	785	4	4	3,140	7%
Plan 1B	720	13	13	9,360	21%
Plan 1C	720	14	14	10,080	23%
Plan 2A	1,135	11	11	12,485	29%
Plan 2B	1,009	1	1	8,072	19%
Plan 2C	1,009	1	1	8,072	19%
TOTAL	4,258	69	69	53,199	100%

SITE INFORMATION

APN: 212-040-56
 Address: 1450 Laurel Tree Lane, Carlsbad, CA 92009
 Legal Description: Parcel of Lot 6-C

General Plan Designation: R20
 Zoning: Residential Medium Density
 Existing Land Use: Vacant, Industrial
 Proposed Land Use: Multi-Family Residential
 Gross Site Area: 10.3 ac
 Leasable Site Area: 449,933 sq ft
 Developable Site Area: 337,792 sq ft
 Unit Yield Proposed: 338 DU
 Density Proposed: 46.15 DU/ac

DEVELOPMENT STANDARDS

Standard	Required	Proposed
Minimum Building Height	35'	35' to 37' max
Minimum Building Coverage	60%	41%
Minimum Setbacks	15'	18'
Front (per 21.24.040.A.1)	5'	4' (6' for portion)
Side	5'	4' (6' for portion)
Rear	17'	15'

PERFORMANCE SUMMARY

Category	West	East
Allocation Units Provided	67	67
Allocation Units Required	67	67
Total Units Provided	333	266

CONCEPTUAL SITE PLAN - DENSITY BONUS ALTERNATIVE

LAUREL TREE LANE

AVIRA PARKWAY

57th PRIVATE DRIVE

LOT 3

LOT 4

LOT 5

UTILITY EASEMENTS

4-LEVEL PARKING STRUCTURE

4-STORY UNDER-APARTMENTS

CARPORT

AMENITY AREAS: FITNESS, LOUNGE AREA, OUTDOOR COURTYARD, CLUB ROOM, OUTDOOR RECREATION, YARD, BICYCLE TRANSITION BASIN, ARRIVAL YARD, LEASING OFFICE, PASSIVE POOL YARD.

**TABLE 5-3
ATTAINMENT OF PROJECT OBJECTIVES – DENSITY BONUS ALTERNATIVE**

Project Objective	Alternative's Consistency with Project Objective
Provide a high-density multi-family residential community in compliance with the policies of the Housing Element of the Carlsbad General Plan.	Yes. The project site would be redeveloped with residential housing consistent with the city's General Plan residential densities and Housing Element allocations.
Utilize the site's unique elevation and surrounding geography to develop a project that is aesthetically pleasing and is compatible with and complimentary to adjacent land uses.	Yes. The alternative project would comply with the city's General Plan policies regarding its design and creating buffers and transitions between the project and surrounding residential, commercial and office development, as well as open space.
Develop a high-density for-rent apartment project that is in compliance with the General Plan and Zoning Code, Local Coastal Plan, Climate Action Plan, Habitat Management Plan, and the Zone 5 Local Facilities Management Plan.	Yes. Development of a 333-unit residential housing project would be in compliance with the General Plan and Zoning Ordinance, both of which anticipate high-density residential development on the project site.
Increase the city's inventory of housing diversity and accommodate increasing growth in the region by providing market rate and maximizing the amount of affordable for-rent apartments on an underutilized site that is in close proximity to existing employment and commercial opportunities as well as to recreational, public services, and transit options, consistent with city policies related to the development of housing for a range of income levels.	Yes. The alternative would increase the local inventory of affordable housing on an underutilized site near local commercial or employment areas but the total amount of affordable units constructed onsite would be below levels realized by the proposed project.
Provide affordable rental housing to a wide range of income levels, including extremely-low (30% average median income (AMI)), low (60% AMI) and moderate (90% AMI), in a location that is adjacent to an existing affordable housing community to create the potential for shared educational opportunities and services that could benefit both communities.	Yes. Redevelopment of an underutilized housing site in accordance with this alternative would provide an opportunity to create shared opportunities with the adjacent affordable housing development but the Density Bonus Alternative would have 15 less affordable housing units that would benefit from the colocation.
Foster development patterns that promote orderly growth and prevent urban sprawl with the intent to reduce greenhouse gas emissions consistent with policies in the CAP.	Yes. Site development under this alternative would be orderly and consistent with the General Plan and zoning. New greenhouse gas emissions would be produced by the alternative but would be consistent with the policies of the CAP, although the reduced affordable housing unit count of this alternative would reduce the opportunity to site affordable residential near jobs and along transit lines.
Develop a project that minimizes impacts to sensitive biological resources, to the greatest extent feasible, by redeveloping a previously developed and disturbed site.	Yes. Direct effects to sensitive biological resources would be the same under the alternative as those of the proposed project. Similar to the project, they would occur on a primarily developed/disturbed site.
Restore and contribute hardline preserve area to the Encinas Creek Preserve adjacent to the project site and include an adequate buffer between the proposed development and resources in the Encinas Creek Preserve, consistent with the Habitat Management Plan.	Yes. A portion of the property would be transferred to the hardline preserve for Encinas Creek and would be restored for biological habitat.

This alternative would not lessen the project's potentially significant impact related to exposing nearby residential development to toxic air contaminants from the use of off-road diesel equipment since construction activities would still occur within 1,000 feet of nearby sensitive receptors. All other less-than-significant air quality and odor impacts associated with the proposed project would also be less than significant under this alternative.

Biological Resources

Grading or construction impacts associated with the proposed project would not be lessened or avoided under this alternative because the units would be constructed within the same footprint as the project. Potentially significant indirect impacts to sensitive plant and animal species would still occur. Implementation of the proposed project and this alternative would also result in permanent direct significant impacts to on-site vegetation communities, including special-status vegetation communities. Specifically, under the Density Bonus Alternative, impacts to the same amount of Diegan coastal sage scrub (including disturbed) and non-native grassland would be expected since the same net area would likely be disturbed. Potentially significant indirect effects related to wetlands (stormwater runoff) and wildlife corridors (night lighting) would also be expected under this alternative due to the proximity of development to wetlands and sensitive resources (i.e., plants and wildlife). To offset the impacts to biological resources, this alternative would need to dedicate the same amount of land area to the Encinas Creek Preserve, in accordance with the city's Habitat Management Plan.

Cultural Resources

Because similar grading limits and construction activities would occur on the project site under this alternative, potentially significant impacts related to the disturbance of unrecorded cultural resources and subsurface historic-period features or cultural material would occur under the Density Bonus Alternative. In addition, potentially significant impacts related to construction disturbance of human remains, including those interred outside of dedicated cemeteries, would occur under this alternative. The less-than-significant impacts related to recorded archaeological resources would be the same as those of the proposed project; no impacts to historic structures would occur for the project or this alternative.

Geology and Soils

The Density Bonus Alternative would result in potentially significant direct impacts to paleontological resources because earthwork activities (e.g., mass grading, utility trenching) would occur that would cut into the geologic units within which fossils could be buried and physically destroy those fossil remains. All the other geology and soils impacts that were determined to be no impact or less than significant for the proposed project would be similar under this alternative (i.e., rupture of a known earthquake fault, seismic ground shaking, liquefaction, landslides, soil erosion, unstable geologic unit or soils, expansive soils and septic tanks).

Noise and Vibration

Because grading and construction activities would occur, this alternative would result in potentially significant impacts to nearby sensitive residential receptors associated with temporary construction noise. Although permanent noise sources would be constructed on-site, such as mechanical equipment, and on-site operational traffic would increase, impacts would be less than significant similar to the proposed project. Less-than-significant permanent vibration impacts associated with the project would also occur under this alternative. The potential for significant interior noise impacts from aircraft noise associated with operations at McClellan-Palomar Airport would be avoided through standard construction methods, similar to the proposed project.

Other Resource Topics

Because the Density Bonus Alternative would allow for the redevelopment of the project site with a multi-family residential development that is similar in intensity to the proposed project, the less-than-significant project impacts would still occur and would not be substantially increased because the project density would only be greater than the proposed project by four units. As such, less-than-significant impacts to aesthetics, biological resources, agriculture and forestry resources, cultural resources, energy, geology/soils/seismicity, greenhouse gas emissions, hydrology, mineral resources, population and housing, recreation, public services, utilities, tribal cultural resources, land use and planning, wildfire, and transportation would be expected under this alternative.

5.5 Summary of Alternatives Analysis

A summary of impacts of the alternatives compared to the proposed project is included in **Table 5-4, Impacts Comparison of Alternatives to the Proposed Project**, pursuant to CEQA Guidelines Section 15126.6(d).

**TABLE 5-4
IMPACTS COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT**

Issue Area	Proposed Project	No Project, No Development Alternative	No Project, General Plan Allocation Alternative	Density Bonus Alternative
4.2 Air Quality	SM	LTS	SM -	SM
4.3 Biological Resources	SM	LTS	SM -	SM
4.4 Cultural Resources	SM	LTS	SM -	SM
4.6 Geology and Soils	SM	LTS	SM -	SM
4.11 Noise and Vibration	SM	LTS	SM -	SM

LTS = Less than significant

SM = Significant and mitigated

SU = Significant and unavoidable

- Impacts would be less than those of the proposed project

+ Impacts would be greater than those of the proposed project

5.6 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(a) states that an EIR shall describe a range of reasonable alternatives. As evaluated in Chapter 2 of this EIR, the significant impacts of the proposed project would affect air quality; biological resources; cultural resources; geology and soils; and noise and vibration. As it would substantially lessen impacts to each of these issue topics to a less-than-significant level, the No Project, No Development Alternative would be the environmentally superior alternative.

However, CEQA Guidelines Section 15126.6(e)(2) also states that if the environmentally superior alternative is the “no project” alternative, the EIR is also required to identify an environmentally superior alternative from among the other alternatives. The No Project, General Plan Allocation Alternative would be the environmentally superior alternative from the remaining alternatives, as it would lessen project impacts to biological resources, cultural resources, geology and soils, and noise and vibration through avoidance of development on the East Parcel.

CHAPTER 6

Other CEQA Considerations

6.1 Cumulative Impacts

The California Environmental Quality Act (CEQA) requires that Environmental Impact Reports (EIRs) discuss cumulative impacts, in addition to project-specific impacts. Pursuant to Section 15130(b) of the CEQA Guidelines, the discussion of cumulative impacts must reflect the severity of the impacts and the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the proposed project alone.

Section 15130(b) of the CEQA Guidelines presents two approaches for analyzing cumulative impacts:

- (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.
- (B) A summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative impact.

The cumulative impacts analysis completed for the proposed project is based primarily on the list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.

The cumulative list is provided below in **Table 6-1**, *Cumulative Project List*, and the locations of cumulative projects are depicted in **Figure 6-1**, *Cumulative Projects*.

**TABLE 6-1
CUMULATIVE PROJECT LIST**

Project Name/Location	Description/Land Use	Size	Units	Status
City of Carlsbad Development Projects				
1	Robertson Ranch - West Village Cross Streets: El Camino Real, Tamarack Avenue, Cannon Road, College Boulevard	268 423 8 5	DU DU Acres Acres	Approved, Under Construction
2	Cantardini Ranch Cross Streets: Northeast of El Camino Real and College Boulevard	105 80	DU DU	Approved
3	Holly Springs Cross Streets: Northeast of El Camino Real and College Boulevard	43	DU	Approved
4	Quarry Creek Cross Streets: College Boulevard and Marron Road	119 438 99	DU Townhomes DU	Approved, Under Construction
5	Dos Colinas Cross Streets: El Camino Real, Cannon Road, College Boulevard	228 8 28	DU Units DU	Approved
6	The Crossings at Carlsbad West View Lot 9 5800 The Crossings Drive, Carlsbad, CA 92008	71 36	Rooms DU	Approved, Under Construction
7	The Square at Bressi Ranch Cross Streets: Palomar Airport Road and El Fuerte Street	95,000 125	SF DU	Approved, Under Construction
8	Poinsettia 6'1 South of Palomar Airport Road, west of El Camino Real, and bisected in the northerly portion by the future Poinsettia Lane Ranch E circulation element roadway.	123	DU	Approved, Under Construction

Project Name/Location	Description/Land Use	Size	Units	Status
City of Carlsbad Development Projects				
9	West Oaks Multi-family Cross Streets: West Oaks Way and Palomar Oaks Way	200	DU	Pending Approval
10	Maija Acres South of El Camino Real, east of Kelly Drive, north of Park Drive, and west of Lisa Street	252	Townhomes	Pending Approval
		46	DU	
		6,000	SF	
		4,000	SF	
11	Encinas Creek Apartments Cross Streets: Cannon Road and College Boulevard	140	DU	Approved

NOTES:

SF = Square Feet; DU = Dwelling Units.

SOURCE: Michael Baker International, 2019. Aviara Apartments Transportation Impact Analysis Report. Cumulative Projects Page 23.



SOURCE: SanGIS 2019; Open Street Map, 2019; Michael Baker International.

Aviara Apartments Project Initial Study

Figure 6-1
Cumulative Projects



The cumulative impact analysis uses the General Plan growth projections method, which assumes build-out of the Carlsbad General Plan. The cumulative impact analysis is also based on the projects listed in Table 6-1, *Cumulative Project List*, and shown on Figure 6-1, *Cumulative Projects*. The geographic scope of the cumulative impact analysis varies depending on the environmental issues being analyzed. The geographic scope for each topic is specified within each analysis below.

6.1.1 Aesthetics

The geographic scope of the cumulative impact analysis for aesthetics is the City of Carlsbad (city). Cumulative development would result in the continued alteration of the visual setting and topography of the area surrounding the project site. Local planning policies and development standards, including specific policies related to visual resources and grading, would reduce potential aesthetic impacts from individual developments. No significant aesthetic impacts have been identified for the proposed project. Cumulatively, since individual development proposals would be required to conform to the goals, policies, and recommendations of the General Plan and applicable city regulations (e.g., Zoning Ordinance, Grading Ordinance, Hillside Development Permit Regulations, Habitat Management Plan [HMP] Adjacency Standards), the cumulative aesthetic impact for the proposed project would be less than significant.

6.1.2 Air Quality

Cumulative impacts with respect to air quality assess the project's contribution to the cumulative increase in pollutants for which the San Diego Air Basin (SDAB) is listed as non-attainment for state and federal ambient air quality standards. Specifically, these include inhalable particles with diameters that are generally 10 micrometers and smaller (PM10) and fine inhalable particles with diameters that are generally 2.5 micrometers and smaller (PM2.5), and ozone. A project that has a significant direct impact on air quality with regard to emissions of PM10, PM2.5, NO_x, and/or VOCs, would also have a significant cumulatively considerable net increase. In the event direct impacts from a proposed project are less than significant, a project may still have a cumulatively considerable impact on air quality if the construction emissions of concern from the proposed project, in combination with the emissions of concern from other proposed projects or reasonably foreseeable future projects within the vicinity of the proposed project would exceed the applicable significance thresholds (County of San Diego, 2007).¹ For operational emissions, since the primary source of emissions are from mobile sources, a project which conforms to the County of San Diego General Plan, and does not have emissions exceeding the applicable significance threshold, will not create a cumulative impact since the emissions were accounted for in the San Diego Regional Air Quality Strategy (RAQS) (County of San Diego, 2007).

Construction of the project would not exceed the applicable significance thresholds (see Table 4.2-4, *Estimated Regional Construction Emissions*, of Section 4.2, *Air Quality*, of this Draft EIR).

¹ The city of Carlsbad is located within the SDAB and is subject to the San Diego Air Pollution Control District (APCD) guidelines and regulations. As the city of Carlsbad does not have its own air quality significance thresholds, the proposed project adheres to the County of San Diego Guidelines.

The nearest cumulative projects are located over 2,000 feet to the southeast (West Oaks project) and north (The Crossings) of the project site. No other projects in the surrounding area have been identified in the vicinity of the project site. These distances exceed the typical distance of 1,000 feet² for evaluating local impacts from PM10 and PM2.5, which are the construction pollutants of concern. Therefore, construction of the proposed project, when combined with reasonably foreseeable future projects within the vicinity of the proposed project, would not result in cumulatively considerable emissions. With respect to operations, the project would not exceed the applicable significance thresholds (see Table 4.2-5, *Estimated Regional Operational Emissions*, of Section 4.2, *Air Quality*, of this Draft EIR). Furthermore, with submittal of the required Site Development Plan and Affordable Housing Agreement to the city for review and approval, and with approval by the city for the requested density increase, the proposed project would conform to planned growth that is anticipated by the General Plan, comply with state and local housing regulations, and be consistent with the population growth projections for the area. The project's consistency with the city's municipal code and city's General Plan would be sufficient to determine that the project would not conflict with SANDAG growth projections and the RAQS. Therefore, operation of the proposed project, when combined with reasonably foreseeable future projects within the vicinity of the proposed project, would not result in cumulatively considerable emissions. As a result, cumulative construction and operational emissions for non-attainment pollutants would be less than significant.

The proposed project would result in a potentially significant impact with respect to diesel particulate matter (DPM) emissions and off-site health risk. Because this impact is a significant direct impact from project emissions of PM10 and PM2.5 (i.e., DPM), the project would also have a significant cumulatively considerable net increase, and therefore the impact is potentially significant.

Mitigation Measure AQ-1 would reduce DPM emissions by requiring that all off-road diesel equipment greater than 50 horsepower used for the proposed project would meet Environmental Protection Agency (EPA) Tier 4 final off-road emissions standards or equivalent. This mitigation measure would ensure that the maximum incremental increase in cancer risk as a result of construction activities would be below the significance threshold of 10 in one million. Because this direct impact from project emissions of PM10 and PM2.5 (i.e., DPM) would be mitigated to less than significant with implementation of this mitigation measure and because there are no other projects in the vicinity of the project site, cumulatively considerable impacts to air quality would be avoided when combined with reasonably foreseeable future projects within the vicinity of the proposed project site and health risk impacts would be mitigated to less than significant.

6.1.3 Biological Resources

The geographic scope for cumulative impacts related to biological resources includes the cities of Carlsbad, Oceanside, and Vista. These jurisdictions are all participants in the North County Multiple Habitat Conservation Program (MHCP), which constitutes a subregional plan pursuant to the State of California Natural Community Conservation Planning Act. The MHCP considers

² For example, the California Air Resources Board recommends a distance of 1,000 feet for evaluating impacts from freeways primarily as a result of particulate matter emissions from vehicle exhaust (CARB, 2005).

biological resource conservation on a sub-regional scale and therefore serves as an appropriate measure of cumulative impacts. The City of Carlsbad's HMP serves as a local implementation plan for the sub-regional MHCP. As such, the MHCP and its Subarea Plan provide mitigation to address the effects of cumulative development.

As discussed above, the proposed project would result in potentially significant direct and indirect impacts to biological resources including special-status vegetation communities, plants, wildlife, and wetlands. Additionally, the proposed project may have indirect impacts on corridor function in the adjacent Encinas Creek, which is identified as a minor linkage in the HMP. These potential contributions to cumulative impacts could be considerable without mitigation that conforms to the MHCP and HMP, and therefore are potentially significant.

Mitigation Measures BIO-1, BIO-3, and BIO-4 would protect special-status resources in the adjacent open space and corridor function during project construction through construction BMPs and other avoidance measures. Mitigation Measures BIO-2 and BIO-5, as well as the project's conditions of approval, would compensate for project impacts by preserving, creating, or restoring habitat that would be protected in perpetuity. Mitigation Measure BIO-6 would also ensure that project lighting does not degrade the adjacent open space. These measures ensure consistency with the MHCP and the HMP and provide appropriate mitigation to ensure the integrity of the plans, such that the project's cumulative effects would be mitigated to less than significant.

6.1.4 Cultural Resources

A cumulative impacts analysis for historic architectural resources evaluates whether impacts of a project and related projects, when taken as a whole, would have significant environmental impacts on historical resources. If these projects would result in a significant impact, then the proposed project's contribution would need to be determined. The cumulative context for historic resources can be defined by a number of factors depending on the conditions and the presence or absence of known historic resources in the area. For the proposed project, the cumulative context for historical resources considers impacts to significant historical resources in Carlsbad. All of the projects are residential ranging from large single family housing developments to large multi-family dwelling units. Given the long history of Carlsbad and the number of historic-age buildings and structures throughout the city it is possible that historical resources may be significantly impacted as a result of at least 1 of the 11 projects that constitute the cumulative context.

As discussed above, the proposed project would not contribute to environmental impacts on any historic architectural resources qualifying as historical resources under CEQA, either to resources within the project site or to off-site historical resources within the surrounding area. For these reasons, the proposed project would not make a cumulatively considerable contribution to potentially significant cumulative impacts to historic architectural resources qualifying as historical resources under CEQA. Therefore, the proposed project, considered together with related projects, would have a less-than-significant cumulative impact on historic resources.

The cumulative context for archaeological resources, which may also be historical resources under CEQA, is a 1-mile radius and corresponds with the project study area. Within these areas, the context has been defined by the known archaeological resources or level of archaeological sensitivity in the area. The site and its vicinity have 41 recorded prehistoric archaeological sites within 1-mile of the project site which is a high density of prehistoric archaeological sites. In addition, unknown, subsurface, historic or archaeological resources, some of which may be historical resources under CEQA, could be preserved under the surface of vacant land or under the current development. As such, development in these areas could have a potentially significant cumulative impact to archaeological resources. While the project site is not known to currently contain archaeological resources, it is possible that the project site could contain previously undiscovered archaeological resources. The proposed project could have a cumulatively considerable contribution to the loss of archaeological resources.

The cumulative context for the discovery of human remains is 1-mile. Based on the Sacred Lands File search and sensitivity analysis for cultural resources, there are no known burial grounds or unmarked cemeteries in, or within a 1-mile radius of the project site; however, three archaeological sites are known to have contained human remains within 1-mile of the project site and the overall sensitivity of the area, with respect to human remains, is high. Grading and excavation associated with the proposed project would extend into previously undisturbed subsurface areas or other locations where there is some possibility to encounter buried human remains. The proposed project site is not known to contain any unmarked graves or human remains. However, the loss of any previously unknown human remains would be significant, and the proposed project would have a considerable contribution to a significant impact.

In summary, the proposed project could create cumulative considerable contributions to impacts on historic architectural resources, loss of archaeological resources, and/or loss or damage to important or significant human remains. These potential contributions to cumulative impacts could be considerable without mitigation, and therefore are potentially significant.

The cumulative context for tribal cultural resources is within the Luiseño Tribal territory, which encompasses land within Orange and San Diego Counties. The city is included within the Luiseño Tribal territory and has been subject to historic development within the city since the rancho period, with more wide scale development occurring at the turn of the century. The Luiseño Tribal territory has been subject to wide scale development and redevelopment projects over the past several decades and is currently experiencing a high level of redevelopment projects. Known tribal village locations and known significant prehistoric archaeological sites that have a higher potential to represent a tribal cultural resource are mapped and documented in a high density within a 1-mile radius of the project site. As such, development in these areas could have a significant impact to a tribal cultural resource. Cumulatively, the large amount of development within the tribal territory, especially development within known village locations and known significant prehistoric archaeological sites could have significant and unavoidable impacts to tribal cultural resources. All related projects would, like the proposed project, be required to comply with regulatory requirements governing tribal cultural resources, including consultation with California Native American tribes where required under AB 52. Should an impact be identified, the related projects would be required to comply with PRC Section 21084.3,

which would require avoidance and preservation or mitigation as defined in PRC Section 21084.3(b).

As described above, the proposed project could result in a significant impact on a previously unknown tribal cultural resource. While there are no tribal cultural resources identified within the project site, the city has consulted with tribal representatives and recognizes the potential sensitivity. Based on the above considerations, the proposed project, in conjunction with cumulative development within the project vicinity and in the city, could result in cumulatively considerable impacts to tribal cultural resources. Therefore, the cumulative impact would be potentially significant.

Mitigation Measure CUL-1, which requires the implementation of a cultural resources monitoring and recovery program, including participation of Native American groups with interest in the project site, would address this potentially significant cumulative impact by ensuring the project's contribution to cumulative cultural impacts would be addressed. Specifically, this measure would ensure that monitoring would address any unknown, subsurface archaeological and historic resources or human remains during construction and that the resources would be identified, evaluated and treated promptly before they can be damaged or destroyed. Mitigation Measure CUL-1 is consistent with the Tribal, Cultural, and Paleontological Guidelines (City of Carlsbad, 2017a: pp 75-77). Therefore, with implementation of this mitigation measure, cumulatively considerable impacts to cultural resources would be avoided.

6.1.5 Energy

Electricity

The geographic context for the cumulative analysis of electricity is the San Diego Gas & Electric (SDG&E) service area. The proposed project's electricity demand would only comprise 0.0034% of SDG&E's forecasted load for 2023.

Future development would result in the irreversible use of electricity resources that could limit future energy availability. However, SDG&E, through its Long Term Procurement Plan and Renewable Portfolio Standard Procurement Plan, actively plan to meet its load requirement via the use of long-term planning models to assist in future procurement operations for electricity generation or purchasing decisions, including to meet its obligations for renewable energy sources (SDG&E, 2009; SDG&E, 2018). Furthermore, like the proposed project, other future development projects would be expected to incorporate energy conservation features, comply with applicable mandatory regulations including CALGreen Code and state energy standards under Title 24, and incorporate mitigation measures, as necessary to reduce consumption rates of energy resources. Therefore, the proposed project would not have a cumulatively considerable impact on existing energy resources either individually or incrementally and impacts would not be cumulatively considerable.

Natural Gas

The geographic context for the cumulative analysis of natural gas is the SDG&E's service area. The proposed project's natural gas demand of 2.44 million kBtu per year would be 0.002% of SDG&E's projected demand in 2023. Gas throughput is expected to slightly decline from 2019 to 2023, ranging from 287 million cubic feet (MMCF)/day to 302 MMCF/day (California Gas and Electrical Utilities, 2018).

Although future development projects would result in irreversible use of natural gas resources that would limit future availability, the use of such resources by the proposed project would be on a relatively small scale and would be consistent with regional and local growth expectations for SDG&E's service area. Further, like the proposed project, other future development projects would be expected to incorporate energy conservation features, comply with applicable mandatory regulations including CALGreen and State energy standards in Title 24, and incorporate mitigation measures, as necessary. Therefore, the proposed project would not have a cumulatively considerable impact related to natural gas consumption and impacts would not be cumulatively considerable.

Transportation Energy

The geographic context for the cumulative analysis of transportation energy is the SANDAG regional area. Growth within this area is anticipated to increase the demand for transportation and the need for infrastructure, such as new or expanded facilities.

Buildout of the proposed project and related projects in the region would be expected to increase overall vehicle miles traveled (VMT); however, the effect on transportation fuel demand would be minimized by future improvements to vehicle fuel economy pursuant to federal and state regulations. By 2025, vehicles are required to achieve 54.5 miles per gallon (mpg) (based on United States Environmental Protection Agency [EPA] measurements), which is a 54% increase from the 35.5 mpg standard in the 2012–2016 standards. As discussed previously, the proposed project would incorporate transportation demand management measures to reduce single-occupant VMT consistent with the city's General Plan Mobility Element. The proposed project would also place high-density residential development in an urbanized area, which is consistent with the growth forecasts in SANDAG's Regional Plan and SB 375. Related projects would also need to demonstrate consistency with SANDAG's goals and incorporate mitigation measures as required under CEQA, which would ensure cumulative projects contribute to transportation energy efficiency. Therefore, the proposed project would not have a cumulatively considerable impact related to transportation energy, and impacts would not be cumulatively considerable.

6.1.6 Geology and Soils

The geographic scope considered for the cumulative analysis of seismic hazards is the San Diego County region. The San Diego County region is considered at high risk for seismic activity where a seismic event can effect areas located relatively far away. According to the United States Geological Survey, there is a very high probability of an earthquake (96% of one or more events with magnitude of at least 6.7) occurring over the next 30 years within the Southern California

region. Future project development at the project site and elsewhere in the County could expose additional people and structures to potentially adverse effects associated with earthquakes including seismic ground shaking and seismic-related ground failure. However, while the regional seismic hazard related to the presence of numerous active faults is high, the effects are generally site-specific and can vary from site to site depending on a number of factors, such as the characteristics of underlying materials and distance to the causative fault. All site-specific geotechnical studies required by a local jurisdiction would determine how future development projects could be designed to minimize exposure of people to these impacts and other non-seismic hazards (e.g., expansive soils, settlement, landslides, and erosion). Therefore, future development would be constructed to more current standards that could potentially provide greater protection than those of older structures throughout the region. Other current and future projects within the region would also be required to adhere to current California Building Code (CBC) with seismic design criteria that incorporates the most current science and understanding of geotechnical and seismic hazards such that damage or injury would be minimized. Therefore, development of the proposed project would not be cumulatively considerable and the impact would be less than significant.

Lands in the vicinity of the proposed project that are underlain by formations that could contain fossil remains are considered the geographic scope for cumulative impacts for paleontological impacts. Specifically, in consideration of the project site, those lands that could be underlain by the Santiago Formation comprise the geographic scope for cumulative analysis since this is the formation in the project vicinity that has been found to contain significant fossil resources. It is possible that development in the vicinity of the project site within areas that are underlain by the Santiago Formation could result in the demolition or destruction of significant paleontological resources. The proposed project could contribute to this potential cumulative impact if paleontological resources are located beneath the project site and they were damaged or destroyed during the excavation process. If this event were to occur at the project site and similar impacts occurred in the vicinity of the project site, the proposed project could contribute to a significant cumulative impact. If this occurred, the project's impact would be cumulatively considerable and impacts would be potentially significant.

However, all projects in the City of Carlsbad will be subject to the City of Carlsbad's guidelines for paleontological resources (City of Carlsbad, 2017) which provides for mitigation programs to address the effects of cumulative development. If a project is determined to be within the Santiago Formation or other formations determined to have a high sensitivity for paleontological resources, the guidelines provide appropriate mitigation to address potential impacts to these resources.

Further, Mitigation Measure GEO-1 (which requires the implementation of a paleontological resources monitoring, recovery and treatment program for the proposed project) would address the potentially significant contribution to cumulative paleontological impacts by ensuring the project's impacts are minimized. Specifically, a Principal Paleontologist would be directly involved in the pre-construction and construction processes and would conduct a paleontological resource contractor awareness training workshop to be attended by earth excavation personnel. As well, the Principal Paleontologist would oversee the implementation of required monitoring,

recovery, and treatment of resources within both the West Parcel and East Parcel. The program would include the collection/recovery, sorting, repair, and cataloging of fossils. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, would be deposited (as a donation) in the designated fossil repository. Donation of the fossils would also be accompanied by financial support for initial specimen storage. Therefore, with implementation of this mitigation measure, cumulatively considerable impacts to paleontological resources would be avoided.

6.1.7 Greenhouse Gas Emissions

The geographic scope of the cumulative impact analysis varies depending upon the environmental issue being analyzed. Climate change occurs on a global level and the significance of a project's GHG emissions is inherently cumulative in nature.

As determined in section 4.7.4, the proposed project would be consistent with the city's General Plan, SANDAG's San Diego Forward: Regional Plan, and other state and federal rules and regulations related to GHG emissions. The other projects being considered for cumulative impacts will not conflict with the city's General Plan. The proposed project's GHG emissions were compared to an extrapolated 2023 efficiency metric threshold and were found to be less than significant. As a result, the proposed project would be consistent with the State's GHG reduction targets for 2020 and 2030 with progress towards the 2050 target per EO S-3-05. Therefore, the proposed project's incremental contribution would not be cumulatively considerable, and cumulative GHG impacts would be less than significant.

6.1.8 Hazards and Hazardous Materials

Cumulative hazardous materials effects could occur if activities at the project site and other past, existing, and proposed development, together, could significantly increase risks in the regional vicinity of the project site. However, most hazardous materials activities at the project site would likely involve relatively small quantities of hazardous materials both in interior and exterior settings. Any health or safety effects of routine hazardous materials use would be limited to the specific individuals using the materials and anyone in the immediate vicinity of the use. No interaction would occur between these routine activities and similar activities at different sites either during construction or operation.

Cumulative health and safety impacts could occur if project-related outdoor or off-site hazards were to interact or combine with those of other existing and proposed development. This could only occur through the following mechanisms: air emissions; transport of hazardous materials and waste to or from the project site; inadvertent release of hazardous materials to the sanitary sewer, storm drain, or non-hazardous waste landfill; and potential accidents that require hazardous materials emergency response capabilities. Air emissions are addressed in Section 4.2, *Air Quality*. The proposed project as well as other past, present, and future projects would be required to adhere to existing regulatory requirements for the appropriate handling, storage, and disposal of hazardous materials that are designed to minimize exposure and protect human health and the environment. Cumulative increases in the transportation of hazardous materials and wastes would

cause a less than significant impact because the probability of a hazardous materials accident is relatively low, and the adherence to existing transportation and packaging regulatory requirements minimizes the consequences of potential accidents. In addition, all projects in the area would be required to comply with the same laws and regulations as the proposed project. This includes federal, state, and local regulatory requirements for transporting (Cal/EPA and Caltrans) hazardous materials or cargo (including fuel and other materials used in all motor vehicles) on public roads or disposing of hazardous materials (Cal/EPA, DTSC, HMD). Therefore, cumulative health and safety impacts associated with the proposed project would be less than significant.

6.1.9 Hydrology and Water Quality

The geographic scope of analysis for cumulative impacts related to hydrology and water quality would be the Carlsbad Hydrologic Unit. Cumulative projects have the potential to discharge pollutants, including erosion and siltation, off-site during construction and operational activities, which could further degrade the receiving waters within the Hydrologic Unit.

However, similar to the proposed project, cumulative projects would be required to implement project-specific BMPs and drainage control requirements to comply with federal, state, and water quality regulations. These regulations include, but are not limited to, the National Pollutant Discharge Elimination System (NPDES) General Construction Permit, the regional NPDES Municipal Separate Storm Sewer System (MS4) permit, and the city's Storm Water Management and Discharge Control Ordinance (Chapter 15.12), and the city's Engineering Standards.

The drainage control features of the proposed project would reduce stormwater discharges from the site and therefore, the project would not contribute to a cumulative hydrology and water quality impact. As a result of the regulatory framework that exists to regulate the quality of water discharges from the project site and other cumulative projects within the Hydrologic Unit, implementation of the proposed project would have a less than significant cumulative impact related to hydrology and water quality.

6.1.10 Land Use and Planning

The geographic scope of the cumulative impact analysis for land use and planning is the city of Carlsbad. The other projects being considered for cumulative impacts must demonstrate consistency with the city's General Plan or seek a General Plan Amendment to ensure conformity. Achievement of orderly growth will be dependent upon development in the future occurring in a manner consistent with the city's General Plan, GMP, and development regulations. Because the city has adopted these plans, and will continue to review proposed development to avoid inconsistencies with applicable land use plans and any significant effects on the environment associated with inconsistencies, cumulative land use impacts would be less than significant. The proposed development has been determined to be compatible with the existing surrounding land uses as well as approved and anticipated land uses. In addition, the analysis above has determined that the proposed project would not result in inconsistencies with applicable land use plans, and thus no significant effects on the environment associated with

inconsistencies, would occur. Therefore, the proposed project would not contribute considerably to cumulative land use impacts, and cumulative land use impacts would be less than significant.

6.1.11 Noise and Vibration

The geographic context for the analysis of cumulative noise impacts depends on the impact being analyzed. Noise is by definition a localized phenomenon, and sound reduces significantly in magnitude as the distance from the source increases. As such, only projects expected to occur in the immediate area surrounding the project site likely would contribute to cumulative noise impacts. The cumulative projects nearest to the project site are the West Oaks project located over 2,000 feet to the southeast of the project site and the Crossings project location over 2,000 feet to the north of the project site.

Construction Noise

As discussed above, noise from construction of the proposed project would be localized, thereby potentially affecting areas immediately within 500 feet from the project site. Construction noise associated with related projects could also affect their immediate surroundings. The nearest cumulative projects are located over 2,000 feet to the southeast (West Oaks project) and north (The Crossings) of the project site. No other projects in the surrounding area have been identified within approximately 500 feet of the project site. At these distances, construction-related noise from those projects would be attenuated by distance and by partially or fully blocking the line-of-sight due to topography and intervening structures, such that the noise would not combine with construction noise from the project to result in cumulatively significant construction noise impacts. Therefore, cumulative construction noise impacts would be less than significant.

Operation Noise

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the proposed project and other projects in the area surrounding the project site. The city's Noise Guidelines Manual establishes noise evaluation process that identifies an increase in existing noise level of more than 3 dBA Community Noise Equivalent Level (CNEL) as a possible indicator for noise impacts where additional analysis should be conducted (City of Carlsbad, 2013). Therefore, the significance threshold for operational mobile source noise is based on human perceptibility to changes in noise levels (increases) with consideration of existing ambient noise conditions based on a 3 dBA CNEL increase in existing noise level as a possible indicator for noise impacts in which case additional analysis is conducted. Therefore, cumulative traffic-generated noise impacts have been assessed based on the contribution of the proposed project to the future cumulative base traffic volumes in the area surrounding the project site. The noise levels associated with cumulative base traffic volumes with the proposed project are identified above in Table 4.11-7, *Traffic Noise Levels*. A maximum noise level increase of 1.3 A-weighted decibels (dBA) from existing to 2020 cumulative plus project conditions would occur on Aviara Parkway south of Laurel Tree Lane, which is below the 3 dBA threshold (for mobile source noise based on human perceptibility to changes in noise levels). As shown in Table 4.11-7,

all other analyzed roadway segments would result in a noise level increase of less than 1.5 dBA and below the 3 dBA threshold.

In accordance with the city's Transportation Impact Study Guidelines, a horizon year traffic volume analysis (beyond the 2020 cumulative year) is not required as the proposed land uses that comprise the proposed project are consistent with the General Plan. However, due to future growth in the area surrounding the project site, traffic volumes on local roadways in the project study area in the future (beyond 2020) would be greater than those under the existing and 2020 conditions. Under this future condition, project-related traffic volume increases would contribute to a smaller percentage of the future cumulative traffic volumes. Based on the existing and 2020 scenarios, project-related traffic noise level increases would be less than 3 dBA along roadway segments analyzed in the project study area. Therefore, future cumulative traffic noise impacts would be less than significant.

For these reasons, with respect to roadway noise, the proposed project's contribution to cumulative impacts would not be cumulatively considerable, and cumulative impacts would be less than significant.

The city's Noise Ordinance (Carlsbad Municipal Code [CMC] Section 21.31.080.G) limits noise from non-transportation sources. Required compliance with the city's Noise Ordinance would ensure that noise levels would be less than significant at the property line for each related project. For this reason, on-site operational noise produced by any project would not result in a substantial or noticeable additive increase to noise levels related to the proposed project. Furthermore, as previously discussed, the nearest cumulative projects are located over 2,000 feet to the southeast (West Oaks) and north (the Crossings) of the project site. At these distances, on-site operational noise from those projects would be attenuated by distance, topography, and intervening structures, such that the cumulative project noise would not combine with noise from the proposed project to result in cumulatively significant operational noise impacts. As the proposed project's composite on-site operational noise impacts would be less than significant, its contribution to cumulative impacts would not be cumulatively considerable, and cumulative impacts would be less than significant.

Vibration

With respect to vibration, the nearest residential building contains the multi-family residences to the south of the proposed project, which is approximately 60 feet from the project site. These residences would be exposed to project-related vibration velocities below the Caltrans vibration thresholds. As discussed above, the nearest cumulative projects are located over 2,000 feet to the southeast (West Oaks) and north (the Crossings) of the project site. At these distances, vibration from these cumulative projects would be attenuated to below the level of perceptibility and below the significance threshold and would not combine to result in cumulatively significant vibration impacts. As such, the proposed project would not result in a cumulatively considerable vibration impact at the nearest sensitive receiver location.

6.1.12 Population and Housing

Cumulative projects in the general project vicinity include a variety of residential, industrial, and commercial projects. The nearest related project would be the West Oaks Multi-family project, which is southeast of the project site. All of these projects have the potential to result in substantial unplanned population growth either directly with development of additional housing units or indirectly through extension of roads or other infrastructure, which could result in cumulatively significant impacts.

The geographic context for the analysis of cumulative impacts associated with population and housing is the City of Carlsbad. As stated above, operation of the proposed project would provide approximately 329 dwelling units, resulting in an estimated population increase of 776 persons. Similar to the proposed project, development of the cumulative projects would contribute to population growth within the city, either directly by providing additional housing within the city or indirectly. Development of the residential projects would provide additional housing units within the city, which would increase the city's population. However, development of these residential projects would contribute additional housing units to the city's existing housing stock, which would help the city achieve its Regional Housing Needs Assessment goal of providing an additional 4,999 housing units by 2021. Furthermore, development of non-residential projects could also indirectly induce population growth by increasing employment opportunities within the city. It is likely that any new employment opportunities would be filled by local or regional residents and not result in an influx of new people to the area. In addition, the General Plan accounts for additional growth within the city, as it forecasts the city's population to increase to 118,241 residents by 2020, which would be an increase of 3,619 people from 2018. Therefore, the cumulative population growth which would occur with the development of the proposed project in combination with related projects have generally been included in the growth estimates for the city and has been accounted for in the General Plan. In regards to cumulative indirect growth, none of the related cumulative projects would amend the General Plan Land Use Designations and thus, all would implement development anticipated by the General Plan. Additionally, cumulative projects roads, utilities, and infrastructure facilities would be sized accordingly on a project-by-project basis and not result in indirect population growth.

As such, cumulative effects of the proposed project would not be cumulatively considerable. Thus, cumulative impacts related to population growth would be less than significant.

6.1.13 Public Services

The geographic scope of the cumulative impact analysis for public services is the city of Carlsbad. Cumulative projects in the general vicinity include a variety of residential, industrial, and commercial. The nearest related project would be the West Oaks multi-family project, which is southeast of the project site. However, all of these projects have the potential to increase the demand for public services, to increase the use of parks and recreational facilities, and to include or require the construction or expansion of recreational facilities. The geographic context for the analysis of cumulative impacts associated with public services is the City of Carlsbad, Local

Facilities Management Plan (LFMP) Zones and city's four quadrants. As stated above, operation of the proposed project would increase the demand for public services.

Similar to the proposed project, development of the cumulative projects, especially residential projects, would contribute to an increased demand for public services overall. However, development of these residential and other cumulative projects would require adherence to the policies put in place by the city to address cumulative growth, including those outlined in the appropriate LFMP as well as all other growth management policies. City- and state-level regulations require or allow the payment of appropriate Development Impact Fees and in-lieu fees, both of which are meant to offset the potential impacts associated with increased demand for public services. Therefore, potential impacts associated with the increased demand for public services, which would occur with the development of the proposed project in combination with cumulative projects, would be addressed on a project-by-project basis. As such, cumulative effects of the proposed project would not be cumulatively considerable. Thus, cumulative impacts related to public services would be less than significant.

6.1.14 Transportation

A full technical analysis of intersection and volume cumulative conditions is provided in Section 4.14, *Transportation*. For intersections, the Level of Service (LOS) was determined at the study area intersections for the AM and PM peak hours under baseline and with project conditions using the Highway Capacity Manual, 6th Edition methodology. Table 4.14-9, *Cumulative Conditions Levels of Service*, presents the Cumulative and Cumulative with Project conditions peak hour analysis. Similar to Existing Conditions, four of the five study intersections would operate LOS D or better in the Cumulative Conditions traffic scenario both with and without the addition of project traffic, which is considered acceptable operating conditions per the Traffic Impact Study Guidelines. The exception is Intersection No. 5, Aviara Parkway-College Boulevard/Palomar Airport Road, which would operate at LOS E during the AM peak hour and LOS F during the PM peak hour both with and without the proposed project. Based on the impact thresholds described in Section 4.14.3, no significant impacts would occur at the five study intersections as a result of the project in the Cumulative Conditions traffic scenario.

Table 4.14-10, *Cumulative Conditions Roadway Segment Levels of Service*, summarizes the forecast operating conditions at the study area roadway segments for Cumulative and Cumulative with Project conditions. Based on the impact thresholds described in Section 4.14.3, no significant cumulative impacts would occur at the five study roadway segments as a result of the proposed project.

Since the regulations of SB 743 have not been finalized or adopted by the city, delay and LOS are the measures used in this EIR to determine the significance of transportation impacts (see Impact 4.14-1 discussion a, above). As such, no further analysis is required and the proposed project's cumulative impact related to CEQA Guidelines Section 15064.3, subdivision (b) would be less than significant.

Potential hazards from design features or incompatible uses are location specific (e.g., internal parking layout, driveway design) and would not combine with other past, present, or reasonably foreseeable projects. The proposed project and other past, present, and reasonably foreseeable future projects must comply with local requirements for site access and design during the tentative subdivision map stage and/or the design permit process, which includes land use, circulation, and site access requirements that are specifically intended to avoid or reduce hazards from project design or location of incompatible uses. Therefore, the proposed project, in conjunction with other cumulative development, would not have a significant cumulative impact associated with an increase in hazards due to a design feature or incompatible use, and the proposed project's cumulative impact would be less than significant.

With regard to impairment of an adopted emergency response plan or emergency evacuation plan, all of the related projects in the area would be required to provide adequate emergency access in accordance with city Building and Fire Codes prior to the issuance of a building permit. As concluded in the discussion of project-related impacts, the proposed project does not interfere with emergency response. The provision of adequate emergency access is site specific and would not combine with other past, present, or reasonably foreseeable projects. The proposed project and other past, present, and reasonably foreseeable future projects must comply with requirements for emergency access, such as providing several vehicular access points and roadways of sufficient width to allow access and circulation by large emergency vehicles, such as fire engines. Therefore, the proposed project, in conjunction with other cumulative development, would not have a significant cumulative impact associated with emergency access, and the proposed project's cumulative impact would be less than significant.

6.1.15 Utilities and Service Systems

Water

The proposed project and the related cumulative projects located in the city would generate water demand during construction and operation that would require conveyance and treatment. Water demand during construction of the proposed project together with the cumulative projects would not exceed the capacity of the local water conveyance and treatment systems because the quantity of water required for construction activities (e.g., dust suppression, concrete mixing if to occur on-site, etc.) would be minimal and a temporary demand that would stop once construction is complete.

During operation, the proposed project and the related cumulative projects in the city would create a demand for water conveyance and treatment infrastructure capacity and would create a cumulative demand for potable and recycled water from the Carlsbad Municipal Water District (CMWD). However, both the proposed project and the cumulative projects would be required to obtain a water connection permit from the CMWD that would trigger city review of the proposed development's anticipated water demand and acknowledgement of adequate infrastructure capacity to provide the required water. As previously mentioned, cumulative projects would be required to demonstrate that adequate water is available to serve them, either through: 1) preparation of a water supply assessment (for larger projects meeting the size thresholds specified in the Water Code, sections 10910 to 10915 of the Water Code), or 2) through demonstration of consistency with the Urban

Water Management Plan (UWMP) for projects below the water supply assessment thresholds. As well, new projects would be required to comply with state and local water conservation regulations, including those adopted by CALGreen and the CMWD.

The proposed project did not meet the criteria for preparation of a water supply assessment; however, the project is consistent with the UWMP and its demand for water would be minimized through compliance with state and local water conservation regulations. Projected CMWD water supply is expected to match projected water demands within the CMWD service area through at least 2040. Lastly, all projects within the city would be required to meet the water conservation requirements of CALGreen and the CMWD, and to comply with CMWD's water conservation efforts that would reduce water demand to the extent feasible. Therefore, the proposed project would not contribute considerably to any cumulative need for new or expanded water conveyance and treatment facilities, the construction of which could cause significant environmental effects, and cumulative impacts would be less than significant and would not require new or expanded water supply resources or entitlements, and impacts on CMWD water supplies would not be cumulatively considerable.

Cumulative water infrastructure impacts are considered on a system-wide basis and are associated with the capacity of existing and planned infrastructure. The cumulative system discussed below includes the CMWD.

Wastewater

The proposed project and the related cumulative projects located in the city would generate wastewater during construction and operation that would require conveyance and treatment. Wastewater generated during construction of the proposed project together with the cumulative projects would not exceed the capacity of the local wastewater conveyance and treatment systems because: (1) construction worker wastewater would be collected in most instances by portable toilet operators rather than be conveyed by the local sewer system; and (2) the quantity of wastewater requiring treatment would be minimal, and in certain instances (such as with the proposed project) would be less than the amount of wastewater currently generated at the construction sites.

During operation, the proposed project and the related cumulative projects in the city would create a demand for conveyance capacity in the local sewer system and treatment capacity at the CMWD. Per LFMP Zone 5 requirements, the proposed project must pay the sewer benefit area fees as it is within the Encinas Creek sewer drainage basin, and the cumulative projects would be subject to similar fees for those that are in the same sewer drainage basin, which include the Crossings hotel and timeshare project, which has been approved; and the West Oaks Multi-family residential development, which is pending approval. Other related projects are found in LFMP Zones 1, 14, 15, 21, and 17, all of which would be subject to their respective zone requirements. Both the proposed project and the cumulative projects would be required to obtain a sewer connection permit from the city that would trigger city review of the proposed development's anticipated wastewater generation amount and acknowledgement of adequate capacity to provide wastewater conveyance and treatment. As previously mentioned, the city is served by the EWPCF which has a treatment capacity of 40.51 mgd. Carlsbad's current ownership capacity for

treatment at the EWPCF is 9.24 mgd (average flow). The 2012 Carlsbad Sewer Master Plan projected future 2035 wastewater flows to be approximately 10.0 mgd. According to the city's Fiscal Year 2017-2018 Growth Management Plan Monitoring Report, the annual daily average flow is 6.18 mgd (City of Carlsbad, 2017), such that substantial remaining treatment capacity (approximately 3 million gpd) exists at the EWPCF.

Lastly, an Offsite Sewer Analysis was prepared for the proposed project that indicates that adequate wastewater conveyance and treatment capacity is available to serve the proposed project. Therefore, the proposed project would not contribute considerably to any cumulative need for new or expanded wastewater conveyance or treatment facilities, the construction of which would cause significant environmental effects, and cumulative impacts would be less than significant.

Stormwater Drainage

As discussed in Section 4.9, *Hydrology and Water Quality*, the proposed project would use ground disturbing activities, including excavation and grading, which would alter the ground surface, consequently altering drainage patterns. All development in the city would be subject to drainage control requirements of the city's BMP (Best Management Practice) Design Manual which complies with the Regional NPDES MS4 permit and the city's Storm Water Management and Discharge Control Ordinance (Chapter 15.12). The proposed project, as well as the related cumulative projects, would be required to implement project-specific BMPs during construction and drainage control requirements to comply with federal, state, and local regulations related to water quality. Therefore, the proposed project would not contribute considerably to any cumulative impacts on local storm drain capacity, and cumulative drainage impacts would be less than significant.

Electricity and Natural Gas

The proposed project, along with the related cumulative projects located within the SDG&E service area, would together create a cumulative demand for electricity and natural gas from SDG&E. Any construction of electrical and/or natural gas lines associated with future development in the city, including the proposed project and related cumulative projects, would occur in accordance with the city's permitting processes and construction standards. All projects within the city would be required to meet the energy efficiency requirements of the 2016 California Building Energy Efficiency Standards Code and additional city permitting processes and construction standards to avoid or minimize impacts on environmentally sensitive habitat areas and landforms through siting, grading or excavation, and erosion.

Therefore, the proposed project together with the cumulative projects in the SDG&E service area would not require new or expanded electrical and natural gas facilities, and impacts would be less than significant.

Solid Waste

The proposed project and the related projects would generate construction- and operations-related solid waste requiring disposal at Class III landfills serving the city. The proposed project in combination with the related projects would be expected to generate solid waste that could affect the ability of the landfills serving the city to accommodate solid waste over the long-term. Still, the landfills serving the city have sufficient capacity such that the proposed project plus cumulative solid waste requiring landfilling would represent a negligible proportion of the city's remaining disposal capacity. Specifically, Otay Landfill and Sycamore Landfill have remaining life spans of 11 years and 34 years, respectively. In addition, as with the proposed project, the related projects would be required to comply with applicable waste diversion requirements that would substantially reduce the amount of solid waste requiring landfill disposal. For all these reasons, cumulative impacts on landfill capacity would be less than significant.

As with the proposed project, the related projects would be required to comply with applicable regulations related to solid waste, including those pertaining to waste reduction and recycling. In accordance with CALGreen Code, the proposed project and all related projects would submit a WMP for construction solid waste meeting city requirements as part of their application packets for demolition permits. Construction and operational activities would achieve diversion rates of at least 60% and 75%, respectively, through source reduction, recycling, composting and other methods. As required by AB 1327, the proposed project and related projects would provide recycling areas and recycling bins. Lastly, in accordance with AB 1826, the proposed project and the related projects meeting the size criteria would provide separate recycling bins for organic waste, and would arrange for organic waste recycling services. Therefore, the proposed project would comply with applicable solid waste regulations, and the impact would be less than significant.

6.1.16 Wildfire

With regard to impairment of an adopted emergency response plan or emergency evacuation plan, all of the related projects in the area would be required to provide adequate emergency access in accordance with city Building and Fire Codes prior to the issuance of a building permit. As concluded in the discussion of project-related impacts above, the proposed project would have a less than significant impact related to impairment of the adopted Hazard Mitigation (HAZMIT) Plan and Operational Area Emergency Operations Plan. Additionally, although the project is not within a State Responsibility Area (SRA) or Local Responsibility Area (LRA) within a Very High Fire Hazard Severity Zone (FHSZ), a Fire Master Plan and Conceptual Fuel Modification Plan were prepared and approved in compliance with the 2016 Landscape Manual. Similar to the project, related projects in the area would review applicable plans and determine compliance on a project-to-project basis. As such, the proposed project and related projects, all of which would be required to comply with the HAZMIT Plan, Operational Area Emergency Operations Plan, and 2016 Landscape Manual, would not result in a cumulative impact to an adopted emergency response plan or emergency evacuation plan and thus would result in a less-than-significant cumulative impact.

With regard to cumulative impacts related to exposure of project-associated occupants to pollutant concentrations from a wildfire, given that cumulative projects could be located within or near SRA or LRA Very High FHSZs and within areas characterized by hills and mountains, those project characteristics would be evaluated and would be required to adhere to state and local Fire Codes to reduce wildfire risk and exposure of occupants to pollutant concentrations from a wildfire. Adherence to city Building and Fire Codes would minimize potential impacts related to exposure to and the uncontrolled spread of a wildfire. As concluded in the discussion of project-related impacts above, the proposed project would incorporate fire prevention measures and designs detailed in the approved Fire Master Plan and Conceptual Fuel Modification Plan, and thus result in less than significant impacts related to exposure of project-associated occupants to pollutant concentrations from a wildfire, and, because each related project would need to comply with state and local law, thus, would result in a less than significant cumulative impact.

Related projects may require associated infrastructure, such as roads, fuel breaks, and power lines, that could exacerbate fire risk or result in temporary or ongoing impacts to the environment. These projects would be reviewed by their respective jurisdictions for land use and zoning consistency, compliance with applicable requirements, and potentially analyzed for environmental impacts. The placement of infrastructure would be required to adhere to all building and fire codes to minimize potential fire risk. As determined in the discussion of project-related impacts above, the proposed project would not require installation of associated infrastructure that would exacerbate fire risk and would adhere to Building and Fire Code through requirements detailed in the Fire Master Plan and Conceptual Fuel Modification Plan. As such, the proposed project and related projects would not result in a cumulative impact related to the installation or maintenance of associated infrastructure.

Some related projects could be proposed in areas that would expose people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire instability. All projects would be required to adhere to their respective jurisdiction's zoning and land use designations and codes, State and local Fire and Building Codes, and regulations associated with drainage and site stability. These regulations, policies, and codes would reduce the potential for exposing people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire instability. Each project would require site-specific hydrology and drainage studies for effective drainage design. As concluded in the discussion of project-related impacts above, due to implementation of a Stormwater Pollution Prevention Plan, conclusions of the drainage study, grading plan drainage control measures, final design level Geotechnical Report, and project's consistency with the most recent version of the CBC, the proposed project would not expose people or structures to significant risks due to post-fire slope instability or drainage changes and would have a less than significant impact. As such, the proposed project and related projects would not result in a significant cumulative impact related to exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes.

6.2 Growth Inducing Impacts

Discussion of growth-inducing impacts is required by the State CEQA Guidelines Section 15126.2(d). Growth inducement refers to the “ways in which a project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.” This typically includes projects that will remove obstacles to population growth, for example, as a result of the provision of public services to undeveloped areas. It must not be assumed that growth in any area is necessarily beneficial or detrimental in its effect on the environment, or that it has an insignificant effect. Each project must be evaluated on its own merit.

Typically, the growth-inducing potential of a project would be considered significant if it stimulates human population growth or a population concentration above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Significant growth potential could also occur if the project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

As discussed below, the analysis evaluates whether the proposed project would directly or indirectly induce economic, population, or housing growth in the surrounding environment.

6.2.1 Direct Growth Inducing Impacts in the Surrounding Environment

The project site is designated by the General Plan as R-30, Residential (23–30 du/ac), which accommodates higher-density residential land uses (City of Carlsbad, 2017a). Based on the project site’s General Plan designation of R-30, and the project site’s size of approximately 9.5 acres, the project site would be permitted 285 units dwelling units. However, Table A of Planning Commission Resolution No. 7114 allocates 224 units from the Excess Dwelling Unit Bank to the project site. The proposed project is requesting an increase in density to 40 du/ac and an increase of 105 dwelling units to the 224 units initially allocated to the site. As reported in the October 2019 City of Carlsbad Development Monitoring Report, the Excess Dwelling Unit Bank has 1,357 potential additional dwelling units available to allocate citywide. Additionally, the proposed project is within the Local Facilities Management Plan (LFMP) Zone 5 Southwest Quadrant, which has 1,232 remaining future units.

The proposed project would include 329 housing units. Of the proposed 329 housing units, 25% (or 82 units) would be affordable units, thereby qualifying for the density increase allowed by city policy. Per CMC Section 21.85.100, the city is able to provide a density increase and development standards modifications to developers that provide affordable housing in excess of the requirements of CMC Chapter 21.85 pursuant to a Site Development Plan per CMC Section 21.53.120. With submittal of a Site Development Plan and Affordable Housing Agreement to the city for review and approval, and with the approval by the city for the requested density increase, the proposed project would be consistent with the city’s R-30 General Plan land use designation for the project site.

The 2017 update of the 2013-2021 Housing Element was reviewed to determine if the proposed project would exceed the dwelling unit limits established by the GMP and Proposition E. With respect to the quadrant caps, the southwest quadrant of LFMP Zone 5 has 1,232 remaining future housing units. Therefore, the proposed project's 329 residential units would not exceed the southwest quadrant's remaining future unit limits established by the GMP and Proposition E.

The proposed project is consistent with the growth management projections for the Southwest Quadrant of the city, as the proposed project will not result in an increase of the number of dwelling units and population above the level anticipated by the city's General Plan and Growth Management Ordinance. The LFMP process includes restrictions on the timing and phasing of development in relation to the provision of community services and infrastructure. The city's GMP policies, which are enforced in the LFMPs, would continue to monitor growth in the area to maintain adequate levels of service for the people living in Carlsbad. With the incorporation of the LFMP process and the city's GMP policies, development cannot proceed until adequate infrastructure is financially guaranteed to meet demand. Implementation of the proposed project would not result in the alteration of growth patterns within the city from that anticipated in the adopted General Plan.

The proposed project would provide new employment opportunities, primarily through employment of temporary construction workers and maintenance personnel and property management staff during project operation. The short-term nature of the construction jobs is not anticipated to lead to significant long-term population growth in the region. These jobs would be limited in number; it would be expected that these employees are already present in the region. The proposed project would not need to recruit substantial numbers of new employees living elsewhere to the region.

Construction of the proposed project would not cause direct population growth as the workforce already exists in the region. In addition, the proposed project is located in an urbanized area and is adequately served by the existing infrastructure.

6.2.2 Indirect Growth Inducing Impacts in the Surrounding Environment

A project would indirectly induce growth if it would increase the capacity of infrastructure in an area in which the public service currently meets demand. Examples include increasing the capacity of local utilities or proposing roadway improvements beyond those needed to meet existing demand.

The proposed project could potentially induce indirect population growth through the creation of temporary and limited permanent jobs and increased residential opportunities. However, as described in Section 4.12, *Population and Housing*, this growth is consistent with SANDAG's projections for local and regional growth and is consistent with city plans and policies. As described within Section 4.14, *Transportation*, and Section 4.15, *Utilities and Service Systems*, the proposed project would not size utilities beyond their demand for services nor would it extend new public roads to areas that are currently inaccessible. Furthermore, the proposed project would

not result in a need for new public facilities, as discussed in Section 3.12, *Public Services*. Police and fire protection services, parks, libraries, and schools are all sufficient to serve the project site and would not necessitate expansions or improvements that would remove barriers to additional future growth. Limited infrastructure currently exists on the project site, but the entire project site would be fully developed as part of the proposed project. Infrastructure and proposed improvements would include circulation and access improvements, a private sewer lift station, a private domestic water system, and a private fire protection system. For these reasons, the proposed project would not result in substantial indirect growth inducement.

6.3 Significant Irreversible Environmental Changes

CEQA Guidelines Section 15126.2(d) requires that an EIR analyze the extent to which a proposed project's primary and secondary effects would impact the environment and commit nonrenewable resources to uses that future generations would not be able to reverse. "Significant irreversible environmental changes" include the use of nonrenewable natural resources during the initial and continued phases of the project, should this use result in the unavailability of these resources in the future. Primary impacts and, particularly, secondary impacts generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with a proposed project. Irrecoverable commitments of these resources are required to be evaluated in an EIR to ensure that such consumption is justified.

Approval of the proposed project would cause irreversible environmental changes consisting of the following:

- Commitment of land that will involve a large commitment of nonrenewable resources: The proposed project would result in the development of the site for residential uses. The proposed project represents a continued commitment of land to urban uses, which intensifies land use on the project site. Once developed, reverting to a less urban use is highly unlikely. Development of the project site will constrain future land use options.

Use of various nonrenewable natural resources such as diesel, gasoline, or oil for construction equipment and natural gas or other fossil fuels used to provide power and heating sources. Several irreversible commitments of limited resources would result from implementation of the proposed project. The resources include, but are not limited to, the following: lumber and other forest products; sand, gravel, and concrete; asphalt; petrochemical construction materials; steel, copper, and other metals; and water consumption. The use of these resources would represent an incremental effect on the regional consumption of these commodities.

- Increased requirements of public services and utilities which represent a permanent commitment of these resources: There would be an adequate supply of water and wastewater resources to supply the proposed project and the ability to provide fire protection, police protection, school services, library services, park and recreation facilities, and solid waste services (see Sections 4.13, *Public Services*, and 4.15, *Utilities and Service Systems*).
- The energy consumed in developing and maintaining the project site may be considered a permanent investment. The proposed project would not use nonrenewable fossil fuels at a greater rate than other typical construction projects, during construction and operation.

6.4 Unavoidable Significant Environmental Impacts

CEQA Guidelines Section 15126.2(c) requires that an EIR describe any significant impacts that cannot be avoided, including those impacts that can be mitigated but not reduced to a less than significant level. Chapter 4, *Environmental Impact Analysis*, of this EIR describes the potential environmental impacts of the proposed project and recommends mitigation measures to reduce impacts, where feasible. Analysis of environmental impacts caused by the proposed project has been performed, and is contained in Chapter 4, *Environmental Impact Analysis*, of the EIR. Based on this analysis, no unavoidable significant environmental impacts are identified with the implementation of the proposed project. All impacts would be mitigated to a less-than-significant level.

6.5 Effects Found Not to be Significant

In accordance with Section 15128 of the CEQA Guidelines, an EIR must contain a statement briefly indicating the reasons that various potential significant effects of a project were determined not to be significant. The city has determined that the proposed project would not have the potential to cause significant adverse effects associated with the topics identified below. Therefore, these topics (or subtopics) are not addressed in Chapter 4, *Environmental Impact Analysis*, of this EIR; however, the rationale for eliminating these topics is briefly discussed below.

6.5.1 Aesthetics

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

There are no officially designated State scenic highways within proximity to the project site. The nearest officially designated State scenic highways are Highway 125, 30 miles to the southeast, and Highway 163, 26 miles slightly to the southeast (Caltrans, 2019). The nearest eligible State Scenic Highway is Interstate 5, located approximately 0.9-mile west of the project site (Caltrans, 2019). No rock outcroppings or historic buildings eligible for national or state designation are located on or near the project site. The existing warehouse on the project site was built in 1968. Since the warehouse is greater than 45 years old, a historic evaluation was conducted. The warehouse was recommended as ineligible for listing on federal, state, or local registers and would not qualify for listing on the National Register of Historic Places (NRHP) (Helix Environmental Planning, 2017). Additionally, although trees may be removed during project construction, the project site is not located within or near a State designated scenic highway and the existing trees are not considered a scenic resource. However, tree removal is further discussed in the Biological Resources section of this EIR. Therefore, the proposed project would not substantially damage scenic resources within a State Scenic Highway and no impact would occur. As such, this issue will not be further discussed in the EIR.

6.5.2 Agriculture and Forestry Resources

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

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

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

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

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

The project site is located in an urban area, and is zoned as RD-M, which is not an agricultural zoning designation. No existing agricultural lands, agriculturally-zoned lands, or forest lands are located on the project site or within the project vicinity. Therefore, the proposed project would not cause the conversion of Farmland or forest land to non-agricultural use. No impact to agriculture and forestry resources would occur. As such, this issue will not be further discussed in the EIR.

6.5.3 Geology and Soils

Would the proposed project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The proposed project would require the installation of a private sewer lift station at the West Parcel due to elevation and grade separation (Dexter Wilson Engineering, Inc., 2017) but would not require a septic or other alternative wastewater disposal system. There would be no impact and this issue will not be discussed further in the EIR.

6.5.4 Hazards and Hazardous Materials

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

The school nearest to any component of the project site is the Pacific Rim Elementary School (1100 Camino De Las Ondas) located approximately 0.55 miles south of the site. The daycare closest to the project site is the MAAC Day Care (1307 Laurel Tree Lane) at the Laurel Tree

apartments located approximately 285 feet south of the East Parcel. In addition, the Poinsettia KinderCare (1200 Plum Tree Road) is approximately 0.37 miles southwest of the site. However, the proposed project would not involve the use of substantive quantities of hazardous materials and would not have any emissions that are inconsistent with school operations. Therefore, the potential impact to this sensitive receptor would be considered less than significant.

6.5.5 Hydrology and Water Quality

Would the proposed project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

A seiche is an oscillation of a body of water in an enclosed or semi-enclosed basin, such as a reservoir, harbor, lake, or storage tank. A tsunami is a great sea wave, commonly referred to as a tidal wave, produced by a significant disturbance undersea, such as a tectonic displacement of sea floor associated with large, shallow earthquakes. The project site is mapped on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 1035G as Zone X (with no overlay), meaning that the project site is not within a flood hazard area (FEMA, 2012). Additionally, Figure 6-1 of the Carlsbad General Plan Public Safety Element illustrates that the project site is not within a city-mapped flood hazard area. Figure 6-2 of the City of Carlsbad General Plan Public Safety Element illustrates that the project site is not within a dam inundation area. Given the project site's location (specifically, distance from the nearest enclosed or semi-enclosed body of water), risk of seiche is negligible (GeoSoils, Inc., 2016). As shown in Figure 6-3 of the Carlsbad General Plan Public Safety Element, the project site is not within a tsunami hazard area (City of Carlsbad, 2015). As such, the proposed project would not risk release of pollutants due to project inundation. There would be no impact, and this topic will not be further evaluated in the EIR.

6.5.6 Mineral Resources

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

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

The city is devoid of non-renewable energy resources. Mineral resources within the city are no longer being utilized and extracted as exploitable natural resources. Therefore, no mineral resource impacts would occur as a result of the project. As such, this issue will not be further discussed within the EIR.

6.5.7 Population and Housing

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

There are currently no existing dwelling units or residents on the project site. The proposed project would result in a net increase in housing units within the city. As such, the proposed project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. There would be no impact. As such, this issue will not be further discussed within the EIR.

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CHAPTER 7

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CHAPTER 8

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