CHAPTER 4
ENVIRONMENTAL IMPACT ANALYSIS

The purpose of this Draft Environmental Impact Report (EIR) is to evaluate the potential environmental effects of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project). The City of Riverside (City) circulated a Notice of Preparation (NOP) beginning on March 2, 2016, with the public review period ending on April 1, 2016. The NOP was transmitted to the State Clearinghouse, responsible agencies, other affected agencies, and all property owners and all properties within 300 feet of the Project site to solicit issues and concerns related to the Project. The NOP, Initial Study (IS), and comment letters are included in Appendix A of this Draft EIR. The IS scoped out five California Environmental Quality Act (CEQA) issue areas determined to have either no impact or a less than significant impact (Aesthetics, Agriculture & Forestry Resources, Geology & Soils, Mineral Resources, and Population & Housing); these CEQA issue areas are therefore not covered in this Draft EIR, with the exception of Aesthetics. Based on the NOP comment letter received by the City of Moreno Valley regarding aesthetics, this environmental topic has been included as a stand-alone section in the Draft EIR (refer to Section 4.1, Aesthetics).

Sections 4.1–4.13 of the Draft EIR contain the potential environmental impacts analysis associated with implementation of the Project and focus on the following remaining CEQA issues not scoped out in the IS/NOP.

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Transportation/Traffic
- Utilities and Service Systems
- Energy Conservation.

Technical Studies

Technical studies were prepared in order to accurately analyze air quality/greenhouse gas emissions, biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, noise impacts, traffic impacts, air traffic impacts, utilities and service systems, and urban decay analysis and were used in the preparation of this Draft EIR. These documents are identified in the discussions for the individual environmental issues and included as technical appendices on a CD attached to the Draft EIR. Hard copies are available at the Planning Division of the Community & Economic Development Department of the City of Riverside.

Analysis Format

The Draft EIR assesses how the Project will impact these issue areas. Each environmental issue addressed in this Draft EIR is presented in terms of the following subsections:

- **Setting**: Provides information describing the existing setting on or surrounding the Project site that may be subject to change as a result of the implementation of the Project. This setting described the conditions that existed when the NOP was sent to responsible agencies and the State Clearinghouse, unless otherwise specified.
- **Relevant Regulations, Plans, Policies, and Ordinances:** Provides a discussion of federal, state, regional, and local regulations, plans, policies, and ordinances applicable to the Project.
- **Thresholds of Significance**: Provides criteria for determining the significance of Project impacts for each environmental issue.
- **Project Features That Will Reduce Impacts**: Provides a discussion of the Project design elements and features with respect to each environmental issue that could reduce impacts.
- **Impacts Analysis**: Provides a discussion of the characteristics of the Project that may have an effect on the environment, analyzes the nature and extent to which the Project is expected to change the existing environment, and indicates whether the Project impacts meet or exceed the levels of significance thresholds.
- **Mitigation Measures**: Identifies mitigation measures to reduce significant adverse impacts to the extent feasible.
- **Environmental Impacts After Mitigation Is Incorporated**: Provides a discussion of significant adverse environmental impacts that cannot be feasibly mitigated or avoided, significant adverse environmental impacts that can be feasibly mitigated or avoided, adverse environmental impacts that are not significant, and beneficial impacts.

4.1 AESTHETICS

The Initial Study (IS) (Appendix A) concluded that potential impacts related to aesthetics were found to either have no impact or less than significant impacts, and therefore, aesthetics was determined not to require further analysis in this Draft Environmental Impact Report (EIR). However, comments received during the public comment period for the IS/Notice of Preparation (NOP) identified concerns with potential aesthetics impacts from implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project). Specifically, comments received in response to the IS/NOP (Appendix A) included concerns regarding the following:

- Potential effects to existing views from State Route 60 (SR-60)
- Potential effects associated with visual signage blight (i.e., the introduction of numerous digital and non-digital signs that could produce a cluttered and unnecessarily illuminated visual environment) that may degrade existing visual character and nighttime views
- Project's architectural and landscape theme/style
- Light and glare impacts to single-family residences located along both Eucalyptus Avenue and areas immediately south of the Project site

Therefore, this section analyses the following:

- Potential aesthetics impacts from implementation of the Project as they relate to existing views from scenic vistas and scenic highways
- Degradation of the existing visual character and quality of the site and its surroundings
- Effects to day and nighttime views due to new sources of substantial light and glare

Visual Definitions

The ***visual character*** of a site is defined by its physical characteristics, such as landform, vertical relief, type of vegetation, textures, and patterns; the presence of clear or cascading water; range of color in the soil, rock, vegetation, or water; variety in landscape; man-made structures visually different from the natural environment; and other visually distinguishing elements.

The ***visual quality*** of a site results from the interpretation of physical character features determined by the viewer's perception. Perceptual quality factors include vividness, intactness, unity, visual organization, scarcity, adjacent scenery, and cultural modifications.

A high visual quality will include a balanced composition of line, form, color, and texture; striking visual patterns or the presence of distinct focal points; enhancement from the adjacent

scenery; and overall compatibility with the character of the landscape setting. A low visual quality usually has a chaotic appearance, elements that appear random with no perceivable patterns, adjacent scenery that detracts or has little influence on the scenic quality, and cultural modifications that detract from the setting.

Views include three distinct parts: the viewing scene itself, the viewing location from which an individual sees the viewing scene, and the view corridor, which is the volume of space between the viewing scene and the viewing location.

The ***viewing distance***, or distance between the site and the location from which it is viewed, includes a foreground, mid-ground, and background.

Viewer sensitivity is usually ranked as high, medium, or low, and is generally determined based on the following criteria: types of use, amount of use, public interest, adjacent land uses, and special areas. Sensitive viewpoints generally include surrounding residences, recreational areas, and designated scenic roads.

4.1.1 Setting

Visual Characteristics of the Project Site

The Project site is currently vacant and has been previously graded. The site is relatively flat but features a slight decrease in elevation in the south, southwest, and west directions. Existing elevations range from a high of approximately 1,580 feet above mean sea level (amsl) in the northeast corner of the site (near the intersection of Campus Parkway and Canyon Park Drive), to a low of approximately 1,550 feet amsl in the southwest corner of the site (near the intersection of Valley Springs Parkway and Eucalyptus Avenue). With the exception of low seasonal grasses that have recolonized since previous grading activities, there is no native vegetation within the Project site. According to the *Delineation of State and Federal Jurisdictional Waters* report performed by Michael Baker International, one jurisdictional feature, Drainage 1, is present at the Project site (see Section 4.3, Biological Resources, Figure 4.3-1, Jurisdictional Map). Drainage 1 is an unnamed, ephemeral drainage feature that flows north to south across the Project site from the existing parking lot located north of the Project site. The northern portion of Drainage 1, immediately south of the parking lot, supports rabbitfoot grass (*Polypogon monspeliensis*), Bermuda grass (*Cynodon dactylon*), and other grasses. Areas surrounding Drainage 1 and the swale consist entirely of a non-native grassland plant community that has been heavily disturbed from ongoing weed-abatement activities. Ornamental street trees and occasionally narrow strips of turf are installed along the site perimeter and interior roadways. No existing sources of night lighting or glare are currently located on the Project site.

Visual Character of the Surrounding Area

The Project is located in an urbanized area within the Sycamore Canyon / Canyon Springs neighborhood. The visual character of the area surrounding the Project site is informed by a mixture of medical office buildings (MOBs), general office buildings and governmental offices, regional shopping centers, single- and multiple-family residential developments, an elementary school, and vacant parcels.

Medical office and general office development are located adjacent to Sites A, B, and C. The developments are typically located on rectangular sites that occasionally feature angular areas. Multiple ingress and egress points are provided to the sites, which include large surface parking lots that either face or surround the office development. The perimeter of the site is landscaped with linear strips of turf (or low groundcover and shrubs) and ornamental trees along street frontages. Ornamental trees are also installed in parking lot islands and near building entrances. Office development tends to be centrally located on the site or pushed to corners toward adjacent sidewalks and streets. Office development consists of two- to four-story buildings that are generally rectangular in plan. Buildings are typically constructed of board-formed concrete and feature regular, repeating rows of rectangular glass windows or large sections of glass exteriors. Buildings with larger concrete components feature off-white and earth-toned tan- and red-colored exteriors. Low monument signs identifying buildings and tenants are installed at several of the development driveways. While offices constructed in the concrete tilt-up style feature street addresses or business names in large block letters on building exteriors, other office developments tend to be unadorned and lack identification ornamentation. The office development sites are not fenced but occasionally feature low, non-continuous hedges (i.e., openings are provided at driveways) that provide a buffer between sidewalks and parking lots. Downward directed lighting installed on thin lighting poles are located at regular intervals in parking lots.

A regional shopping center featuring large surface parking lots, standalone big box retail buildings, and other commercial retail uses that operate out of linear and connected strip storefronts are situated to the north of the Project site and south of SR-60 (see Figure 2-4, Existing Uses). Retail and commercial structures tend to be located at or along the perimeter of development sites to maximize their visibility to motorists on nearby highways and locals roads. As previously stated, large and minimally landscaped surface parking lots are located along building frontages. The street frontage of retail development sites is landscaped with ornamental street trees, low shrubs, and occasionally, linear turf strips. The big box retails structures directly to the north of Corporate Centre Place are two to three stories in height, rectangular and boxy in shape, and feature flat roofs, articulations at store entrances, and dark brown pillars along segments of building exteriors. Buildings are typically constructed of concrete masonry unit (CMU) blocks and board-form concrete and with the exception of business names and logos that are displayed in large colors letters and graphics backed by LED lighting on front (and occasionally rear) building exteriors.

Buildings are relatively unadorned. The retail structures to the north-northeast of Campus Parkway are boxy and rectangular in shape, one to two stories in height, and feature light tan and white stucco exteriors with occasional sections of orange and pink accent coloring, pillars, red clay tile covered overhangs, wood pergolas, and expanses of glass windows at store entrances. Both shopping centers are supported by large, minimally landscaped surface parking lots (one to two trees and low shrubs are provided at the ends of parking rows) that are regularly dotted with tall parking lot lighting posts.

Land uses west of the overall Project site (west of Valley Springs Parkway) include a vacant, undeveloped lot divided by an eastern extension of Gateway Drive, a large, two-story commercial retail structure, and a comparatively small one-story bank. The rectangular commercial retail structure is constructed of CMU blocks and board-formed concrete that is tan to light tan in color. The building features a flat roof and signage, including a corporate business logo, list of select services offered, and entrance and exit direction on the front (i.e., north-facing) elevation. A large surface parking lot dotted with ornamental trees and tall and thin lighting poles is located to the north of the building. A gas station with six fuel dispensers covered by a brown colored canopy supported by multiple colored beams is located in the northeast corner of the parking lot. The adjacent bank site is bordered by vacant and undeveloped land to the north and south. The single-story bank structure appears to incorporate tan CMU block and board-form concrete elements in side and rear exteriors and a primarily glass front exterior bordered by metallic trim entrance. The structure and small perimeter surface parking lot are surrounding by tree, shrub, and groundcover landscaping

Land to the south of the overall Project site (south of Eucalyptus Avenue) are predominantly developed with residences but a fast food restaurant, and several vacant and undeveloped parcels also mark the landscape. Residential development consists of older, single-story ranch-style homes displaying primarily off-white and tan, stucco and wood paneled exteriors that are topped by slightly pitched wood-shingled roofs. These homes typically feature accent trim around windows and garage doors and turf lawns dotted with ornamental trees and shrubs. Low, chain-link, metallic post, and stucco-clad CMU walls are common along the street frontage of residential lots. Newer, two-story apartment development is also located in the area and features pitched red tiled roofs and stucco-clad exteriors finished in light earth tone colors. A dense and tightly packed mobile home development is located to the east of the apartment homes. These single-story structures are typically rectangular and are exteriors are painted in cool to bright colors. An additional two-story to three-story apartment development is located southeast of the Project area and features shared pools, pedestrian paths, and interior and perimeter landscaped areas. The off-white to tan colored, stucco-clad exterior buildings feature accent-trimmed windows, roofs, and balconies and are topped by slightly pitched, red-tiled roofs. Parking is available along interior roadways that then to hug building sites. The development is gated and access controlled. Low monument signage is installed at the development entrance off Day Street and locational development signage (i.e., to identify individual buildings and addresses) is provided near entrance gates.

Land uses east of the overall Project site (east of Day Street) include retail and commercial retail uses Figure 2-4, Existing Uses). The two- to three-story retail structures are rectangular and boxy and with the exception of business names and logos that are either painted or affixed in colorful LED-backed lettering, building exteriors are unadorned. Structures generally feature flat roofs, light tan to slightly grey exteriors, and recessed faces at building entrances. Buildings front large surface parking lots dotted with tall and thin light poles and occasional concrete islands landscaped with ornamental trees and low shrubs. The remaining commercial structures to the east of the site vary in color and architectural design, but are generally boxy and rectangular, and two stories in height. Two four-story hotels are located to the east of the retail structures and west of Memorial Way. The structures include CMU blocks on ground floors, and colorful stucco-clad exteriors on top floors. The south- and east-facing exterior of one building is adorned with tan stone-like materials. Business name signage is affixed to the exterior of these structures and moderately tall (i.e., 8–10 feet), stone-clad monument signage is installed at building driveways.

Several commercial developments in the Project area display a consistent architectural theme characterized by lightly colored building exteriors and slightly pitched red-tile roof sections. In addition, many of the big box retail structures are rectangular in plan, include relatively unadorned building exteriors that are marked by business names and/or logos, and are topped with flat roofs. Also, most structures are approximately two to three stories in height. However, these themes are not consistently referenced throughout the shopping centers, as individual businesses located in linear strips tend to incorporate distinguishing architectural elements (e.g., familiar signage and advertisements, wide glass storefronts, canopied entrances) at building entrances. Shopping centers and office development consistently feature large surface parking lots accessible by multiple ingress and egress points. Further, parking lots feature regularly spaced, tall light posts, landscaped islands, and landscaped perimeters. In addition, development site driveways tend to feature low monument signs and perimeter roadways are regularly lined with ornamental street trees and linear strips of turf.

Scenic Highways

While the City of Riverside does not designate SR-60 as a scenic route, the City of Moreno Valley's General Plan identifies SR-60 between Day Street and Gilman Springs Road as a scenic highway. The City of Moreno Valley's General Plan does not apply to the Project. However, due to the proximity of the Project site to the City of Moreno Valley, impacts to scenic highways are analyzed as part of the Draft EIR. SR-60 is approximately 0.35 mile north of the Project site. Due to existing development and the elevated vantage offered along SR-60 near I-215, the Project site is not identifiable from existing surrounding development from SR-60. The nearest facility of the California Scenic Highway System, I-215 from SR 74 near Romoland to SR 74 near Perris, is located approximately 11 miles south of the Project site. The Project site is not visible from this portion of I-215 due to existing development and terrain.

Scenic Vistas

There are two scenic vista points in close proximity to the Project site: Box Springs Mountain Reserve and Sycamore Canyon Wilderness Park.

Box Spring Mountain Reserve is located approximately one mile north of the Project site. The Project site can be viewed from the southeast portion of the Reserve from M Trail and M Peak, as they provided opportunities for long and panoramic views to the south (County of Riverside 2015).

Sycamore Canyon Wilderness Park is located approximately 1.5-miles west of the Project site. The Project site can be viewed from elevated east-facing vantage points from the network of trails located in the southeast potion of the Park (Riverside Metropolitan Museum 2016).

Light and Glare

The surrounding area has varying levels of existing nighttime lighting. In addition to those sources addressed above under Project site, local area roadways, commercial and retail shopping centers, and single- and multifamily residential development feature a mixture of street and parking lot lighting, general illumination, and advertisement lighting which contribute to the existing levels of nighttime light levels in the surrounding area.

4.1.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

There are no federal regulations applicable to the Project.

State

Caltrans Scenic Highway Program

In 1963, the California Legislature created the Scenic Highway Program to preserve and protect scenic highway corridors from changes that will diminish the aesthetic value of lands adjacent to the highways. The state regulations and guidelines governing the Scenic Highway Program are found in Section 260 et seq. of the Streets and Highways Code. A highway may be designated as scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers' enjoyment of the view (Caltrans 2008). A state route must be included on the list of highways eligible for scenic highway designation in Streets and Highways Code Section 263 for it to be nominated for official designation (eligible state routes are those that have been listed in Section 263 by the State Legislature).

The nearest eligible facility of the California Scenic Highway System, I-215 from SR 74 near Romoland to SR 74 near Perris, is located approximately 11 miles south of the Project site (Caltrans 2016).

Regional

County of Riverside Dark Sky Regulations

In 1988, the County of Riverside adopted Ordinance Number 655, which establishes standards to limit light leakage in order to reduce interference with nighttime astrological observation and research conducted at the Palomar Observatory (County of Riverside 1988). This ordinance established two zones based on radial distance from the Palomar Observatory, which is located in northern San Diego County. Zone A is defined as the circular area 15 miles in radius centered on Palomar Observatory. Zone B is defined by an area that includes two circles: one 45-mile radius centered on Palomar Observatory and the second a circular perimeter of Zone A. The Project site is located outside of both Zone A and Zone B as it is more than 50 miles from the Palomar Observatory; therefore, the Project is not required to conform to the Zone A and B standards.

Local

City of Riverside General Plan 2025

According to the Open Space and Conservation Element of the General Plan (City of Riverside 2007a), Box Springs Mountain, which is located approximately one mile north of the Project site, provides scenic viewpoints of the City of Riverside and the region. The Project site is visible from the peak of the Box Springs Mountain and nearby M Peak. The approximate elevation of Box Springs Mountain peak is 3,060 feet amsl. Long distance views of the valley landscape and distant mountainous terrain are available from Box Springs Mountain and M Peak.

City of Riverside Citywide Design and Sign Guidelines

The Citywide Design and Sign Guidelines were adopted in November 2007 and work to reinforce the physical impacts of Riverside. The guidelines are intended to promote quality, well-designed development through Riverside that enhances existing neighborhoods, creates identity, and improves the overall quality of life within the City. The following objectives provide direction and purpose for the subsequent design criteria and guidelines with regard to character and urban design. The concepts drawn from these objectives reflect the urban design objectives and vision established in the Riverside General Plan at a citywide scale.

These objectives are intended to:

- Provide for distinct architectural character and physical enhancement of future and existing development to foster revitalization and rehabilitation of the neighborhood, commercial, and industrial centers.
- Preserve and enhance historical character of existing structures with architecturally compatible development.
- Create pedestrian-oriented neighborhoods and business environments with architectural and landscape architectural design that allows for active, healthy, and safe interaction of pedestrians and vehicles.
- Through the design of individual projects, promote connectivity to surrounding neighborhoods.
- Provide guidance to residents, architects/design professionals, and developers in the planning and design of development projects throughout the City.

Sign regulations in the City's Zoning Code (Title 19 of the Municipal Code) and the Sign Design Guidelines work together to safeguard and preserve property values and public health and welfare through prohibiting, regulating, and controlling the type, design, location, and maintenance of signs. The Sign Design Guidelines are established to accomplish the following:

A. Establish reasonable and improved standards for business identification.
B. Ensure signs on facades of buildings reinforce the existing historic and/or architectural character and are integrated into the overall architectural scheme of buildings.
C. Promote a quality visual environment by allowing signs that are compatible with their surroundings and which effectively communicate their message.
D. Promote economic vitality.
E. Ensure that commercial signs are designed for the purpose of identifying a business in an attractive and functional manner, rather than to serve primarily as general advertising for business.
F. Encourage creative and innovative approaches to signage within an established framework.
G. Enhance and protect overall property values and the visual environment in the City by discouraging signs which contribute to the visual clutter of the streetscape.

City of Riverside Tile 17: Grading Code

All applications for a grading permit shall be accompanied by all grading plans, including an interim erosion control plan, preliminary soils report as prepared by a registered soils engineer (Geotechnical

engineer), unless waiver by the Public Works Director, payment of a grading plan review fee as specified in the current Fees and Charges Resolution, as well as a National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges associated with construction activities that includes clearing, grading or excavation that results in the disturbance of at least one acre. In addition, documentation of New Development Best Management Practices (BMPs) is required by the Riverside County Drainage area Management Plan to identify and control post-construction/discharge of pollutants to the Waters of the United States.

City of Riverside Title 19: Zoning Code

Chapter 19.710 Design Review

The City of Riverside design review procedures are necessary to preserve and promote the health, safety, and general welfare of the community by protecting and preserving the value of properties and encouraging high quality development; recognizing the interdependence of land values and aesthetics and providing a method to implement this interdependence in order to maintain the values of surrounding properties and improvements; ensuring that the public benefits derived from expenditures of public funds for improvement and beautification of streets and public facilities shall be protected by the exercise of reasonable controls over the character and design of private buildings, structures, and open spaces; ensuring the maintenance of high design standards in the vicinity of public buildings and grounds for the preservation of the architecture and general appearance in the areas of the City containing the buildings and grounds and to preserve the property values in the area; promoting maintenance of high design standards adjoining thoroughfares of Citywide importance to ensure that the community benefits from the natural growth and vegetation as much as possible; and ensuring design of landscaping and vegetation. In addition, the Design and Reviews procedures established by this Chapter shall be applied according to, and in compliance with, the following standards, if applicable:

1. Sites shall be graded and developed with due regard for the aesthetic qualities of the natural terrain and landscape, and trees and shrubs shall not be indiscriminately destroyed.
2. Buildings, structures, and signs shall be properly related to their sites and consistent with the character of the neighborhood and surrounding sites, and shall not be detrimental to the orderly and harmonious development of their surroundings and the City.
3. Open spaces, parking areas, pedestrian walks, signs, illumination, and landscaping (including water efficient irrigation facilities) shall be adequately related to the site and arranged to achieve a safe, efficient, and harmonious development.
4. Sites shall be developed to achieve a harmonious relationship with existing and proposed adjoining developments, avoiding both excessive variety and monotonous repetition, but allowing, when feasible, similarity of style or originality of decision.

5. When feasible, electrical and similar mechanical equipment, and trash and storage areas shall be effectively screened from public way. The use of harmonious or related colors and materials shall be encouraged.
6. The design review process shall endeavor to eliminate the ugly, the garnish, the inharmonious, the monotonous, and the hazardous, and shall endeavor to ensure that proposed improvements will not impact the desirability of investment or occupancy nearby; but originality in site planning, architecture, landscaping, and graphic design shall not be suppressed.
7. Review shall include exterior design, materials, textures, colors, means of illumination, signing, landscaping, and irrigation.

Chapter 19.556 Lighting

The following are the City's lighting design and development standards as established in Section 19.556.020 of the Municipal Code (City of Riverside 2007b):

A. Lighting for safety purposes shall be provided at entryways, along walkways, between buildings and within parking areas.
B. Lighting support structures shall not exceed the maximum permitted building height.
C. All on-site lighting shall provide an intensity of one foot-candle at ground level throughout the areas serving the public and used for parking.
D. Flickering or flashing lights shall not be permitted.
E. Light sources shall not be located in required buffer areas, except those required to illuminate pedestrian walkways.
F. All lights shall be directed, oriented and shielded to prevent light from shining onto adjacent properties, onto public rights-of-way and into driveway areas in a manner that will obstruct drivers' vision.
G. Light poles shall not exceed 20 feet in height, including the height of any concrete or other base material.
H. The City may require submittal of an exterior lighting plan as part of any development application or as a condition of approval of a project.

Section 19.550 establishes standards for Fences, Walls, and Landscape Materials (City of Riverside 2007c). Pursuant to Section 19.550.030(B)(1), a fence or wall along a side or rear property line may be up to 6 feet in height provided it does not extend into a front yard.

Section 19.590 Performance Standards

The following are the City's lighting and glare performance standards, as established in Section 19.590.070 of the City's Municipal Code (City of Riverside 2007b):

A. Lighting for safety purposes shall be provided at entryways, along walkways, between buildings, and within parking areas.

B. Except for stadium and playing field lighting, lighting support structures shall not exceed the maximum permitted building height of the zone where such lights are located. Furthermore, the height of any lighting shall be the minimum required to accomplish the purpose of the light. Freestanding pole lights shall not exceed a maximum height of fourteen feet within 50 feet of a residentially zoned property or residential use.

C. The candle-power of all lights shall be the minimum required to accomplish the purpose of the light.

D. Flickering, flashing, or strobe lights shall not be permitted. All lights shall be constant and shall not change intensity or color more often than once every 30 minutes.

E. Aircraft search lights normally used to draw attention to a business from off-site are prohibited.

F. Lighting where required for parking lots shall be provided at a level no less than one foot candle throughout the lot and access areas, and such lighting shall be certified as to its coverage, intensity, and adherence to Section 19.590.070 (Light and Glare) and Chapter 19.556 (Lighting) by a qualified lighting engineer.

G. All lights shall be directed, oriented, and shielded to prevent light from shining onto adjacent properties, onto public rights-of-way, and into driveway areas in a manner that will obstruct drivers' vision.

H. Lighting for advertising signs shall not cause light or glare on surrounding properties.

I. Lighting shall not be directed skyward or in a manner that interferes with the safe operation of aircraft.

Canyon Springs Healthcare Campus Specific Plan

The California Government Code (Section 65450–65457) and Chapter 19.820 of the City of Riverside Zoning Code permit the use of specific plans to regulate site development, including permitted uses, density, building size, and building placement. Specific plans also govern the type and extent of open space, landscaping, roadway configuration, and the provision of infrastructure and utilities. The Canyon Springs Healthcare Campus Specific Plan has been designed to provide a roadmap to guide future development over a 10-year period by

identifying design and development standards for the construction of a new healthcare campus. The Specific Plan includes both short- and long-range planning goals.

City of Moreno Valley General Plan

The City of Moreno Valley General Plan Conservation Element identifies the entire segment of SR-60 within the City of Moreno Valley as a scenic route for its available views to Box Springs Mountain and the valley (City of Moreno Valley 2006). Further, the General Plan states that the major aesthetic resources within the study area (i.e., the City of Moreno Valley) include views of the mountains and southerly views of the valley. The City of Riverside does not designate SR-60 as a scenic route. Furthermore, since the Project site is located in the City of Riverside, the City of Moreno Valley's General Plan does not apply to the Project.

4.1.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.), were used to determine the significance of impacts to aesthetics. Based on the IS (Appendix A) and Appendix G of the State CEQA Guidelines, impacts to aesthetics will be significant if the Project will:

- 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.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare which will adversely affect day or nighttime views in the area.

4.1.4 Project Features That Will Reduce Impacts

Site Plan

As described in Section 8.1, Site Planning, of the Specific Plan, new buildings and parking areas must be sited in a manner compatible with surrounding development and must relate to the surrounding built environment. The majority of structures on the Project site will be three to four stories (approximately 50 feet or less) in height, which will generally be consistent with existing retail and office development located in the surrounding area. Figures 4.1-1A and 4.1-1B, Elevations, illustrates the bulk and scale of proposed development on the Project site. Further, development of Site A, the proposed Senior Housing structure will incorporate 20-foot building setbacks from Valley Springs Parkway, Corporate Center Place, and surrounding development to

the south and east. While not depicted in figures, landscaping will be incorporated in the setbacks to provide a visual buffer and partially screen Project components from off-site viewing locations (see Figure 4.1-2A, Site A Setbacks). Development of Site B, the Independent Living, Assisted Living, and Skilled Nursing Facility, will also incorporate a 20-foot setback from the existing surface parking lot to the north and east, as well as portions of Gateway Drive and Canyon Park Drive (see Figure 4.1-2B, Site B Setbacks). Development of Site C, which incorporates the hospital, MOB structures, and parking structures, will incorporate appropriate setbacks from the existing school (70 feet to the north, 35 feet to the west and 135 feet to the northeast) along the southern site boundary. Development of Site C will also incorporate appropriate setbacks from residential areas (75 feet and 100 feet to the north) along the southern site boundary (see Figure 4.1-2C, Site C Setbacks). Site access will also be provided behind MOB 4 and Parking Structure 1 and will create an additional buffer space between Project development and existing uses immediately south of the Project site (Figure 2-3, Site Plan).

Architecture

The Canyon Springs Healthcare Campus Specific Plan design guidelines require that the architectural style of new buildings be compatible with existing, adjacent structures within the Canyon Springs Business Park (CSBP) Specific Plan Area. The Canyon Springs Healthcare Campus Specific Plan Design Guidelines will establish the overall vision of the Specific Plan, provide guidance for the overall design quality, and assure compatibility between adjacent uses. New buildings will integrate modern and sustainable design. Facades will be "divided" by vertical and horizontal variation in wall planes, building projections, door and window bays, and similar elements. Building articulation will be present on all sides and rear walls of the buildings. Unique architectural elements, where provided, will be positioned to be included in key views of newly constructed buildings and structures, including parking structures, signage, and outdoor furniture and seating areas. In addition, building entrances will be distinct and easily identifiable to assist in wayfinding.

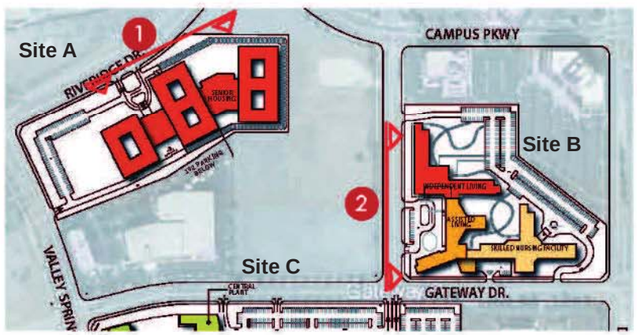
All facades of a building must feature design characteristics to help reduce the perceived scale of buildings. Deep inset windows, inset entrances, step-backs, projections in the frontlines of buildings, variations in colors and textures, canopies, arcades, and overhangs, will be considered in building design in order to reduce perceived mass. The massing and scale of the buildings must respect the visual and physical relationship of adjacent buildings. Distinct architectural elements must divide and articulate all newly constructed building facades, in order to soften the scale and mass of buildings. Changes in height, horizontal plane, materials, patterns, and colors must be used to reduce building scale and mass. Primary building entries must be easily identified through the use of prominent architectural elements; signage, landscaping, lighting, canopies, roof form, and hardscape; architectural projections, columns, vertical elements; and other design features that help emphasize a building's entry.

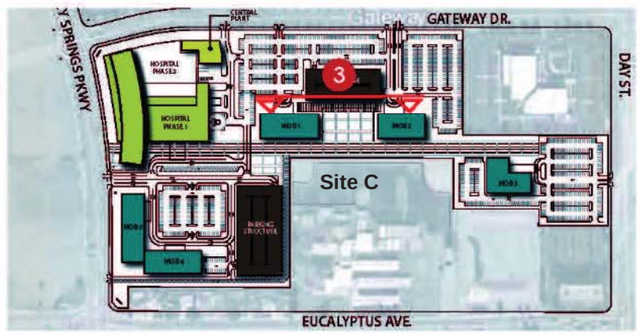
Colors, exterior materials, and architectural details must be consistent and complementary within the Specific Plan area. Acceptable building materials may include natural and cast stone, metal, plaster (or exterior insulation finishing system), glass, masonry, concrete and/or other contemporary composites; see Figures 4.1-3A and 4.1-3B, Acceptable Building Exterior Materials Finishes, and Figure 4.1-3C, Unacceptable Exterior Building Materials and Finishes. Building materials must support wellness. Use of sustainable materials and local resources (e.g., locally available, high recycled-content, reused, obtained from renewable sources, containing low volatile organic compound (VOC) levels, and high performance glazing units with low emissivity coatings) is highly encouraged.

Window treatments including louvers, sun shades, and canopies are allowed on the ground floor and upper floors of all building types; see Figures 4.1-3A through 4.1-3C. Both horizontal and vertical sunshades are encouraged to reduce internal temperatures during hot summer months. Louvers, sun shades, and canopies may extend over pedestrian pathways, pedestrian plazas, and public spaces; however, they shall not extend into the public rights-of-way.

All screening devices must be architecturally integrated into the structure and compatible with materials and colors of the building. Plant facilities, loading, and service areas must be screened from public view from all on-site and off-site vantage points and visibly separated from all public entrances and parking areas. Utility and mechanical equipment must be screened from view of public streets and nearby buildings with landscaping and/or architectural elements. Rooftop-mounted equipment visible from the surrounding area or adjacent buildings must be completely screened. (Refer to Chapter 19.555 of the City's Zoning Code.) Where rooftop equipment is visible from higher buildings, it must be painted to match the roof color.

The orientation of buildings must facilitate and encourage pedestrian activity and convey a visual link to the pedestrian walkways. Building orientation must take into consideration the site's characteristics, surrounding adjacent uses, and location of major access points.





SOURCE: HGA, 2016

FIGURE 4.1-1A
Elevations

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Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan

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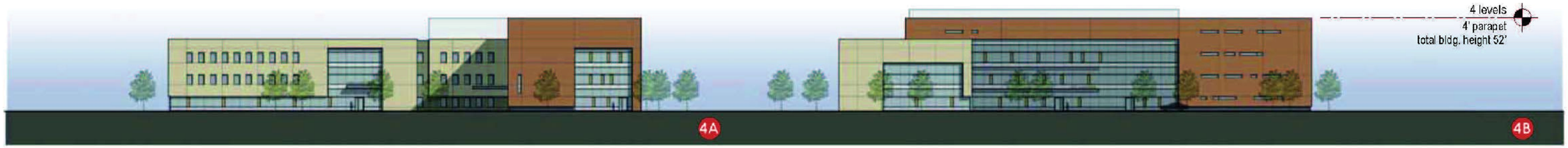

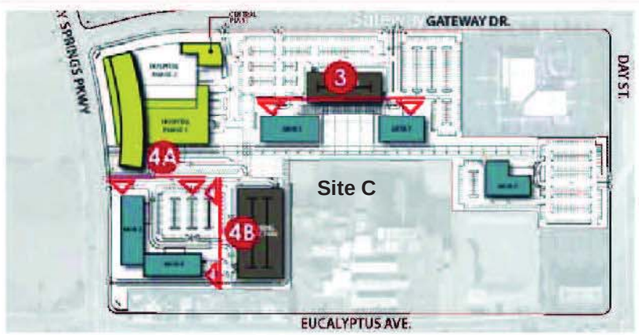

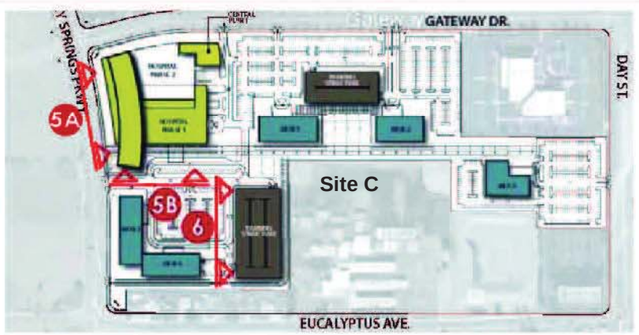

SOURCE: HGA, 2016

FIGURE 4.1-1B
Elevations

Canyon Springs Healthcare Campus New Specific Plan and Specific Plan Amendment Project

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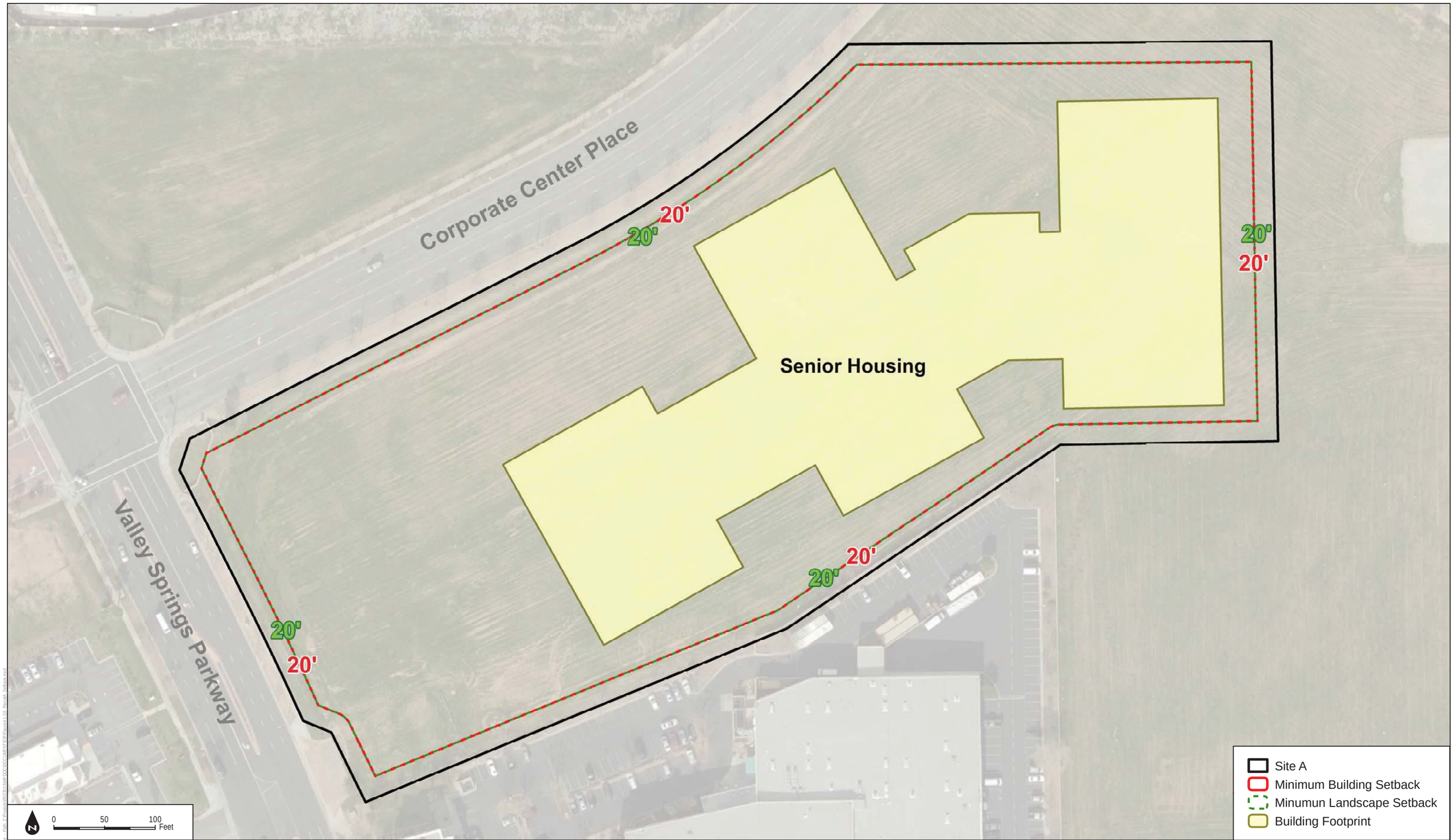

SOURCE: Bing Maps 2015, USDA NRCS 2015

FIGURE 4.1-2A

Site A Setbacks

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Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan

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SOURCE: Bing Maps, 2016

FIGURE 4.1-2B
Site B Setbacks

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Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan

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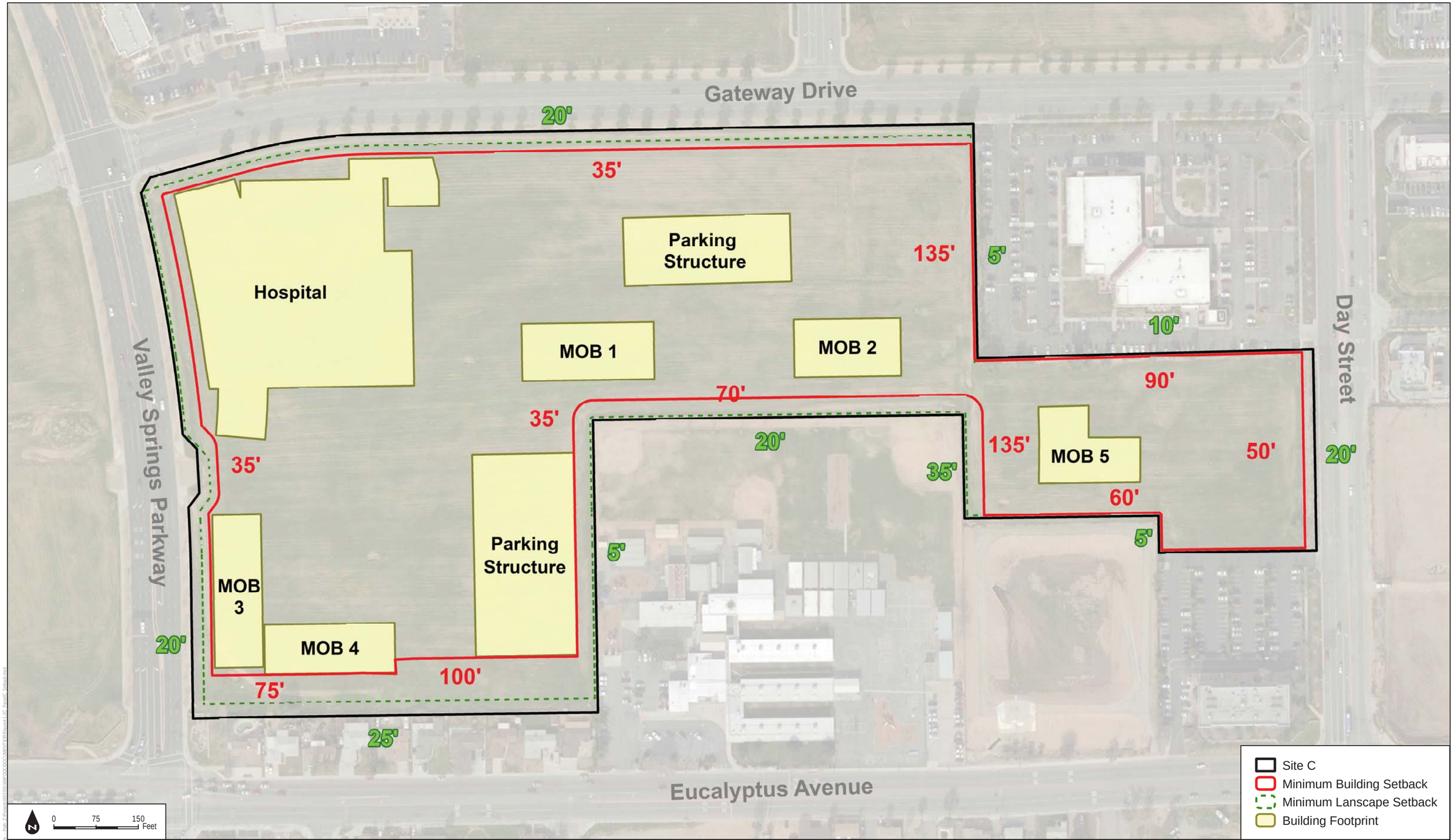

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SOURCE: Bing Maps, 2016

FIGURE 4.1-2C

Site C Setbacks

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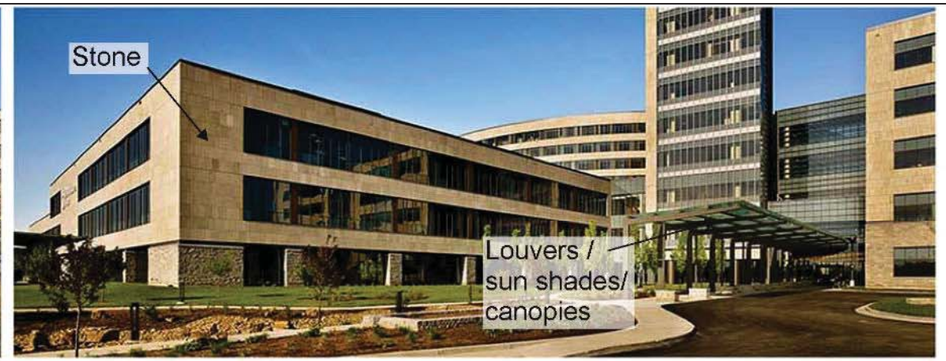

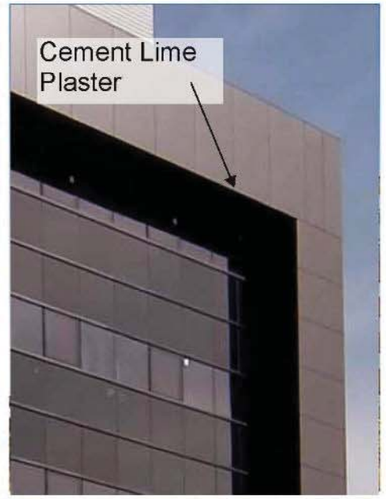

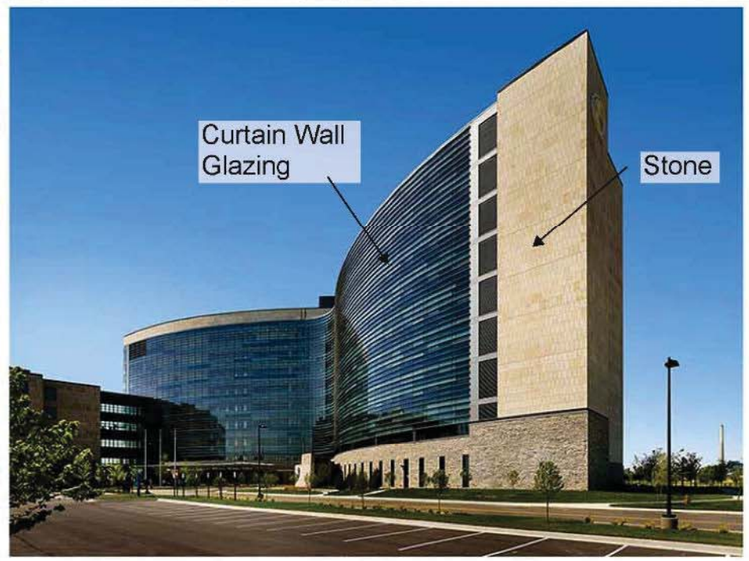

Acceptable Building Exterior Materials and Finishes:

Stone
Masonry
Ceramic/ Terra Cotta Cladding
Cement/ Lime Plaster (e.g. Swisspearl)
Composite Metal Panel (e.g. Alucobond)
High Pressure Laminate Panel (e.g. Trespa)
Concrete
Precast Concrete
GFRC (Glass Fiber Reinforced Concrete)
Storefront Glazing
Curtain Wall Glazing
Louvers/ Sun Shades/ Canopies

SOURCE: HGA 2016

FIGURE 4.1-3A

Acceptable Building Exterior Materials and Finishes

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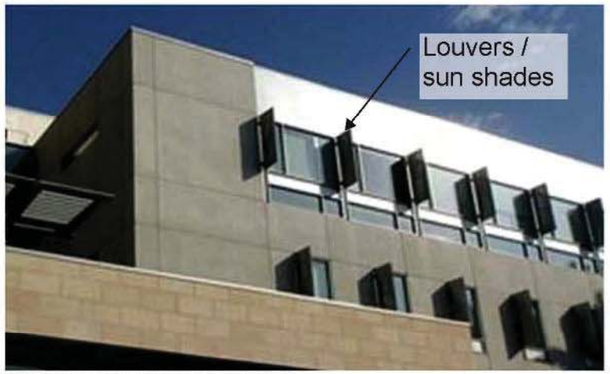

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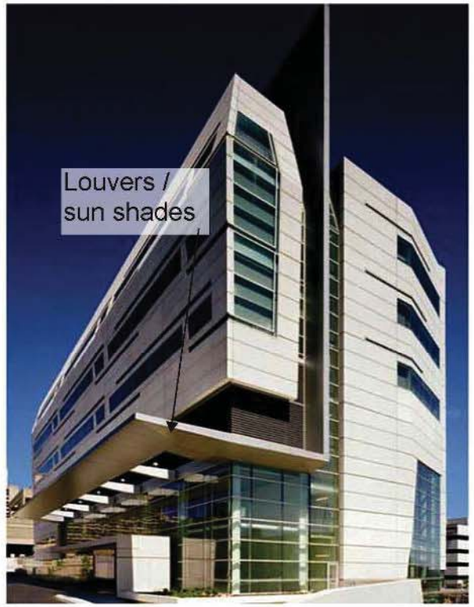

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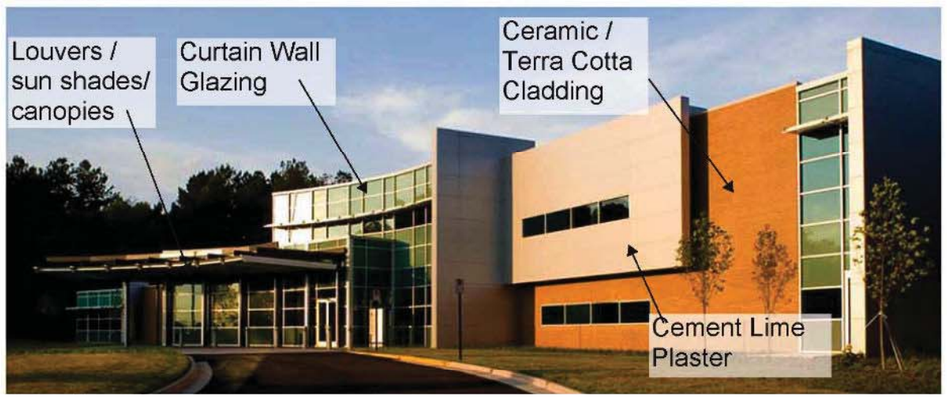

Acceptable Building Exterior Materials and Finishes

- Stone
- Masonry
- Ceramic/ Terra Cotta Cladding
- Cement/ Lime Plaster (e.g. Swisspearl)
- Composite Metal Panel (e.g. Alucobond)
- High Pressure Laminate Panel (e.g. Trespa)
- Concrete
- Precast Concrete
- GFRC (Glass Fiber Reinforced Concrete)
- Storefront Glazing
- Curtain Wall Glazing
- Louvers/ Sun Shades/ Canopies

SOURCE:HGA 2016

FIGURE 4.1-3B

Acceptable Building Exterior Materials and Finishes

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© 2014 CertainTeed Corporation

© Maintenance Free Siding // Siding Express

© 2014 Contractor's Siding

© 2014 Country Towne Builders Inc.

© Board & Batten Vertical Siding

© Liberty Home Solutions, LLC

Unacceptable Building Exterior Materials and Finishes:

Vinyl Siding
Masonite / Hardie Board Siding

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FIGURE 4.1-3C
Unacceptable Exterior Building Materials and Finishes

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Signage

The Project's monument and directional signage program (see Figure 4.1-4 Monument Signage Diagram) will implement signage design features as outlined in the Specific Plan. The following signage design guidelines shall be implemented by the Project (refer to Section 7.5.4, Signage, of the Specific Plan, for applicable development standards):

a. Signage shall be located at appropriate entrances into the CSHC Specific Plan area and shall be used to identify the Specific Plan area and/or its significant components.

b. Several major identification opportunities exist along the perimeter of the Specific Plan area that shall be used to elevate the visual presence of the Specific Plan area and differentiate the Specific Plan area from the Canyon Springs Business Park Specific Plan area.

c. Contemporary designs that are complementary to the building's architecture shall be incorporated.

d. Signage shall be an accent to the building's architecture and may include metal, stone, or other materials used in the building architecture.

e. Signage shall be proportional to the building.

Fences and Walls

The Project will implement the fencing and wall design guidelines outlined in the Specific Plan. The following fencing and wall design guidelines are outlined in Section 7.7.2, Fences and Walls, of the Specific Plan:

a. Site A:

- An 8-foot tall wall shall be located along the southern and eastern perimeter of Site A. An example of materials to be used for this wall includes, but is not limited to, rough face concrete masonry unit (CMU) block wall.
- Decorative fencing shall be installed within Site A to enclose open space areas to the west and north of the senior housing facility, as depicted in Figure 7-3. Example materials to be used for decorative fencing include, but are not limited to, wood or metal, with decorative concrete as an accent. Decorative fencing shall be compatible in material and design with the building architecture and shall be architecturally treated on both sides. Where concrete accent is used, plasters or offsets shall be spaced a maximum of 20 feet off center.

b. Site B:

- Decorative fencing shall be installed within Site B to enclose open space areas to the north, south, and east of the buildings, as depicted in Figure 7-3. Example materials to be used for decorative fencing include, but are not limited to, wood or metal, with decorative concrete as an accent. Decorative fencing shall be compatible in material and design with the building architecture and shall be architecturally treated on both sides. Where concrete accent is used, plasters or offsets shall be spaced a maximum of 20 feet off center.

c. Site C:

- An 8-foot tall wall shall be located along the southern perimeter of Site C from the southwestern point to the parking lot for Medical Office Building 5. An example of materials to be used for this wall includes, but is not limited to, rough face CMU block wall, as depicted in Figure 7-3. Upon the request of the Moreno Valley School District, a gate may be included in the perimeter fence to allow school users to access Site C.

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SOURCE: HGA, 2016

FIGURE 4.1-4
Monument Signage Diagram

Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan

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Landscaping

The Project will implement the landscaping guidelines outlined in the Specific Plan. The landscape design standards outlined in Section 8.6.1, Landscape Design, of the Specific Plan are listed below:

a. Landscape design elements must address sustainability, resiliency, and the creation of landscape character that recognizes the site, its local climate, sensitive to significant climate changes of the region, including challenges of planting during higher temperatures and less than average rainfall.

b. Landscape design must reflect details in planting material and hardscape supplementing architectural materials, color, and details and complementing the local environment and planting microclimate.

c. Landscaping must complement the architecture, hardscape features, and give consideration to existing landscape.

d. The landscape design must help define the major building entrances and enhance its functionality.

e. Weather protection from rain, sun, and wind must be provided by the building form and/or landscape elements.

f. Interior views to landscaping must be regarded as important factors of the success of the landscape design.

g. Landscaping must be in scale with the adjacent buildings and be appropriately sized at maturity.

h. Pedestrian scale plantings must prevail in courtyards and walkways. Larger scale plantings must be used along street setbacks and vehicular entrances.

i. A palette of construction and plant materials must be used which will provide continuity and recognizable order in the landscape and define a range of details in material refinement, texture, and character relative to their aesthetic and functional intent.

j. Materials must be chosen to enhance and complement the built form in terms of texture, color, and pattern.

k. The habitats of living plants must be fully understood in both plant selection and landscape layout, to avoid over-planting, excessive maintenance, water use, and conflict with other plantings and structures. The disorganizing effect resulting from using many colorful, but visually consuming combinations of varieties must be reduced. Constraint must be exercised in utilizing shrubs for building foundation planting to allow for access, maintenance, and window clearance.

l. Landscaping must generally incorporate plantings using a three-tiered system consisting of trees, shrubs, and groundcover; refer to Figures 8-4 through 8-10 of the Specific Plan for examples.

m. Shrubs must be conceptually massed in large drifts to create enclosure and unity. The amount of species variety must be limited to reduce the disorganizing effect resulting from using many colorful, but visually confusing combinations of varieties. Constraint must be exercised in utilizing shrubs for building foundation planting to allow for access, maintenance, and window clearance.

n. Landscaping must be used to create screens and buffers for parking areas, storage areas, and trash/recyclable collection enclosures and provide separations between uses or activities where required. Landscaping may also be used to soften the appearance of buildings and screen undesirable views from the public and surrounding uses.

o. Use landscape separations to provide visual screen and noise buffers. Examples include loading, service and parking areas buffered from courtyards, and minimizing outdoor storage areas to the extent feasible and screening such areas from view.

Common buffer treatments include landscape strips, walls, fencing, green-screens, raised planters, berms, and elevation changes, such as retaining walls or slopes. Locate deciduous trees on the south sides of buildings to reduce the heating and cooling demands of the buildings.

Parking Areas

Parking areas will be designed in line with parking and loading area standards found in the Specific Plan. A full list of standards for parking and loading areas can be found in Section 8.2, Parking and Loading Areas, of the Specific Plan. The standards that will be implemented by the Project are summarized here.

a. Parking lot design shall be consistent with the standards established in Chapter 19.580 of the City's Zoning Code, as well as the standards in the Citywide Design and Sign Guidelines.

b. Service and loading areas shall take access from shared access points.

c. Parking structures adjacent to, and visible from, public streets shall be appropriately screened to minimize undesirable visual impacts. Refer to Section 8.5.9 (Parking Structures) of Chapter 8 of the Specific Plan for screening mechanisms within parking structure areas.

d. Surface parking areas shall be divided through the use of canopy trees and landscape improvements, located throughout, to reduce the heat island effect.

e. Parking lot design shall include water quality stormwater facilities consistent with City of Riverside standards and the Final Water Quality Management Plan prepared for each phase of the Project.

f. Parking lots and structures shall accommodate elderly and disabled drivers and passengers.

A full list of parking lot standards can be found in Section 8.6.5, Parking Lots, of Chapter 8 of the Specific Plan. Standards that reduce impacts include:

a. Trees shall be placed throughout the parking lot to ensure all portions of the lot receive a broad canopy of shade and landscape screening is provided between the parking lot and street right-of-way.

b. The parking structure shall have a minimum landscaped setback as required by Section 7.6, Site Development Standards, and shown in Figure 7-1, Site Setbacks of Chapter 7 of the Specific Plan.

c. Parking structures located along all street frontages must have a three-foot high buffer consisting of a decorative masonry wall, solid hedge, planted screen, landscaped mounds, or any combination thereof.

d. Landscape screens and masonry walls shall be situated at the rear of the landscaped setback.

Lighting

As mentioned in Chapter 2, Table 2-2, Summary of Project Design Features and Construction Measures, the Project will be conditioned to comply with the City's Zoning Code and an exterior lighting plan will be submitted for Planning Division staff review and approval. In within accordance with Section 19.556.010 and Section 19.590.070 of the Municipal Code, light poles shall not exceed 20 feet in height, including the height of any concrete or other base material and freestanding pole lights shall not exceed a maximum height of fourteen feet within 50 feet of a residentially zoned property or residential use. Further, all on-site lighting will provide a minimum intensity of one-foot candle and a maximum intensity of ten-foot candles at ground level throughout the areas serving the public and used for parking. Light sources will be shielded to minimize off-site glare, will not direct light skyward, and will be directed away from adjacent properties and public right-of-ways. If lights are proposed to be mounted on buildings, down-lights will be utilized (a lighting techniques diagram is included as Figure 4.1-5, Lighting Techniques Diagram). A photometric study with manufacturer's cut sheets of all exterior lighting on buildings, in landscaped areas, and in parking lots will be prepared and submitted with the exterior lighting plan.

4.1.5 Impact Analysis

Threshold AES-1: Would the project have a substantial adverse effect on a scenic vista?

The following analysis addresses potential effects on available views from trails within Box Springs Mountain Reserve (including M Peak and M Trail), Sycamore Canyon Wilderness Park, and the segment of SR-60 that travels through the City of Moreno Valley.

Box Springs Mountain Reserve

Due to its elevated vantage point, M Peak in the Box Springs Mountain Reserve (approximately 3,050 amsl) offers recreationist long and broad views of the local valley landscape and more distant mountainous terrain. Similarly, segments of south facing slopes on M trail provide opportunities for long and broad scenic views of the Moreno Valley/Perris area.

While the Project site is visible from M Peak and segments of the M trail, proposed development will not substantially affect existing available views. The Project site is located within the Sycamore Canyon / Canyon Springs Neighborhood. This neighborhood is typified by a mixture of commercial retail shopping centers featuring big-box retailers, two- to four office developments, and industrial warehouses and distribution centers. Therefore, as viewed from Box Springs Mountain Reserve, development of the Project site with a three- to five-story healthcare campus will be consistent with the existing urban character of the immediate surrounding area. Further, proposed development on the Project site will not substantially obstruct or interrupt available views from elevated vantage points in the reserve. Views will continue to be long and broad and will be unencumbered by development on the Project site. Therefore, Project development will not result in a substantial adverse effect on existing views and impacts are considered **less than significant**. No mitigation is required.

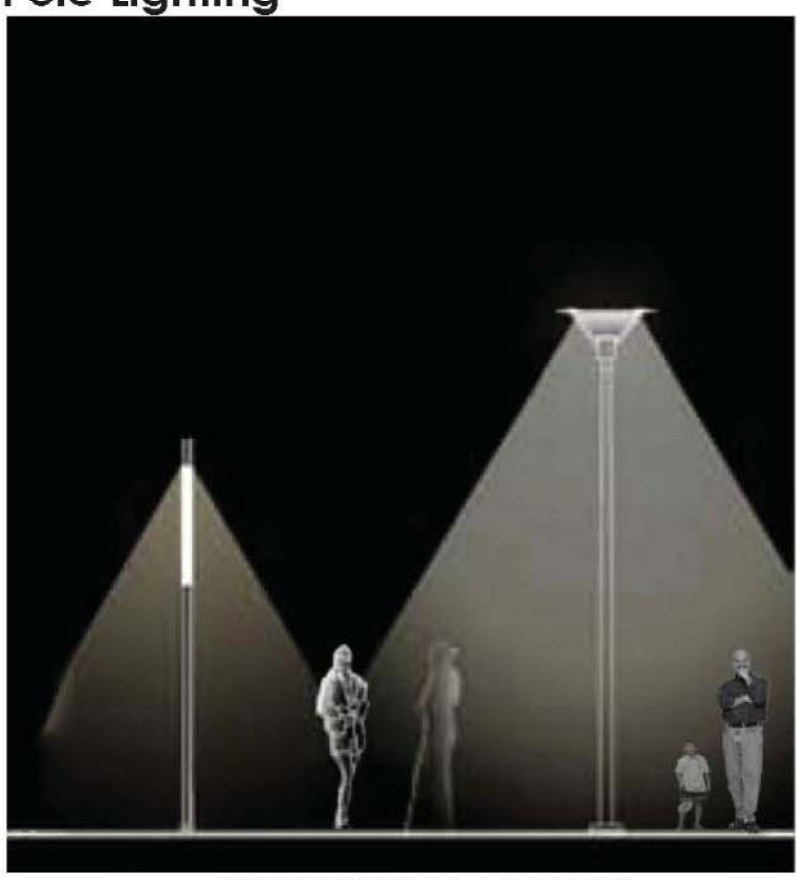
Sycamore Canyon Wilderness Park

Due to the presence of elevated terrain in the southeastern portions of Sycamore Canyon Wilderness Park, views of Project components may be visible to recreationists. From the north-south park trail located west of Eastridge Avenue and west of the Ralph's/Food 4 Less distribution warehouse located at 1500 Eastridge Avenue in the City of Riverside, the upper floors of the three- to five- story buildings and structures will be visible. However, continuous views of these buildings and structures will be obscured by the Ralph's/Food 4 Less distribution warehouse and other industrial warehouse buildings located east of I-215 in the Sycamore Canyon Business Park Specific Plan. Given the scale of proposed buildings, the upper floors of new development may rise above existing development in the foreground viewing distance from Sycamore Canyon Wilderness Park trails and may be visible.

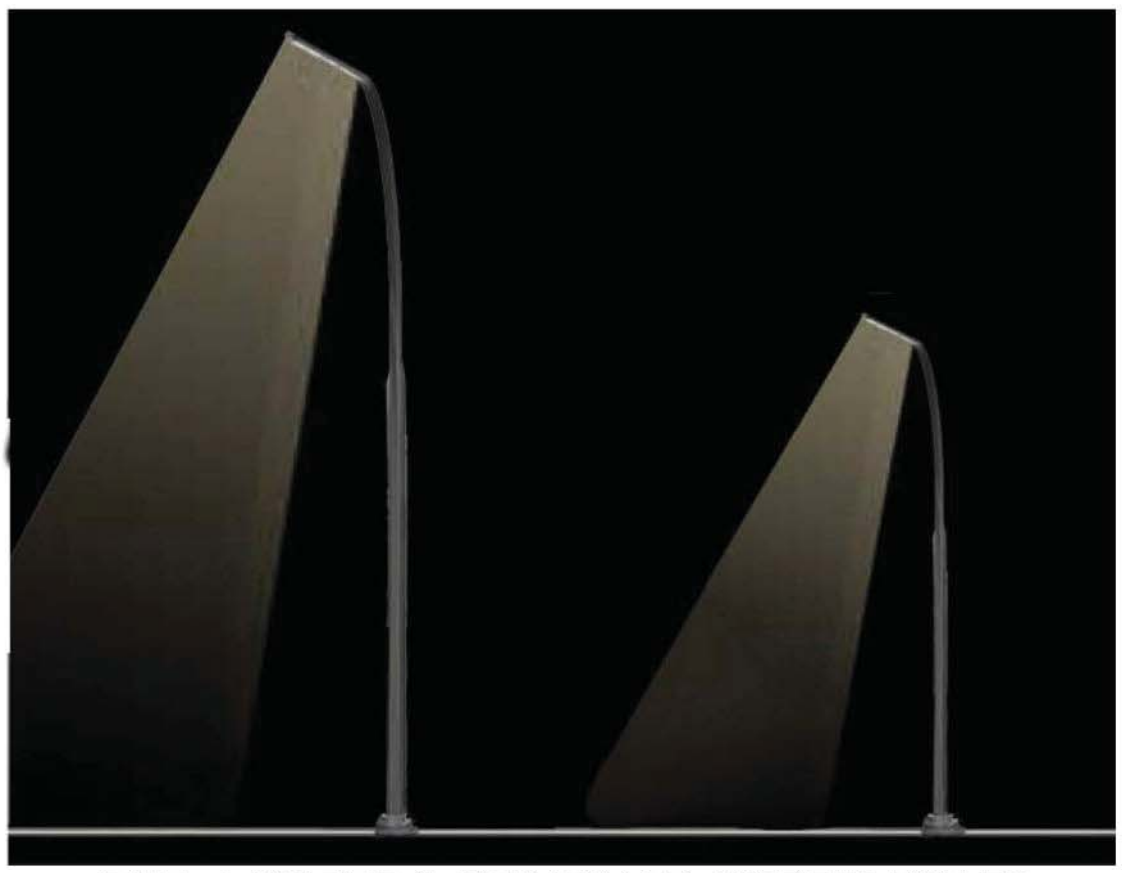
Accent and Low Level Lighting

LOW LEVEL BOLLARDS BENCH & TABLE SEATING

Pole Lighting

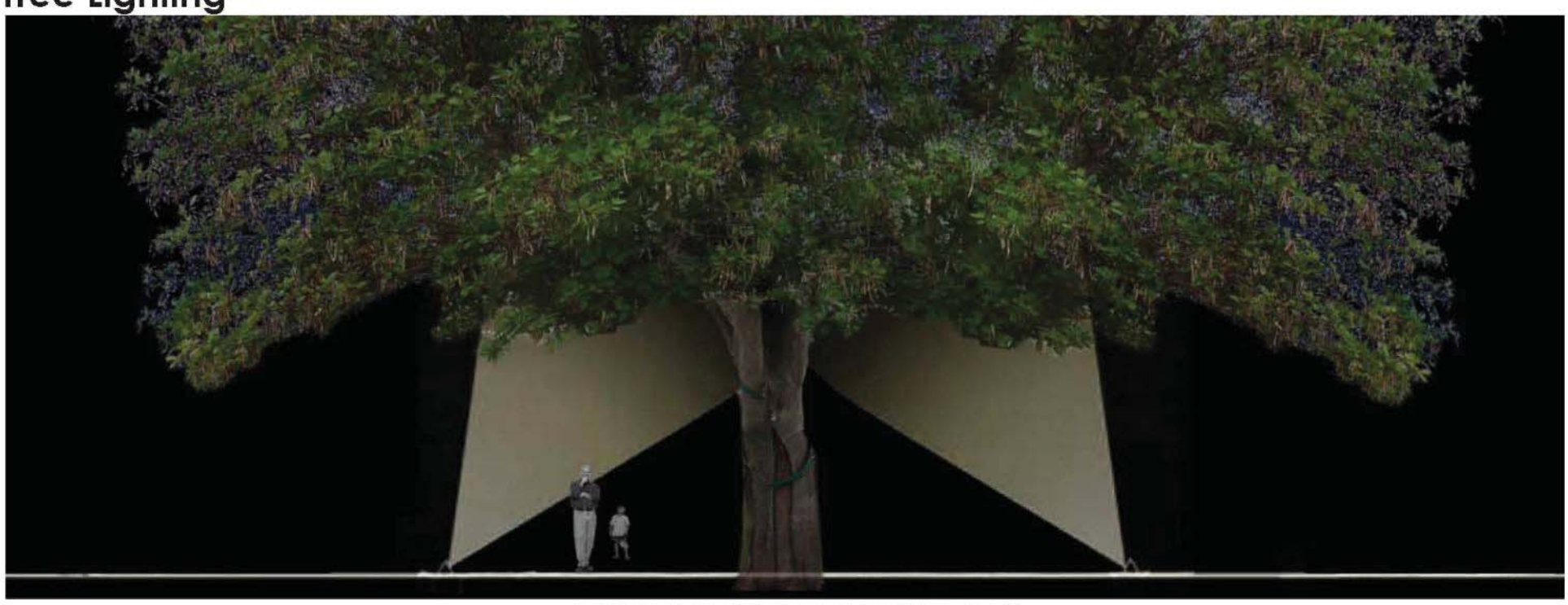


PEDESTRIAN POLES



TALL ACCENT & DRIVEWAY / STREET POLES

Tree Lighting



ACCENT TREE UPLIGHTING

SOURCE: HGA 2016

FIGURE 4.1-5

Lighting Techniques Diagram

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Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan

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Given the distance from the trail to the Project site, visible development on the Project site will occupy a small portion of views available from the trail and will appear compatible with office and regional commercial development located in the Canyon Springs Business Park Specific Plan. In addition, development of the Project site will not screen or obstruct available views from the trail to local scenic resources including Box Springs Mountain (located approximately 2 miles northeast of the trail) and mountainous terrain encircling Lake Perris (located approximately 7.5 miles southeast of the trail). As viewed from trails in Sycamore Canyon Wilderness Park, development on the Project site will not be visually prominent or display substantially different characteristics as existing development in the Canyon Springs Business Park Specific Plan. Further, development of the Project will not obstruct views currently available from the trails to local scenic features in the landscape. Therefore, Project development will not result in a substantial adverse effect on existing views and impacts are considered **less than significant**. No mitigation is required.

State Route 60

The City of Riverside does not identify SR-60 as a Scenic Route. However, the City of Moreno Valley identifies the entire portion of SR-60 within the City of Moreno Valley as a scenic route, extending from north of Moreno Valley Mall to Theodore Street. According to Figure 5.11-1, Major Scenic Resources, of the City of Moreno Valley's General Plan Final Program EIR Aesthetics section, SR-60 is a scenic corridor that provides fleeting views of major scenic resources, including the Badlands, the Foothills, the Mount Russell & Foothills area, and Box Springs Mountains (City of Moreno Valley 2006). The Project is located south of SR-60 and east of I-215. The Project will not obstruct or interrupt views from SR-60 of the Badlands or the Foothills areas as views of these areas are generally located east of the Moreno Valley city limits and north and south of SR-60. Mount Russell & Foothills area are not currently visible to eastbound SR-60 motorists as they approach the Project site. This is due to an elevated berm supporting the SR-60 East truck bypass travel lanes and rooflines of commercial retail development in the Canyon Springs Business Park Specific Plan Box Springs Mountain is located north of SR-60; therefore, development of the Project site located south of SR-60 will not obstruct or interrupt existing views of the terrain available to east- and west-bound motorists.

SR-60 west of Day Street is elevated above the adjacent properties to the south, providing views of the Cities of Riverside and Moreno Valley. Currently, three- and four-story medical office and office development located adjacent to Sites B and C are visible from SR-60 near Day Street, but do not rise above the horizon line. While the five-story hospital building will be taller than existing development in the immediate area, and will visible from SR-60, the duration of views to the new development will be short and will obscure the horizon line for a brief period, if at all. Further, according to Figure 7-2, Major Scenic Resources, of the Moreno Valley General Plan, views to the south from SR-60 near Day Street are not recognized as view corridors. Therefore, as proposed development will not substantially obstruct or interrupt existing views to major

scenic resources identified in the Moreno Valley General Plan available to SR-60 motorists, the Project will not result in a substantial adverse effect on a scenic vista along SR-60. Impacts are considered **less than significant**. No mitigation is required.

Threshold AES-2: Would the 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 or eligible state scenic highways from which views of the Project site are currently available. The nearest eligible facility of the California Scenic Highway System is I-215 from SR-74 near Romoland to SR-74 near Perris, approximately 11 miles south of the Project site (Caltrans 2016). The Project site is not visible from this segment of I-215 due to existing development and terrain. Further, due to the distance of the Project site from the scenic-designated segment of the I-215 freeway the mature tree located in the southwestern corner of Site B is not visible. The Project site does not support historic buildings or rock outcroppings.

Additionally, as discussed under threshold AES-1, the City of Moreno Valley identifies SR-60 as a Scenic Route; however, SR-60 is not designated as an eligible or officially designated state scenic highway by Caltrans. Therefore, because the Project will not substantially damage scenic resources within a state scenic highway, **no impact** to state scenic highways will occur as a result of Project development.

Threshold AES-3: Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

The Project includes a General Plan Amendment, amendment to the Canyon Springs Business Park Specific Plan, and the preparation of the Canyon Springs Healthcare Campus Specific Plan, in order to facilitate the development of the Project site with a hospital, MOBs, senior housing, independent living, assisted living, and a skilled nursing facility. The Canyon Springs Healthcare Campus Specific Plan provides a roadmap to guide future development over a 10-year period and identifies design and development standards for the development of medical and medical support uses in a manner that is compatible with existing uses and future needs. The general development standards are contained in Chapter 7 of the Specific Plan and described below.

Buildings and Parking Structures

The proposed building and parking structures will be consistent with the guidelines outlined in the Specific Plan. The Specific Plan identifies a maximum building height of 100 feet. Despite the maximum permitted building height, the majority of structures on the Project site will be three to four stories (approximately 50 feet or less) in height. Figures 4.1-1A and 4.1-1B,

Elevations, illustrates the bulk and scale of proposed development on the Project site. As shown on these figures, the five-story (approximately 94 feet tall) hospital building will be the tallest structure on the Project site. To help reduce the perceived scale of the buildings and break up the building mass, the following design features will be incorporated: step back design of buildings, architectural reveals and details, deep inset windows, variations in color, variations in texture, variations in materials, and incorporation of human scale elements such as pedestrian-scale doors and windows as detailed in Chapter 8, Design Guidelines, of the Canyon Springs Healthcare Campus Specific Plan.

In addition to the design guidelines outlined in Chapter 8 of the Specific Plan, Chapter 7, Development Standards, of the Specific Plan contains appropriate setbacks for Project development on Site C near existing single-family residences. Figures 4.1-2A through 4.1-2C illustrate the building setbacks on Site A, Site B, and Site C. Conceptual site landscaping is depicted on Figure 2-3, Site Plan. Furthermore, the hospital building will be located on the northwest corner of Site C (see Chapter 2, Figure 2-3, Site Plan) and north of Medical Office Buildings 3 and 4 and parking Structure Number 2 to provide an appropriate setback and buffer from the single-story residences fronting Eucalyptus Avenue to the south. As shown on Figure 4.1-2C the medical office building and parking structure will be set back 75 feet and 100 feet, respectively, from the adjacent single-family residences to the south and will be further buffered by screening walls and landscaping (discussed in more detail below). In addition, Chapter 8, Design Guidelines, of the Specific Plan requires that parking garage exteriors be designed to avoid a monolithic appearance. Design measures to break up the mass and scale of parking garages will include minimization of horizontal and vertical banding, use of simple, clean geometric forms, incorporation of openings that resemble large windows, use of green screens, and use of masonry materials that are predominantly light in color (unpainted CMUs will not be used).

While specifics have not yet been identified, acceptable building materials may include natural and cast stone, metal, plaster (or exterior insulation finishing system), glass, masonry, concrete and/or other contemporary composites. Unacceptable building materials may include vinyl siding, Masonite, and hardie board siding. Figures 4.1-3A–4.1-3C illustrate building materials that may and may not be used on structures on the Project site. These figures are meant solely to illustrate the character of building materials identified for development on the Project site. They are not intended to depict specific buildings that have been proposed on the Project site. As such, because the Project will implement design guidelines and appropriate setbacks, as outlined in the Specific Plan, the Project will not degrade the existing visual quality of the Project site and its surroundings. Impacts will be **less than significant**.

Landscaping

As depicted on Figure 2-4, Site Plan, in Chapter 2, development of the Project will include incorporation and installation of a landscape plan. Generally, the perimeters of the three sites will be landscaped with a variety of trees. Where the Project site abuts residential property, the installation of larger scale plantings will act as a visual buffer that will soften the medical office buildings and parking structure by breaking up the mass and scale of buildings (see Figures 4.1-6 and 4.1-7, which depict Project development and landscaping at 1 and 5 years following installation, as viewed from Eucalyptus Avenue). Landscaping installed along development frontages will be compatible with existing street trees. Landscape plans will be prepared as part of the administrative design review process for each phase of development. On-site landscaping will be in scale with the adjacent buildings and be appropriately sized at maturity. Pedestrian-scale plantings will be provided in courtyards and walkways and larger-scale plantings (including trees) will be used along street setbacks and vehicular entrances. Site perimeter and frontage trees will be compatible with existing street trees and the landscape plan will be comparable to landscaping installed at nearby office and commercial development. In addition, the proposed plantings will break up the mass of the medical office buildings and parking structure. Therefore, the Project's landscaping will not degrade the visual character of the Project site and its surroundings.

Signage

Signage will be installed throughout the Project site to identify the Specific Plan area and/or its specific components. Figure 4.1-4, Monument Signage Diagram, depicts the location of Project site monument and directional signage. Site signage standards are included in the Specific Plan (see Chapters 7 and 8) and are intended to ensure design consistency and maintain a high quality of design and aesthetics. The Specific Plan will ensure monument signs do not clutter the site perimeter and create eyesores along sidewalks and roadways. Development of the Project will not require construction of an additional freeway pylon sign. Rather, if the operator of the medical facility elects to be identified on a pylon sign, they may be identified on Pylon Sign F of the Canyon Springs Business Park Specific Plan. Thus, the Project will comply with the signage requirements outlined in the Specific Plan and the Project's signage will not degrade the quality of the Project site and its surroundings.

Landscaping depicted at 1 year following installation

Landscaping depicted at 5 years following installation

SOURCE: HGA, 2017

FIGURE 4.1-6

View 1: Looking towards Proposed MOB 4 and MOB 3 from Eucalyptus Avenue

DUDEK

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Landscaping depicted at 1 year following installation

Landscaping depicted at 5 years following installation

SOURCE: HGA, 2017

FIGURE 4.1-7

View 2: Looking towards Proposed Parking Structure 1, MOB 4, and MOB 3 from Eucalyptus Avenue

DUDEK

Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan

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Conclusion

The Specific Plan outlines specific criteria including, but not limited to, uses, floor area ratios, setbacks, landscape buffers, building design guidelines, landscape guidelines, and signage guidelines to ensure the Project is compatible with the surrounding developed areas. The Project will include the development of multistory structures on the currently vacant Project site. In addition, the Project will include the development of multistory structures on parcels adjacent to single-family residential uses. However, building setbacks, landscaping, and design features identified in the Specific Plan will be incorporated into Project design to reduce the apparent scale of structure and break up perceived building mass. Further, colors, exterior materials, and architectural details found on future buildings will be complimentary to existing development in the surrounding area. Also, detailed plans for development within the Canyon Springs Healthcare Campus will require separate City review and approval to ensure compliance with the development standards specified in the Specific Plan. Therefore, the Project will not degrade or significantly impact the existing visual character of the area or quality of the Project site and its surroundings. Impacts are considered **less than significant**. No mitigation is required.

Threshold AES-4: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The Project site is located in a developed area with existing sources of nighttime lighting. Currently there are sources of nighttime light and glare from the existing office, commercial, big box retail, and residential uses, as well as from street lights.

Construction

Construction activities associated with the Project will generally occur during the hours permitted by the City of Riverside Municipal Code in Chapter 7.35, General Noise Regulations (i.e., 7:00 a.m. to 7:00 p.m., Monday through Friday, and 8:00 a.m. to 5:00 p.m. on Saturdays). Therefore, construction activities will occur during daytime and early evening hours and will not generally require the use of lighting. However, during fall and winter seasons when the hours of daylight are shorter, evening construction activities may require the use of mobile/portable lighting. In these instances, the use of mobile/portable lighting will be required to comply with the City's lighting design and development standards (i.e., Section 19.556.020 of the City's Municipal Code) that include the use of directed, oriented, and shielded lighting that prevents light from shining onto adjacent properties, onto public rights-of-way and into driveway areas. In addition, mobile/portable lighting will be a temporary and potentially, seasonal source of lighting that ceases upon completion of construction. Therefore, given the presence of existing lighting sources to the east, west and north, the limited duration of use of mobile/portable lighting on the Project site, and the temporary nature of construction lighting, lighting associated with

construction activities will not adversely affect nighttime views in the area. Impacts during construction are considered **less than significant**. No mitigation is required.

Operation

During operations, new sources of light will be generated associated with the proposed uses including: security lighting, illuminated walkways, building entrance and identification lighting, surface parking area lighting, parking structure lighting, driveway lighting, and interior lighting. Chapter 7 of the Specific Plan identifies that the minimum and maximum light intensities for the Project area are described in Section 19.590.070 of the Riverside Municipal Code. Chapter 8 of the Specific Plan establishes design guidelines for the installation of lights. Figure 4.1-5, Lighting Techniques Diagram, illustrates the general lighting guidelines developed for the Project. Pursuant to the development standards and design guidelines pole lighting will be directed and shielded to prevent light from shining onto the adjacent properties, including the single-family residences located south of Site C, adjacent to Eucalyptus Avenue. Although the lighting proposed by the Project will increase lighting on the Project site compared to current conditions, the lighting will not result in substantial light or glare that will adversely affect nighttime views in the surrounding area. As previously stated, the Project site is located in an urban developed area with existing sources of nighttime lighting. Also, as part of the administrative design review process for each phase of development the Project will include a photometric study designed to comply with the requirements and policies of the Specific Plan. Additionally, a visual buffer will be provided by landscaping along the perimeter of the Project site which will help prevent lighting from shining onto adjacent properties. In terms of glare, trees will also help screen daytime glare generated by reflective surfaces of Site C building exteriors from adjacent properties and perimeter roadways. As such, operational impacts related to light and glare are considered **less than significant**. No mitigation is required.

4.1.6 Mitigation Measures

The State CEQA Guidelines (14 CCR 15126.4) require EIRs to describe feasible measures that can minimize significant adverse impacts. Impacts related to aesthetics have been found to be **less than significant**; therefore, no mitigation measures are necessary.

4.1.7 Environmental Impacts After Mitigation Is Incorporated

As described above, the Project will not result in any significant aesthetics impacts; therefore, no mitigation measures are required.

4.1.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

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4.2 AIR QUALITY

The focus of the following discussion and analysis is based on the Initial Study (IS) and Notice of Preparation (NOP) (Appendix A) and comments received during the NOP public comment period. This section:

- Describes the existing air quality setting of the Project (defined below) area
- Identifies relevant regulatory requirements
- Evaluates the Project's potential to conflict with an applicable air quality plan, violate any air quality standard or contribute substantially to an existing or project violation, result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard, or expose sensitive receptors to substantial pollutant concentrations
- Identifies mitigation measures related to implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project)

The IS/NOP (Appendix A) for the Project concluded that potential impacts related to creating objectionable odors were found to have a less than significant impact, and therefore, are not discussed further in this Draft Environmental Impact Report (EIR).

4.2.1 Setting

Climate and Topography

The Project site is located within the South Coast Air Basin (SCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. SCAB is characterized as having a Mediterranean climate (typified as semiarid with mild winters, warm summers, and moderate rainfall). SCAB is a 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The general region lies in the semi-permanent, high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in SCAB is a function of the area's natural physical characteristics (e.g., weather and topography) as well as of man-made influences (e.g., development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout SCAB.

During spring and early summer, air pollution produced during any one day is typically blown out of SCAB through mountain passes or lifted by warm, vertical currents adjacent to mountain slopes. The vertical dispersion of air pollutants in SCAB is limited by temperature inversions in the atmosphere close to the Earth's surface. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are carbon monoxide (CO), particulate matter, and nitrogen dioxide (NO_2) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and oxides of nitrogen (NO_x) to form photochemical smog.

The City of Riverside's (the City's) climate is characterized by relatively low rainfall, with warm summers and mild winters. Average temperatures range from a high of 95 degrees Fahrenheit (°F) in August to a low of 40°F in December (City-Data.com 2016).

4.2.1.1 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Facilities and structures where these air pollution-sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses where air pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005). The nearest sensitive receptors proximate to the Project site are single-family residences located adjacent to the south boundary of the Project site, north of Eucalyptus Avenue.

4.2.1.2 Pollutants and Effects

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include ozone (O_3), NO_2, CO, sulfur dioxide (SO_2), particulate matter

with an aerodynamic diameter equal to or less than 10 microns (PM_{10}), particulate matter with an aerodynamic diameter equal to or less than 2.5 microns ($PM_{2.5}$), and lead (Pb). These pollutants, as well as toxic air contaminants (TACs), are discussed below.[1] In California, sulfates (SO_4), vinyl chloride, hydrogen sulfide (H_2S), and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone (O_3). O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors, such as hydrocarbons and NO_x. These precursors are mainly NO_x and volatile organic compounds (VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere ozone layer (stratospheric O_3) as well as at the Earth's surface (tropospheric O_3). O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Nitrogen Dioxide (NO_2). NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO), which is a colorless, odorless gas. NO_2 and NO are gases composed of a mixture of nitrogen and oxygen and are part of the group of compounds termed oxides of nitrogen (NO_x). NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers. NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections.

Carbon Monoxide (CO). CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, fossil, or fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas such as the Project location, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air

[1] The descriptions of health effects for each of the criteria air pollutants associated with Project construction and operation are based on the U.S. Environmental Protection Agency's (EPA's) Six Common Air Pollutants (EPA 2015) and the California Air Resources Board (CARB) Glossary of Air Pollutant Terms (CARB 2015).

pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions.

Sulfur Dioxide (SO_2). SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter (PM_{10} and $PM_{2.5}$). Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Fine particulate matter ($PM_{2.5}$) is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs. Respirable particulate matter, or coarse particulate matter (PM_{10}), is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as Pb and SO_4 can cause lung damage directly or be

absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport absorbed gases such as chlorides or ammonium into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also damage and discolor surfaces on which they settle, as well as producing haze and reducing regional visibility.

People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive are smokers, people who cannot breathe well through their noses, and exercising athletes (because many breathe through their mouths).

Lead (Pb). Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead.

Volatile Organic Compounds (VOC). Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for VOCs as a group.

Sulfates. Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere. Sulfates can result in respiratory impairment, as well as reduced visibility.

Vinyl Chloride. Vinyl chloride is a colorless gas with a mild, sweet odor, which has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

Hydrogen Sulfide. Hydrogen sulfide is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of hydrogen sulfide include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to hydrogen sulfide can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

Visibility-Reducing Particles. Visibility-reducing particles are any particles in the air that obstruct the range of visibility. Effects of reduced visibility can include obscuring the viewshed of natural scenery, reducing airport safety, and discouraging tourism. Sources of visibility-reducing particles are the same as for $PM_{2.5}$ described above.

Non-Criteria Air Pollutants

Toxic Air Contaminants (TACs). A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is termed by federal agencies as a hazardous air pollutant (HAP) and by state agencies as a TAC and are identified based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area

sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Diesel Particulate Matter (DPM). DPM is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. The California Air Resources Board (CARB) classified "particulate emissions from diesel-fueled engines" (i.e., DPM) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars, and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000).

4.2.1.3 Categories of Emission Sources

Air pollutants are emitted by a variety of sources, including mobile sources (vehicles), area sources (hearths, consumer product use, architectural coatings, and landscape maintenance equipment), energy (natural gas combustion), and stationary sources (generators or other stationary equipment). While some of the air pollutants that are emitted need to be examined at the local level because the pollutants are emitted directly or are formed close to the source (such as PM_{10}, $PM_{2.5}$, CO, and TAC), others are predominately an issue at the regional level (such as O_3).

4.2.2 Relevant Regulations, Plans, Policies, and Ordinances

Regulatory oversight for air quality in SCAB is maintained by the U.S. Environmental Protection Agency (EPA) at the federal level, CARB at the state level, and the South Coast Air Quality Management District (SCAQMD) at the regional level. Applicable laws, regulations, and standards of these three agencies are described as follows.

4.2.2.1 Federal

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the Clean Air Act, including the setting of National Ambient Air Quality Standards (NAAQS; federal standards) for major air pollutants, hazardous air pollutant standards, approval of state attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric O_3 protection, and enforcement provisions. Federal standards are established for criteria pollutants under the Clean Air Act, which are O_3, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and Pb.

The federal standards describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The federal standards (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. Federal standards for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the federal standards at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the federal standards must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated time frames.

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the federal standards to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels.

The 1977 federal Clean Air Act Amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants to protect public health and welfare. HAPs include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal Clean Air Act Amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

4.2.2.2 State

California Air Resources Board

CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established California Ambient Air Quality Standards (California standards; CAAQS), which are generally more restrictive than the federal standards. The state standards describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. The state standards for O_3, NO_2, CO, SO_2 (1 hour and 24 hours), PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The federal and California standards are presented in Table 4.2-1, Ambient Air Quality Standards.

Table 4.2-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	Federal Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1 hour	0.09 ppm (180 µg/m³)	—	Same as Primary Standard[f]
	8 hours	0.070 ppm (137 µg/m³)	0.070 ppm (137 µg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 µg/m³)	0.100 ppm (188 µg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 µg/m³)	0.075 ppm (196 µg/m³)	—
	3 hours	—	—	0.5 ppm (1,300 µg/m³)
	24 hours	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 µg/m³	150 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m³	—	
$PM_{2.5}$[i]	24 hours	—	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	12.0 µg/m³	15.0 µg/m³
Pb[jj,k]	30-day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³ (for certain areas)[k]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m³	
H_2SH_2S	1 hour	0.03 ppm (42 µg/m³)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 µg/m³)	—	—
SO_4SO_4	24- hours	25 µg/m³	—	—
Visibility reducing particles	8 hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%	—	—

Source: CARB 2016a.

Notes: ppm = parts per million by volume; µg/m³ = micrograms per cubic meter; mg/m³= milligrams per cubic meter.

a California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility-reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 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 PM_{10}, 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 (µg/m³) is equal to or less than one. For $PM_{2.5}$, 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° Celsius (°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] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] On October 1, 2015, the primary and secondary NAAQS for O_3 were lowered from 0.075 ppm to 0.070 ppm

[g] 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 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 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 SO_2 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 nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[j] CARB has identified lead and vinyl chloride as TACs 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.

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

As part of its diesel risk reduction program, CARB adopted an Airborne Toxic Control Measure (ATCM) that applies to new and in-use stationary compression-ignition (i.e., diesel) engines. The ATCM was adopted in 2004 and revised in November 2010 with an effective date of May 19, 2011. After December 31, 2008, the ATCM requires that new emergency standby engines must comply with EPA emissions standards applicable to a 2007-model-year off-road engine of the same horsepower rating. The ATCM further limits the particulate matter emissions from an emergency standby engine operated less than 50 hours per year for maintenance and testing to 0.15 gram per brake-horsepower-hour.

California Green Building Code

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Title 24 includes Part 11, known as California's Green Building Standards. California's Green Building Standards, which initially took effect in January 2011, were updated effective January 1, 2017, and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, as well as schools and hospitals. The mandatory standards require the following:

- A 20% mandatory reduction in indoor water use.
- Diversion of 50% of construction and demolition waste from landfills.

- Mandatory inspections of energy systems to ensure optimal working efficiency.
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particleboard.

California's Green Building Standards also include voluntary efficiency measures that are provided at two separate tiers and implemented per the discretion of local agencies and applicants.

4.2.2.3 Local

South Coast Air Quality Management District

The SCAQMD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in SCAB, where the Project is located. The SCAQMD operates monitoring stations in SCAB, develops rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. The SCAQMD's *Air Quality Management Plans* (AQMPs) include control measures and strategies to be implemented to attain state and federal ambient air quality standards in SCAB. The SCAQMD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment.

The most recent adopted AQMP is the 2016 AQMP (SCAQMD 2017), which was adopted by the SCAQMD governing board on March 3, 2017. The 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gases and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017). Because mobile sources are the principal contributor to SCAB's air quality challenges, the SCAQMD has been and will continue to be closely engaged with CARB and the EPA, who have primary responsibility for these sources. The 2016 AQMP recognizes the critical importance of working with other agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies in a manner that benefits not only air quality but also local businesses and the regional economy. These "win-win" scenarios are key to implementation of this 2016 AQMP with broad support from a wide range of stakeholders. The SCAQMD 2016 AQMP applies the updated Southern California Association of Governments growth forecasts assumed in the *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy* (2016 RTP/SCS).

Emissions that would result from mobile and stationary sources during construction and operation of the Project are subject to the rules and regulations of the SCAQMD. The SCAQMD rules applicable to the Project construction activities may include the following:

- **Rule 201 – Permit to Construct:** This rule establishes an orderly procedure for the review of new and modified sources of air pollution through the issuance of permits. Rule 201 specifies that any facility installing nonexempt equipment that causes or controls the emissions of air pollutants must first obtain a permit to construct from the SCAQMD.
- **Rule 401 – Visible Emissions:** This rule establishes the limit for visible emissions from stationary sources. This rule prohibits visible emissions dark or darker than Ringlemann No.1 for periods greater than 3 minutes in any hour.
- **Rule 402 – Nuisance:** This rule prohibits the discharge of air pollutants from a facility that cause injury, detriment, nuisance, or annoyance to the public or damage to business or property.
- **Rule 403 – Fugitive Dust:** This rule requires fugitive dust sources to implement best available control measures for all sources and prohibits all forms of visible particulate matter from crossing any property line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. Measures included under Rule 403 to control fugitive dust include watering active construction areas and limiting vehicle speeds to 15 miles per hour over disturbed areas.
- **Rule 431.2 – Sulfur Content of Liquid Fuels:** The purpose of this rule is to limit the sulfur content in diesel and other liquid fuels for the purpose both of reducing the formation of SO_x and particulates during combustion and of enabling the use of add-on control devices for diesel-fueled internal combustion engines. The rule applies to all refiners, importers, and other fuel suppliers such as distributors, marketers, and retailers, as well as to users of diesel, low-sulfur diesel, and other liquid fuels for stationary-source applications in the SCAQMD. The rule also affects diesel fuel supplied for mobile source applications.
- **Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines:** This rule applies to stationary and portable engines rated at greater than 50 horsepower. The purpose of Rule 1110.2 is to reduce NO_x, VOCs, and CO emissions from engines. Emergency engines, including those powering standby generators, are generally exempt from the emissions and monitoring requirements of this rule as they have permit conditions that limit operation to 200 hours or less per year as determined by an elapsed operating time meter.
- **Rule 1113 – Architectural Coatings:** This rule 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.

- **Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters:** This rule applies to boilers, steam generators, and process heaters of equal to or greater than 5 million British thermal units (Btu) per hour rated heat input capacity used in all industrial, institutional, and commercial operations with the exception of boilers used by electric utilities to generate electricity, boilers and process heaters with a rated heat input capacity greater than 40 million Btu per hour that are used in petroleum refineries, and sulfur plant reaction boilers. Under this rule, the NO_x and CO exhaust concentration for Group III boilers (rated from 5 to less than 20 million Btu per hour) are limited to 9 parts per million (ppm) and 400 ppm, respectively, by volume referenced at 3% oxygen on a dry basis.
- **Regulation XIII – New Source Review:** This regulation sets preconstruction review requirements for new, modified, or relocated facilities to ensure that the operation of such facilities does not interfere with progress in attainment of the NAAQS and that future economic growth within SCAQMD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors. In addition to nonattainment air contaminants, this regulation will also limit emission increases of ammonia and O_3-depleting compounds from new, modified, or relocated facilities by requiring the use of best available control technology.
- **Regulation XIV – Toxics and Other Non-Criteria Pollutants:** This regulation includes rules that regulate toxics and other non-criteria pollutants. It provides specifications for maximum individual cancer risk, cancer burden, and noncancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units that emit TACs. The rules establish allowable risks for permit units requiring new permits pursuant to Rules 201 or 203. Under this regulation, Rule 1401 (New Source Review of Toxic Air Contaminants) specifies limits for maximum individual cancer risk, cancer burden, and noncancer acute and chronic hazard indices from new permit units, relocations, or modifications to existing permit units that emit TACs listed in the rule.

Local Ambient Air Quality and South Coast Air Basin Attainment Designation

Pursuant to the 1990 federal Clean Air Act Amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the NAAQS have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or

"unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are redesignated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on CAAQS rather than the NAAQS.

The criteria air pollutant attainment classifications are outlined in Table 4.2-2, South Coast Air Basin Attainment Classification.

Table 4.2-2
South Coast Air Basin Attainment Classification

Pollutant	Averaging Time	Designation/Classification
Federal Standards		
O_3	8 hours	Nonattainment/Extreme
NO_2	1 hour	Unclassifiable/attainment
	Annual arithmetic mean	Attainment (maintenance)
CO	1 hour; 8 hours	Attainment (maintenance)
SO_2	24 hours; annual arithmetic mean	Unclassifiable/attainment
PM_{10}	24 hours	Attainment (maintenance)
$PM_{2.5}$	24 hours; annual arithmetic mean	Nonattainment (serious)
Pb	Quarter	Unclassifiable/attainment
	3-month average	Nonattainment (partial)[a]
State Standards		
O_3	1 hour; 8 hours	Nonattainment
NO_2	1 hour; annual arithmetic mean	Attainment
CO	1 hour; 8 hours	Attainment
SO_2	1 hour; 24 hours	Attainment
PM_{10}	24 hours; annual arithmetic mean	Nonattainment
$PM_{2.5}$	Annual arithmetic mean	Nonattainment
Pb[b]	30-day average	Attainment
SO_4	24 hours	Attainment
H_2S	1 hour	Unclassified
Vinyl chloride[b]	24 hours	No designation
Visibility-reducing particles	8 hours (10:00 a.m.–6:00 p.m.)	Unclassified

Sources: EPA 2016a (federal); CARB 2016b (state).
Notes: O_3 = ozone; NO_2 = nitrogen dioxide; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; Pb = lead.
[a] Partial Nonattainment designation – Los Angeles County portion of SCAB only for near-source monitors. Expected to remain in attainment based on current monitoring data.
[b] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined.

In summary, SCAB is designated as a nonattainment area for federal and state O_3 standards, and federal and state $PM_{2.5}$ standards. SCAB is designated as a nonattainment area for state PM_{10}

standards; however, it is designated as an attainment area for federal PM_{10} standards. SCAB is designated as an attainment area for federal and state CO standards, federal and state NO_2 standards, and federal and state SO_2 standards. While SCAB has been designated as nonattainment for the federal rolling 3-month average lead standard, it is designated attainment for the state lead standard.

Relative to the Project site, the nearest long-term air quality monitoring site for CO, NO_2, and $PM_{2.5}$ is the Metropolitan Riverside County 2 monitoring station, located approximately 6.5 miles west of the Project site. Data for O_3 and PM_{10} were obtained from the Metropolitan Riverside County 1 monitoring station located approximately 8.75 miles northwest of the Project site since it is the nearest monitoring station with available data for these pollutants. It should be noted that the Metropolitan Riverside County 1 monitoring station was utilized in lieu of the Metropolitan Riverside County 2 monitoring station only in instances where data was not available from the Metropolitan Riverside County 2 site.

The most recent 3 years of data available is shown on Table 4.2-3 and identifies the number of days ambient air quality standards were exceeded for the study area, which is considered to be representative of the local air quality at the Project site. Additionally, data for SO_2 has been omitted as attainment is regularly met in SCAB and few monitoring stations measure SO_2 concentrations.

Table 4.2-3
Project Area Air Quality Monitoring Summary (Years 2013 to 2015)

Pollutant	Standard	2013	2014	2015
O_3				
Maximum 1-Hour Concentration (ppm)	–	0.123	0.141	0.132
Maximum 8-Hour Concentration (ppm)	–	0.103	0.104	0.103
Number of Days Exceeding State 1-Hour Standard	>0.09 ppm	13	29	31
Number of Days Exceeding State 8-Hour Standard	>0.07 ppm	38	69	59
Number of Days Exceeding Federal 1-Hour Standard	>0.12 ppm	0	1	1
Number of Days Exceeding Federal 8-Hour Standard	>0.075 ppm	26	41	39
Number of Days Exceeding Health Advisory	≥0.15 ppm	0	0	0
CO				
Maximum 1-Hour Concentration (ppm)	–	4.5	2.0	–
Maximum 8-Hour Concentration (ppm)	–	1.6	2.4	–
Number of Days Exceeding State 1-Hour Standard	>20 ppm	0	0	–
Number of Days Exceeding Federal/State 8-Hour Standard	>9.0 ppm	0	0	–
Number of Days Exceeding Federal 1-Hour Standard	>35 ppm	0	0	–
NO_2				
Maximum 1-Hour Concentration (ppm)	–	0.058	0.058	0.057
Annual Arithmetic Mean Concentration (ppm)	–	–	0.015	0.014
Number of Days Exceeding State 1-Hour Standard	>0.18 ppm	0	0	0

Table 4.2-3
Project Area Air Quality Monitoring Summary (Years 2013 to 2015)

Pollutant	Standard	2013	2014	2015
PM_{10}				
Maximum 24-Hour Concentration (µg/m³)	–	135	100	69
Number of Samples	–	117	117	–
Number of Samples Exceeding State Standard	>50 µg/m³	86	119	87
Number of Samples Exceeding Federal Standard	>150 µg/m³	0	0	0
$PM_{2.5}$				
Maximum 24-Hour Concentration (µg/m³)	–	53.7	–	54.7
Annual Arithmetic Mean (µg/m³)	–	11.3	14.5	–
Number of Samples Exceeding Federal 24-Hour Standard	>35 µg/m³	–	–	9

Source: Appendix H.
Notes: ppm = parts per million; O_3 = ozone; PM_{10} = coarse particulate matter; µg/m3 = micrograms per cubic meter; $PM_{2.5}$ = fine particulate matter; NO_2 = nitrogen dioxide; N/A = not available; CO = carbon monoxide; SO_2 = sulfur dioxide; "–" = not available or not applicable
Data for CO, NO_2, and $PM_{2.5}$ was obtained from the Metropolitan Riverside County 2 monitoring station and data for O_3 and PM_{10} was obtained from the Metropolitan Riverside County 1 monitoring station.

City of Riverside General Plan 2025

The Air Quality Element of the *City of Riverside General Plan 2025* (City of Riverside 2007) includes air quality policies intended to limit sources of air pollution and sensitive receptor exposure. The following policies are applicable to the Project:

Objective AQ-1: Adopt land use policies that site polluting facilities away from sensitive receptors and vice versa; improve jobs-housing balance; reduce vehicle miles travelled and length of work trips; and improve the flow of traffic.

Policy AQ-1.3: Separate, buffer and protect sensitive receptors from significant sources of pollution to the greatest extent possible.

Policy AQ-1.4: Facilitate communication between residents and businesses on nuisance issues related to air quality.

Policy AQ-1.10: Encourage job creation in job-poor areas as a means of reducing vehicle miles traveled.

Policy AQ-1.13: Encourage employment centers that are nonpolluting or extremely low-polluting and do not draw large numbers of vehicles in proximity to residential uses.

Policy AQ-1.15: Establish land use patterns that reduce the number and length of motor vehicle trips and promote alternative modes of travel.

Policy AQ-1.16: Design safe and efficient vehicular access to commercial land uses from arterial streets to ensure efficient vehicular ingress and egress.

Policy AQ-1.19: Require future commercial areas to foster pedestrian circulation through the land use entitlement process and/or business regulation.

Policy AQ-1.20: Create the maximum possible opportunities for bicycles as an alternative work transportation mode.

Policy AQ-2.1: Support Transportation Management Associations between large employers and commercial/ industrial complexes.

Policy AQ-2.6: Develop trip reduction plans that promote alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education and preferential parking.

Policy AQ-2.17: Encourage, and to the extent possible, require through the land use entitlement or business regulation process, business owners to schedule deliveries at off-peak traffic periods.

Policy AQ-3.4: Require projects to mitigate, to the extent feasible, anticipated emissions which exceed AQMP Guidelines.

Policy AQ-3.7: Require use of pollution control measures for stationary and area sources through the use of best available control activities, fuel/material substitution, cleaner fuel alternatives, product reformulation, change in work practices and of control measures identified in the latest AQMP.

Policy AQ-3.7: Require use of pollution control measures for stationary and area sources through the use of best available control activities, fuel/material substitution, cleaner fuel alternatives, product reformulation, change in work practices and of control measures identified in the latest AQMP.

Policy AQ-4.2: Reduce particulate matter from agriculture (e.g., require use of clean non-diesel equipment and particulate traps), construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way and off-road vehicles to the extent possible, as provided in SCAQMD Rule 403.

Policy AQ-4.5: Require the suspension of all grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour.

4.2.3 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.), and will be used to determine the significance of potential impacts related to air quality. Based on the IS prepared for the Project (Appendix A) and Appendix G of the State CEQA Guidelines, a development project could have a significant impact related to air quality if the project would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.

As noted previously, the IS/NOP for this EIR (Appendix A) concluded that potential impacts related to creating objectionable odors were found to have a less than significant impact and are therefore not discussed further. All other criteria are assessed below.

Appendix G of the State CEQA Guidelines indicates that, where available, the significance criteria established by the applicable air quality management district or pollution control district may be relied upon to determine whether the project would have a significant impact on air quality. The SCAQMD *CEQA Air Quality Handbook* (SCAQMD 1993), as revised in March 2015, sets forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality (SCAQMD 2015). Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 4.2-4, SCAQMD Air Quality Significance Thresholds, are exceeded.

A project would result in a substantial contribution to an existing air quality violation of the NAAQS or CAAQS for O_3 (see Table 4.2-1), which is a nonattainment pollutant, if the project's construction or operational emissions would exceed the SCAQMD VOC or NO_x thresholds shown in Table 4.2-4. These emission-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur) because O_3 itself is not emitted directly (see the previous discussion of O_3 and its sources), and the effects of an individual project's emissions of O_3 precursors (VOC and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods.

Table 4.2-4
SCAQMD Air Quality Significance Thresholds

Pollutant	Construction	Operation
Criteria Pollutants Mass Daily Thresholds		
VOCs	75 lb/day	55 lb/day
NO_x	100 lb/day	55 lb/day
CO	550 lb/day	550 lb/day
SO_x	150 lb/day	150 lb/day
PM_{10}	150 lb/day	150 lb/day
$PM_{2.5}$	55 lb/day	55 lb/day
Pb[a]	3 lb/day	3 lb/day
TACs and Odor Thresholds		
TACs[b]	Maximum incremental cancer risk ≥ 10 in 1 million Chronic & acute hazard index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants[c]		
NO_2 1-hour average NO_2 annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.030 ppm (state) and 0.0534 ppm (federal)	
CO 1-hour average CO 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
PM_{10} 24-hour average PM_{10} annual average	10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation) 1.0 μg/m³	
$PM_{2.5}$ 24-hour average	10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation)	

Source: SCAQMD 2015.
Notes: SCAQMD = South Coast Air Quality Management District; VOC = volatile organic compounds; lb/day = pounds per day; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; NO_2 = nitrogen dioxide; ppm = parts per million; μg/m³ = micrograms per cubic meter.
[a] The phase-out of leaded gasoline started in 1976. Since gasoline no longer contains lead, the Project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.
[b] TACs include carcinogens and non-carcinogens.
[c] Ambient air quality standards for criteria pollutants based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.
[d] Ambient air quality threshold based on SCAQMD Rule 403.

In addition to the emission-based thresholds in Table 4.2-4, the SCAQMD also recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the Project as a result of construction and operation activities. Such an evaluation is referred to as a Localized Significance Threshold (LST) analysis. For project sites greater than 5 acres, potential impacts on local sensitive receptors are determined using an air quality dispersion model. Those impacts are then compared to the LSTs. The applicable construction and operational LSTs for CO and NO_2 are:

- California State 1-hour CO standard of 20.0 ppm

- California State 8-hour CO standard of 9.0 ppm
- California State 1-hour NO_2 standard of 0.18 ppm

The applicable construction LSTs for PM_{10} and $PM_{2.5}$ include:

- SCAQMD 24-hour PM_{10} standard of 10.4 $\mu g/m^3$
- SCAQMD 24-hour $PM_{2.5}$ standard of 10.4 $\mu g/m^3$

The applicable operational LSTs for PM_{10} and $PM_{2.5}$ include:

- SCAQMD 24-hour PM_{10} standard of 2.5 $\mu g/m^3$
- SCAQMD 24-hour $PM_{2.5}$ standard of 2.5 $\mu g/m^3$

The LST significance thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of a project that would not cause or contribute to an exceedance of the relevant ambient air quality standards. The LST significance threshold for PM_{10} and $PM_{2.5}$ are intended to ensure that emissions do not contribute substantially to existing exceedances of the respective ambient air quality standards.

Methodology

Construction of the Project will result in criteria air pollutant emissions that are primarily associated with use of off-road construction equipment and on-road construction trucks and worker vehicles. Construction emissions associated with the Project were calculated using the California Emissions Estimator Model (CalEEMod) Version 2013.2.2. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per the State CEQA Guidelines. Site-specific construction fleet may vary due to specific Project needs at the time of construction. It is possible that construction parking and equipment staging may occur off site for future construction; however, possible staging areas are expected to be within 2 miles or less of the Project site and will be covered by the default vendor and worker trip distances included in CalEEMod.

Operation of the Project will result in criteria air pollutant emissions through energy use, area sources, motor vehicle trips, and helicopter transport to the Project site. CalEEMod was used to estimate emissions from motor vehicles, which was adjusted to include information derived from the Traffic Impact Analysis prepared by Urban Crossroads (Appendix L). In addition to estimating mobile source emissions, CalEEMod was used to estimate emissions from the Project area sources, which include gasoline-powered landscape maintenance equipment, consumer products, and architectural coatings for maintenance. Emissions from energy sources, which include natural gas appliances, and space and water heating, were also estimated using CalEEMod.

Helicopter emissions were estimated for a H145 Airbus and a Blackhawk helicopter, which would be representative helicopter types for typical hospital and trauma activities. It was assumed that one typical helicopter and one trauma helicopter would be generated by the Project on a peak day, which are assumed to be concurrent with the peak operational emissions from other sources described above. Emission estimates were compared against SCAQMD emission-based significance thresholds for criteria pollutants and other thresholds to determine Project impacts. Detailed model outputs for construction and operational emissions are included in Appendix H.

An LST analysis was conducted to evaluate localized emissions during construction and operation of the Project. Notably, the Project could actively disturb approximately 6 acres per day based on rough grading activity and thus, exceed the 5-acre per day limit established by the SCAQMD's LST look-up tables (SCAQMD 2008). In order to account for worst-case conditions, and since precise construction phasing information is not available at this time, SCREEN3 was used to calculate localized pollutant concentrations for construction and operational activity. SCREEN3 uses dispersion screening techniques to estimate impacts of point, area, and volume stationary sources. Detailed model assumptions and outputs for the LST analysis are included in Appendix H.

A Health Risk Assessment (HRA) was prepared by Urban Crossroads to evaluate the potential mobile source health risk impacts to sensitive receptors as a result of exposure to DPM as a result of heavy-duty diesel trucks accessing the site, emergency diesel generators, and toxics emitted from helicopter use (also included in Appendix H).

4.2.4 Project Features That Will Reduce Impacts

The Project will be required to comply with SCAQMD Rule 403 to control dust emissions generated during the building construction and grading activities. The contractor is required to procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings). The Project is required to comply with SCAQMD Rule 445, which prohibits the use of wood burning stoves and fireplaces in new development.

Additionally, as discussed in Section 5, Circulation, of the Canyon Springs Healthcare Campus Specific Plan, transportation demand management (TDM) is a strategy design to reduce single-occupancy vehicle trips during peak hours. TDM seeks to shift commuters to transportation modes other than cars and to encourage ride-sharing and carpooling programs, which would also reduce associated air pollutants. The Canyon Springs Healthcare Campus Specific Plan incorporates the following TDM measures:

- Canyon Springs Healthcare will implement two ride-sharing rewards programs in coordination with Inland Empire Transit. Both programs are promoted through informational flyers and at new hire orientation. A TDM coordinator is available to

facilitate the distribution of information and make sure it remains current. The programs are described as follows:

  - 2 Dollars/Day Program: Participants log their modes of commuting for 3 months and are awarded points for using alternative modes of transportation, such as the Metrolink, bus, bike routes, and carpooling. The program enables employees to connect for carpools. At the end of the 3-month period, participants are awarded gift cards based on the points accrued.
  - Ride-Share Plus Program: Participants are provided with tools for carpooling, bicycling, and other alternative modes of transportation. Participants in this program have usually completed the 2 Dollars/Day Program and continue to log hours to accumulate rewards, such as a coupon book. The coupon book offers savings at local businesses as well as the ability to register the coupon book online to access discounts at merchants nationwide.

- Preferential parking for carpool vehicles.
- Bicycle parking and shower facilities for employees.
- Local transportation management and roadway improvements.
- On-site amenities such as cafeterias, restaurants, automated teller machines, and other services that would eliminate the need for additional trips.

As discussed in Section 6, Public Utilities and Services, of the Canyon Springs Healthcare Campus Specific Plan, in an effort to become a more sustainable hospital campus, the Project will include the following sustainable features:

Energy Efficiency

- Design building shells and components, such as windows, roof systems, and electrical systems to meet California Title 24 Standards for nonresidential buildings.
- Install efficient lighting and lighting control systems. Solar or light-emitting diodes (LEDs) will be installed for outdoor lighting. The site and buildings will be designed to take advantage of daylight, such that use of daylight is an integral part of the lighting systems in buildings. Lighting will incorporate motion sensors that turn them off when not in use.
- Use trees and landscaping on west and south exterior building walls to reduce energy use.
- Install light colored "cool" roofs over office area spaces and cool pavements.
- For future office improvement, install energy efficient heating and cooling systems, appliances and equipment, and control systems that are Energy Star-rated.

- For future office improvement, refrigerants and HVAC equipment will be selected to minimize or eliminate the emission of compounds that contribute to ozone depletion and global warming. Ventilation and HVAC systems will be designed to meet or exceed the minimum outdoor air ventilation rates described in the American Society of Heating, Refrigeration, and Air Conditioning Engineers standards and/or per California Title 24 requirements.
- Provide vegetative or human-made exterior wall shading devices or window treatments for east, south, and west-facing walls with windows.
- Incorporate Energy Star-rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.

Renewable Energy

- Design buildings to have "solar ready" roofs, where feasible, that will structurally accommodate later installation of rooftop solar panels. Building operators providing rooftop solar panels will submit plans for solar panels prior to occupancy.

Water Conservation and Efficiency

- Create water-efficient landscapes in compliance with the City's Water Efficient Landscape and Irrigation Ordinance 19.570.
- Surface parking lots will be landscaped in accordance with City standards to reduce heat island effect.
- Install water-efficient irrigation systems and devices, such as soil moisture based irrigation controls and sensors for landscaping according to the City's Water Efficient Landscape and Irrigation Ordinance 19.570.
- Design buildings to be water-efficient. Install water-efficient fixtures and appliances (e.g., EPA WaterSense labeled products).
- Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Provide education about water conservation and available programs and incentives to the building operators to distribute to employees.

Solid Waste Measures

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).

- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.
- The property operator will provide readily available information provided by the City for employee education about reducing waste and available recycling services.

The Project's energy and water conservation standards will meet the California Green Building Standards Code (Part 11 of Title 24, California Code of Regulations), EPA Energy Policy Act of 2005 and Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management) requirements.

Finally, as discussed in Section 8, Design Guidelines, of the Canyon Springs Healthcare Campus Specific Plan, in an effort to become a more sustainable hospital campus, the Project will include the following sustainable features:

- New buildings must meet the California Green Building Standards Code and the minimum standard for certification under the Leadership in Energy and Environmental Design (LEED) rating system for New Commercial Construction, Healthcare, and Major Renovations, as established by the U.S. Green Building Council, or an equivalent standard. Official certification for individual buildings is strongly encouraged, but not required.
- Other LEED rating systems or equivalent rating systems are encouraged for specific purposes when applicable, such as the LEED rating system for Multiple Buildings/Campuses.

4.2.5 Impact Analysis

Threshold AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

As previously discussed, the Project site is located within SCAB under the jurisdiction of the SCAQMD, which is the local agency responsible for administration and enforcement of air quality regulations for the area. The SCAQMD has established criteria for determining consistency with the 2016 AQMP in Chapter 12, Sections 12.2 and 12.3 of the SCAQMD *CEQA Air Quality Handbook* (SCAQMD 1993). The criteria are:

- **Consistency Criterion No. 1**: The Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP.
- **Consistency Criterion No. 2**: The Project will not exceed the assumptions in the AQMP or increments based on the year of Project buildout and phase.

Consistency Criterion No. 1

As discussed under Threshold AQ-2 below, the Project will result in a significant and unavoidable impact associated with the violation of an air quality standard. Because the Project could result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, the Project will conflict with Consistency Criterion No. 1 of the SCAQMD *CEQA Air Quality Handbook*. Construction of the Project will result in a potentially significant impact to air quality related to NO_x only. Mitigation measure **MM-AQ-1** (see Section 4.2.6, Mitigation Measures) shall be incorporated during Project construction to reduce NO_x emissions to a less than significant level. Project emissions will exceed the SCAQMD operational thresholds for VOC, NO_x, and CO. Mitigation measures **MM-AQ-2** through **MM-AQ-6** will reduce on-road mobile source emissions, but not to a level of less than significant.

Consistency Criterion No. 2

While striving to achieve the NAAQS for O_3 and $PM_{2.5}$ through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in SCAB. Projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD *CEQA Air Quality Handbook*). The future emissions forecasts incorporated in the 2016 AQMP, primarily based on demographic and economic growth projections provided by SCAG for their 2016 RTP/SCS, were used to estimate future emissions in the 2016 AQMP (SCAQMD 2017), which is generally consistent with the local plans (i.e., General Plans and Specific Plans); therefore, the AQMP is also generally consistent with local plans.

The previously approved *Canyon Springs Business Park Specific Plan* (CSBPSP) is consistent with all planning documents, including the RTP/SCS and AQMP. The Project is located within the CSBPSP and primarily consists of land uses permitted by the CSBPSP, including medical office buildings. The hospital and residential uses (i.e., senior housing and the independent living/memory care, assisted living, and skilled nursing facility) to be developed under the Project are not permitted uses within the CSBPSP. The overall Project goal is to guide future development on the Canyon Springs Healthcare Campus and define the extent, scale, and location of future development on the Project site. Therefore, in order to implement the goals of the Project, an amendment to the existing CSBPSP (to remove the Project) and adoption of the new *Canyon Springs Healthcare Campus Specific Plan* (to include the Project) are proposed to streamline future development by establishing future allowable uses and a cohesive set of design guidelines that will provide a clear understanding of how growth and development will occur on the Project site. The development of hospital and residential uses on the Project site would not result in more intense uses, in terms of regional transportation planning, than the commercial

retail and office uses that would have been permitted on those sites under the CSBPSP. Accordingly, the Project will be consistent with the growth assumptions in the RTP/SCS and the AQMP, and is therefore, consistent with the second criterion.

Summary

As described above, although the Project will be consistent with the growth assumptions in the underlying regional plans used to develop the AQMP (Consistency Criterion No. 2), the Project could result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, and would conflict with Consistency Criterion No. 1. Therefore, impacts related to the Project's potential to conflict with or obstruct implementation of the applicable air quality plan will be **significant and unavoidable**, and a Statement of Overriding Considerations will be required should the City choose to approve the Project. No mitigation has been identified that would reduce emissions and bring the Project into consistency with the applicable SCAQMD AQMP.

Threshold AQ-2: Would the project violate any air quality standard or contribute substantially to an existing air quality violation?

Construction and operation of the Project may result in emissions of criteria air pollutants from mobile, area, energy, and/or stationary sources, which may cause exceedances of federal and state ambient air quality standards or contribute to existing nonattainment of ambient air quality standards. The following discussion identifies potential short-term construction impacts and operational impacts that will result from implementation of the Project.

Construction Emissions

Construction of the Project will result in the addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

Pollutant emissions associated with construction activity were quantified using CalEEMod. Construction emissions were calculated for the estimated maximum day over the construction period and reported as the maximum daily emissions estimated during each year of construction (2015 through 2016). All five phases of Project land use development were assumed to be constructed concurrently. Within this concurrent land use development schedule, the construction activities that were assumed to overlap are architectural coating applications concurrently with part

of the building construction activities and finish grading activities. Notably, the construction schedule utilized for the analysis represents a "worst-case" scenario since if actual construction occurs after the dates assumed, emission factors for equipment and on-road vehicles decrease as the analysis year increases. Construction schedule assumptions, including activity type, duration, and sequencing, were based on information provided by the applicant and are intended to represent a reasonable scenario based on the best information available. Default values provided in CalEEMod were used where detailed Project information was not available.

For purposes of estimating Project construction emissions, the analysis contained herein is based on the following assumptions per Appendix H (duration of activities is approximate):

- Rough grading – 40 working days
- Building construction – 300 working days
- Architectural coatings – 300 working days
- Finish grading – 20 working days
- Paving – 30 working days

The construction equipment mix and estimated hours of operation per day for the criteria air pollutant emissions modeling are based on consultation with the applicant and are presented in Table 4.2-5. Construction emissions for construction worker vehicles and vendor trucks (e.g., delivery trucks) traveling to and from the Project site were based on CalEEMod default values. Detailed construction scenario assumptions and CalEEMod output sheets are included in Appendix H.

Table 4.2-5
Construction Scenario Assumptions

Construction Phase	Equipment		
	Type	*Quantity*	*Hours/Day*
Rough Grading	Water Trucks	2	8
	Blades	2	8
	Rubber-Tired Dozers	1	8
	Rubber-Tired Loaders	1	8
	Scrapers	5	8
	Tractor Dozer	1	8
Building Construction	Cranes	1	8
	Forklifts	3	8
	Generator Sets	1	8
	Tractors/Loaders/Backhoes	3	8
	Welders	1	8

Table 4.2-5
Construction Scenario Assumptions

Construction Phase	Equipment		
	Type	*Quantity*	*Hours/Day*
Architectural Coating	Air Compressors	1	8
Finish Grading	Excavators	2	8
	Graders	1	8
	Water Trucks	1	8
	Rubber-Tired Dozers	1	8
	Scrapers	2	8
	Tractors/Loaders/Backhoes	2	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8

Source: Appendix H.

Implementation of the Project will generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and pavement application. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The Project will be required to comply with SCAQMD Rule 403 to control dust emissions generated during the building construction and grading activities. Internal combustion engines used by construction equipment, haul trucks, vendor trucks, and worker vehicles will result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application/interior paint and other finishes, and application of asphalt pavement would also produce VOC emissions; however, the contractor is required to procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings).

Table 4.2-6, Estimated Unmitigated Maximum Daily Construction Emissions, presents the estimated maximum unmitigated daily construction criteria air pollutant emissions generated during construction of the Project in each year. The values shown are the maximum summer or winter daily emissions (i.e., worst-case) results from CalEEMod and take credit for reductions achieved through standard regulatory requirements (SCAQMD Rule 403 and Rule 1113). As depicted in Table 4.2-6, unmitigated construction of the Project would exceed the SCAQMD NO_x threshold of significance of 100 pounds per day. Details of the emission calculations are provided in Appendix H.

Table 4.2-6
Estimated Unmitigated Maximum Daily Construction Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Year 2015	70.26	151.05	149.24	0.28	19.37	9.96
Year 2016	69.39	87.35	137.87	0.28	19.07	8.18
Maximum daily emissions	**70.26**	**151.05**	**149.24**	**0.28**	**19.37**	**9.96**
SCAQMD pollutant threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold exceeded?	**No**	**Yes**	**No**	**No**	**No**	**No**

Source: See Appendix H for complete results.
Notes: The values shown are the maximum summer or winter daily emissions results from CalEEMod.
These estimates reflect compliance with SCAQMD Rule 403 and Rule 1113.
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

The estimated maximum daily construction emissions with incorporation of mitigation measure **MM-AQ-1** are shown in Table 4.2-7.

Table 4.2-7
Estimated Mitigated Maximum Daily Construction Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Year 2015	70.11	86.22	149.17	0.28	19.07	7.12
Year 2016	68.81	65.46	137.89	0.28	18.79	6.85
Maximum daily emissions	**70.11**	**86.22**	**149.17**	**0.28**	**19.07**	**7.12**
SCAQMD pollutant threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: See Appendix H for complete results.
Notes: The values shown are the maximum summer or winter daily emissions results from CalEEMod.
These estimates reflect compliance with SCAQMD Rule 403 and Rule 1113, as well as implementation of MM-AQ-1.
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

As shown in Table 4.2-7, daily construction emissions would not exceed the SCAQMD significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ during construction with the incorporation of mitigation. Furthermore, construction-generated emissions would be temporary and would not represent a long-term source of criteria air pollutant emissions. With implementation of **MM-AQ-1**, construction of the Project will not violate any air quality standard or contribute substantially to an existing air quality violation, and impacts would be **less than significant with mitigation incorporated.**

Operational Emissions

Following the completion of construction activities, the Project will generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, area sources, energy sources, helicopters, and stationary sources, including natural gas powered boilers with an estimated annual energy usage of 50,000,000 kilo British thermal units.

CalEEMod was used to estimate maximum daily mobile source emissions associated with Project vehicle trips based on trip-generation rates from the Traffic Impact Analysis (Appendix L). CalEEMod was also used to estimate emissions from the Project's area sources, which include consumer products, gas-powered landscape maintenance, and architectural coatings for maintenance of the buildings. The Project is required to comply with SCAQMD Rule 445, which prohibits the use of wood burning stoves and fireplaces in new development. Criteria pollutant emissions from energy sources (building energy consumption), which include natural gas appliances and space and water heating, were also estimated using CalEEMod. Combustion of natural gas for the large boilers of the Project was estimated outside of CalEEMod using a natural gas combustion emission factors, which is detailed in Appendix H.

Additionally, the Project will result in helicopter activity for typical hospital operations and for trauma events. Air quality emissions associated with helicopter use at the Project site would result from landing and takeoff and travel during the helicopter routes. Emissions rates for helicopter emissions were obtained from the *Guidance on the Determination of Helicopter Emissions* (Swiss Federation 2015). Additional detailed calculations for helicopter emissions are provided in Appendix H.

Estimated unmitigated maximum daily operation emissions of the Project are shown in Table 4.2-8. As shown in Table 4.2-8, the combined maximum daily area, energy, stationary, helicopter, and mobile source emissions would exceed the SCAQMD regional operational thresholds for VOC, NO_x, and CO without mitigation. Notably, since the Project site is currently vacant and undeveloped, there are no existing sources of air pollutant emissions.

Table 4.2-8
Estimated Unmitigated Maximum Daily Operational Emissions

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Area	60.08	0.49	42.34	0.00	0.90	0.89
Energy	1.19	10.72	8.29	0.07	0.82	0.82
Mobile	69.75	188.94	746.08	1.72	117.03	32.96
Stationary	0.72	6.72	11.28	0.00	0.96	0.96

Table 4.2-8
Estimated Unmitigated Maximum Daily Operational Emissions

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Helicopters	7.88	19.98	9.74	0.00	0.56	0.56
Combined total emissions	**139.62**	**226.85**	**817.73**	**1.79**	**120.27**	**36.19**
SCAQMD pollutant threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold exceeded?	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**

Source: See Appendix H for detailed results.
Note: The values shown are the maximum summer or winter daily emissions results from CalEEMod. Emission factors for helicopter emissions are not based on season. Total emissions may not equal sum of the individual sources due to rounding.
Area sources = hearths, consumer product use, architectural coatings, and landscape maintenance equipment. Energy sources = natural gas. Mobile sources = motor vehicles. Stationary sources = natural gas boilers.
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

Estimated mitigated maximum daily operation emissions of the Project are shown in Table 4.2-9.

Table 4.2-9
Estimated Mitigated Maximum Daily Operational Emissions

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Area	60.08	0.38	32.02	0.00	0.84	0.83
Energy	1.08	9.76	7.54	0.06	0.75	0.75
Mobile	65.20	152.86	622.12	1.34	90.78	25.59
Stationary	0.72	6.72	11.28	0.00	0.96	0.96
Helicopters	7.88	19.98	9.74	0.00	0.56	0.56
Combined total emissions	**134.96**	**189.7**	**682.7**	**1.4**	**93.89**	**28.69**
SCAQMD pollutant threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold exceeded?	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**

Source: See Appendix H for detailed results.
Note: The values shown are the maximum summer or winter daily emissions results from CalEEMod and include implementation of MM-AQ-2 through MM-AQ-6. Emission factors for helicopter emissions are not based on season.
Area sources = hearths, consumer product use, architectural coatings, and landscape maintenance equipment. Energy sources = natural gas. Mobile sources = motor vehicles. Stationary sources = natural gas boilers.
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

As shown in Table 4.2-9, the combined maximum daily area, energy, mobile, helicopter, and stationary source emissions will exceed the SCAQMD regional operational thresholds for VOC, NO_x, and CO even after implementation of **MM-AQ-2** through **MM-AQ-6**. Therefore, Project operational-source VOCs, NO_x, and CO emissions exceedances of applicable SCAQMD regional

thresholds are therefore considered **significant and unavoidable**, and a Statement of Overriding Considerations will be required should the City choose to approve the Project.

Threshold AQ-3: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

In considering cumulative impacts from a project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which SCAB is designated as nonattainment for the CAAQS and NAAQS. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in SCAB. If a project does not exceed thresholds and is determined to have less than significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality. The basis for analyzing the Project's cumulative considerable contribution is if the Project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact) as well as consistency with the SCAQMD 2016 AQMP, which addresses the cumulative emissions in SCAB.

As presented in Table 4.2-2, SCAB Attainment Classification, SCAB has been designated as federal nonattainment area for O_3 and $PM_{2.5}$ and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of these air pollutants and their precursors within SCAB including motor vehicles, off-road equipment, commercial, and industrial facilities. Construction and operation of the Project would generate VOC and NOx emissions (which are precursors to O_3), and emissions of PM_{10} and $PM_{2.5}$.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the Project site (listed in Appendix H) are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative. However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation if the project would exceed SCAQMD thresholds. The State CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This analysis is nonetheless provided in an effort to show good faith analysis and comply with CEQA's information disclosure requirements. Air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be

subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD.

As indicated in Table 4.2-7, Estimated Mitigated Maximum Daily Construction Emissions, Project-generated construction emissions (after mitigation) will not exceed the SCAQMD emission-based significance thresholds for VOC, NOx, CO, SOx, PM_{10}, or $PM_{2.5}$. In addition, operational emissions generated by the Project will not result in a significant impact regarding SO_x, PM_{10}, and $PM_{2.5}$; however, Project emissions would exceed the SCAQMD operational thresholds for VOC and NO_x (precursors to O_3), and CO. As depicted in Table 4.2-9, **MM-AQ-2** through **MM-AQ-6** will reduce Project-generated operational emissions; however, not to level of less than significant. As described above, if a project's emissions exceed the SCAQMD significance thresholds for a pollutant or a precursor to a pollutant SCAB is in nonattainment of under the CAAQS and/or NAAQS, it would have a cumulatively considerable contribution to SCAB's nonattainment status of that pollutant. Accordingly, operation of the Project could result in a cumulatively considerable increase in emissions of VOC and NO_x, which are precursors to O_3. Thus, this impact will be **significant and unavoidable**, and a Statement of Overriding Considerations will be required should the City choose to approve the Project.

Threshold AQ-4: Would the project expose sensitive receptors to substantial pollutant concentrations?

Localized Significance Thresholds Analysis

As described in Appendix H, SCREEN3 was used to calculate localized pollutant concentrations for construction and operational activity. For purposes of this analysis, receptors were conservatively assumed to be located at about 25 meters (82 feet) south of the Project boundary for emissions of CO, PM_{10}, and $PM_{2.5}$. For emissions of NO_2, discrete receptors were placed at 20, 50, 70, 100, 200, 500, 1,000, 2,000, 3,000, 4,000, and 5,000 meters from the fence line of the Project site to account for the change in NO_x to NO_2 conversion as a function of distance.

Construction. For construction, an area source encompassing approximately 6 acres was modeled. The urban option of the model was selected, and receptor height was conservatively set at 2 meters, consistent with SCAQMD methodology (SCAQMD 2008). For PM_{10} and $PM_{2.5}$ a source release height of 1 meters was utilized consistent with SCAQMD methodology. Additionally, for emissions of NO_x and CO released during construction activity, consistent with SCAQMD methodology, a source release height of 5 meters was utilized. The maximum criteria air pollutant concentrations would occur during the rough grading phase, with unmitigated emissions depicted in Table 4.2-10. These emission concentrations are representative of the nearest sensitive receptor location in the vicinity of the Project site with no mitigation measures applied.

Table 4.2-10
Localized Significance Thresholds Analysis for Unmitigated Project Construction

	CO		NO_2	PM_{10}	$PM_{2.5}$
	Averaging Time				
Rough Grading Phase	*1-hour*	*8-hour*	*1-hour*	*24-hour*	*24-hour*
Peak Day Localized Emissions	0.46	0.33	0.02	8.55	4.73
Background Concentration[a]	4.50	1.60	0.06	--	--
Total Concentration	**4.96**	**1.93**	**0.08**	**8.55**	**4.73**
SCAQMD LST	*20*	*9*	*0.18*	*10.4*	*10.4*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**

Source: See Appendix H for detailed results.
Notes: PM_{10} and $PM_{2.5}$ concentrations are in $\mu g/m^3$, all others in parts per million (ppm).
[a] Highest concentration from the last three years of available data included in Table 4.2-3.
LST = localized significance threshold; NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = particulate matter; $PM_{2.5}$ = fine particulate matter

As shown in Table 4.2-10, construction activities will not generate emissions in excess of any SCAQMD LSTs. This impact would be **less than significant**. In addition, **MM-AQ-1** would be required during construction to reduce regional emissions and will also reduce localized emissions. Mitigated construction LST comparisons are included in Appendix H.

Operations. For operational LSTs, on-site passenger car and truck travel emissions were modeled using emission factors for CO, NO_2, PM_{10}, and $PM_{2.5}$ generated with the 2014 version of the Emission FACtor (EMFAC) mobile source emissions inventory model developed by CARB. Project criteria pollutant emission factors were generated by running EMFAC 2014 in EMFAC Mode for vehicles in the SCAQMD district. The EMFAC Mode generates emission factors in terms of grams of pollutant emitted per vehicle activity and can calculate a matrix of emission factors at specific values of temperature, relative humidity, and vehicle speed. For this analysis, it was assumed that 15 minutes of idling would occur for passenger cars and trucks, as well as a speed of 5 miles per hour for on-site vehicle movement.

The maximum criteria air pollutant concentrations during operations are depicted in Table 4.2-11. These emission concentrations are representative of the nearest sensitive receptor location in the vicinity of the Project site with no mitigation measures applied.

Table 4.2-11
Localized Significance Thresholds Analysis for Unmitigated Project Operations

	CO		NO_2	PM_{10}	$PM_{2.5}$
	Averaging Time				
Rough Grading Phase	*1-hour*	*8-hour*	*1-hour*	*24-hour*	*24-hour*
Peak Day Localized Emissions	0.05	0.03	0.00	0.10	0.10
Background Concentration[a]	4.50	1.60	0.06	--	--
Total Concentration	**4.55**	**1.63**	**0.06**	**0.10**	**0.10**
SCAQMD LST	*20*	*9*	*0.18*	*2.5*	*2.5*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**

Source: See Appendix H for detailed results.
Notes: PM_{10} and $PM_{2.5}$ concentrations are in $\mu g/m^3$, all others in parts per million (ppm).
[a] Highest concentration from the last three years of available data included in Table 4.2-3.
LST = localized significance threshold; NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = particulate matter; $PM_{2.5}$ = fine particulate matter

As shown in Table 4.2-11, unmitigated on-site operations will not generate emissions in excess of any SCAQMD LSTs. This impact will be **less than significant**. Because unmitigated operational emissions did not exceed the LSTs, a mitigated LST analysis was not conducted.

CO Hotspots

Mobile source impacts occur on two scales of motion. Regionally, Project-related travel would add to regional trip generation and increase the vehicle miles traveled within the local airshed and SCAB. Locally, Project traffic would be added to the City of Riverside roadway system near the Project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and is operating on roadways already crowded with non-Project traffic, there is a potential for the formation of microscale CO "hotspots" in the area immediately around points of congested traffic. With the turnover of older vehicles and introduction of cleaner fuels, CO concentrations in SCAB have steadily declined.

Based on the analysis presented in Appendix H and summarized below, a CO hotspots analysis was not needed to determine whether the change in the level of service of an intersection by the Project would have the potential to result in exceedances of the CAAQS or NAAQS. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in Appendix H, peak CO concentrations in SCAB are due to unusual meteorological and topographical considerations, and not due to the impact of particular intersections. Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of the 1992 CO Plan and subsequent plan updates and AQMPs.

Appendix H includes a comparison of CO hotspot analysis included in the 1992 CO Plan, which assessed CO concentrations for four busy intersections in Los Angeles at the peak morning and afternoon time periods, to intersections affected by Project traffic volumes. The busiest intersection evaluated in the 1992 CO Plan was Wilshire Boulevard/Veteran Avenue, in the City of Los Angeles, which had a daily traffic volume of about 100,000 vehicles per day and did not result in a CO standard violation. The 2003 AQMP estimated that the 1-hour concentration for this intersection was 4.6 ppm, which indicates that the most stringent 1-hour CO standard (20.0 ppm) would likely not be exceeded until the daily traffic at the intersection exceeded more than 400,000 vehicles per day, based on the ratio of the CO standard (20.0 ppm) and the modeled value (4.6 ppm). At buildout of the Project, the highest average daily trips on a segment of road would be 54,000 daily trips on Eucalyptus Avenue, east of Interstate 215, which is below the daily traffic volumes that would be expected to generate CO exceedances as evaluated in the 2003 AQMP. There is no reason unique to SCAB meteorology to conclude that the CO concentrations along the Eucalyptus Avenue segment would exceed the 1-hour CO standard if modeled in detail, based on the studies undertaken for the 2003 AQMP. Based on the above considerations, localized CO impacts will be **less than significant**.

Health Risk Assessment

Urban Crossroads developed an HRA in order to evaluate Project-related impacts to sensitive receptors (residential, schools) and adjacent workers as a result of exposure to DPM from heavy-duty diesel trucks accessing the Project site, routine emergency diesel generator testing, and from exposure to TACs from the combustion of helicopter fuel (Appendix H). The estimated annual average ambient TAC concentrations at the nearest sensitive receptors were determined using the American Meteorological Society/EPA Regulatory Model (AERMOD) air quality dispersion model; local meteorological data obtained from the SCAQMD; and the estimated DPM emissions associated with on-site heavy duty truck idling, on-site circulation of heavy duty trucks, the operation of on-site equipment (i.e., emergency diesel generators), the amount of helicopter fuel used during land and take off and a 1-hour flight, and heavy truck circulation along off-site roadways used to access the Project site. For a detailed description of emissions calculations and methodologies, the HRA report for trucks and generators, as well as the separate helicopter HRA memo, are included in Appendix H.

Cancer risk is defined as the increase in probability (chance) of an individual developing cancer due to exposure to a carcinogenic compound, typically expressed as the increased chances in one million. The SCAQMD has established that emissions of TACs are considered significant if an HRA shows an increased risk of greater than 10 in 1 million (SCAQMD 2015). The SCAQMD has also established noncarcinogenic risk parameters for use in HRAs. Noncarcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level. A Reference Exposure Level is a

concentration at or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected. Within this analysis, noncarcinogenic exposures of less than 1.0 are considered less than significant.

Three types of receptors were evaluated in the HRA: residential, worker, and school. The residential land use with the greatest potential exposure to Project TAC emissions is located immediately adjacent, to the south of the Project site along Eucalyptus Avenue. The nonresidential receptors with the greatest potential exposure to Project TAC emissions include workers on the Project site and teachers and school children at Edgemont Elementary School, south of the Project site along Eucalyptus Avenue. The potential cancer and noncancer health risks to these residential and nonresidential receptors is depicted in Table 4.2-12.

Table 4.2-12
Project Health Risk Summary

Receptor	Cancer Risk (as in 1 million)	SCAQMD Cancer Risk Threshold	Exceed Threshold?	Noncancer Risk	SCAQMD Noncancer Risk Threshold	Exceed Threshold?
Residential	3.55	10	No	0.002	1	No
Worker	0.60	10	No	0.002	1	No
School Child	0.40	10	No	0.002	1	No

Source: See Appendix H for detailed results. Notably, the risk values depicted are the summation of the diesel trucks and emergency generators, plus the helicopter sources, which were assessed in separate reports.

As shown in Table 4.2-12, the incremental cancer risk at the nearby maximally exposed residential, worker, and school child receptors would be approximately 3.6, 0.6, and 0.4 in one million, respectively, which would not exceed the SCAQMD threshold of 10 in 1 million; therefore, impacts will be **less than significant**. The incremental noncancer risk at the nearby maximally exposed residential, worker, and school child receptors would each be approximately 0.002 in 1 million, which would not exceed the SCAQMD threshold of 1.0 in 1 million; therefore, impacts will be **less than significant**.

4.2.6 Mitigation Measures

MM-AQ-1 During construction activity, all construction equipment (≥ 150 horsepower) shall be California Air Resources Board (CARB) Tier 3 Certified or better. Additionally, during grading activity, total horsepower-hours per day for all equipment shall not exceed 24,608 horsepower-hours per day, and the maximum disturbance (actively graded) area shall not exceed 6 acres per day.

MM-AQ-2 Prior to the issuance of building permits, the Project developer/applicant shall submit energy usage calculations to the Planning Division showing that the

Project is designed to achieve 5% efficiency beyond the 2016 California Building Code Title 24 requirements. Example of measures that reduce energy consumption include, but are not limited to, the following (it being understood that the items listed below are not all required and merely present examples; the list is not all-inclusive and other features that reduce energy consumption also are acceptable):

- Increase in insulation such that heat transfer and thermal bridging is minimized;
- Limit air leakage through the structure and/or within the heating and cooling distribution system;
- Use of energy-efficient space heating and cooling equipment;
- Installation of electrical hook-ups at loading dock areas;
- Installation of dual-paned or other energy-efficient windows;
- Use of interior and exterior energy-efficient lighting that exceeds then incumbent California Title 24 Energy Efficiency performance standards;
- Installation of automatic devices to turn off lights where they are not needed;
- Application of a paint and surface color palette that emphasizes light and off-white colors that reflect heat away from buildings;
- Design of buildings with "cool roofs" using products certified by the Cool Roof Rating Council, and/or exposed roof surfaces using light and off-white colors;
- Design of buildings to accommodate photo-voltaic solar electricity systems or the installation of photo-voltaic solar electricity systems;
- Installation of Energy Star-qualified energy-efficient appliances, heating and cooling systems, office equipment, and/or lighting products.

MM-AQ-3 To reduce water consumption and the associated energy-usage, the Project shall be designed to comply with the mandatory reductions in indoor water usage contained in the incumbent California Green Building Code and any mandated reduction in outdoor water usage contained in the City's water-efficient landscape requirements. Additionally, the Project shall implement the following:

- Landscaping palette emphasizing drought-tolerant plants;
- Use of water-efficient irrigation techniques;
- U.S. Environmental Protection Agency (EPA) Certified WaterSense labeled or equivalent faucets, high-efficiency toilets, and water-conserving shower heads.

MM-AQ-4 The Project shall reduce vehicle miles traveled and emissions by implementing the following measure:

- Pedestrian and bicycle connections shall be provided to surrounding areas consistent with the City's General Plan.

MM-AQ-5 The Project developer/applicant shall encourage its tenants to use water-based or low volatile organic compound cleaning products by providing publicly available information from the Southern California Air Quality Management District, CARB, and EPA on such cleaning products.

MM-AQ-6 Electric lawn equipment including but not limited to lawn mowers, leaf blowers and vacuums, shredders shall be used in lieu of conventional gas-powered equipment. This requirement shall be included in all Covenants, Conditions, and Restrictions for Project properties.

4.2.7 Environmental Impacts After Mitigation Is Incorporated

The analysis above concludes that the daily construction emissions will not exceed the SCAQMD's significance thresholds for VOC, CO, SO_x, PM_{10}, or $PM_{2.5}$ during construction of the Project in any of the construction years. The Project, however, will exceed the daily construction emissions threshold for NO_x. With implementation of **MM-AQ-1**, which requires improved off-road equipment engines, NO_x emissions will be reduced below the SCAQMD significance threshold, thus resulting in a **less than significant** air quality impact from construction emissions.

The Project's operational emissions will not exceed the SCAQMD's significance threshold for SO_x, PM_{10}, or $PM_{2.5}$. The Project, however, will exceed operational emissions thresholds for VOC, NO_x, and CO, even with implementation of **MM-AQ-2** through **MM-AQ-6**, and therefore, Project operational emissions will remain **significant and unavoidable**, and a Statement of Overriding Considerations will be required should the City choose to approve the Project.

The LST analysis shows that the Project construction and operational emissions will not exceed the applicable LSTs for NO_2, CO, PM_{10}, or $PM_{2.5}$. This impact will be **less than significant**.

The Project will not result in on-road traffic volumes at affected intersections that would result in a CO hotspot. This impact will be **less than significant**.

The cancer risk and noncancer risk at the nearby residents, workers, and school children will not exceed the SCAQMD threshold of 10 in 1 million or chronic HI of 1.0, respectively, and impacts will be **less than significant**; therefore, no mitigation is required.

In summary, the Project will result in **significant and unavoidable impacts** related to an obstruction of the implementation of the applicable air quality plan and long-term operational impacts. As a result, the Project will also result in cumulatively considerable impacts. Because of these impacts, a Statement of Overriding Considerations is required.

4.2.8 References

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4.3 BIOLOGICAL RESOURCES

The focus of the following discussion and analysis is based on the Initial Study (IS) and Notice of Preparation (NOP) (Appendix A) and comments received during the NOP public comment period. This section:

- Describes the existing biological setting
- Identifies associated regulatory requirements
- Evaluates potential adverse impacts related to biological resources
- Identifies mitigation measures related to implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project)

The focus of the following analysis per the IS/NOP (Appendix A) is related to federally protected wetlands as defined by Section 404 of the Clean Water Act and potential conflicts with the provisions of an approved local, regional, or state conservation plan. The IS concluded that potential impacts related to candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS), riparian habitat, movement of any native resident or migratory fish or wildlife species, and conflict with a tree preservation policy are either less than significant or have no impact, and are therefore not discussed further in this Draft Environmental Impact Report (EIR).

4.3.1 Setting

The 50.85-acre Project site consists of three separate, non-contiguous, previously graded areas located within the Canyon Springs Business Park Specific Plan area in the City of Riverside (City), California, with the Box Springs Mountains to the north, Olive Hill to the northeast, Perris Reservoir to the southeast, March Airforce Base to the south, and Sycamore Canyon Wilderness Park to the west. For purposes of this analysis, the term "Project site" refers to the entire three, separate, non-contiguous areas.

The Project site is generally surrounded by existing urban developed land uses. Land uses immediately adjacent to the Project site include medical office buildings (MOBs), office buildings, governmental offices, single-family residences, a school, and vacant, undeveloped parcels. Land uses north of the overall Project site (north of Corporate Centre Place and Campus Parkway) include big box retail (e.g., Walmart, Target, PetSmart) and other commercial retail uses; land uses west of the overall Project site (west of Valley Springs Parkway) include a big box retail (Sam's Club) and a bank; land uses south of the overall Project site (south of Eucalyptus Avenue) include a mix of residential development, commercial uses, and vacant

parcels; and land uses east of the overall Project site (east of Day Street) include big box retail (e.g., Costco, WinCo Foods) and commercial retail uses.

The City, which includes the Project site, is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) area. The City is a Permittee to the MSHCP; thus, the Project is required to comply with applicable provisions of the MSHCP (City of Riverside 2007a). The Project site is located within the Cities of Riverside/Norco Area Plan of the Riverside County MSHCP. However, the Project site is not within any MSHCP criteria cells or existing conservation area (see Appendix F, Figure 3). Therefore, no reserve assembly requirements will apply to the Project site. The MSHCP is discussed in greater detail below.

Existing Conditions

The Project site is relatively flat, with an elevation of approximately 1,550 feet to 1,570 feet above mean sea level. The Project site is disturbed with evidence of recent disking throughout. A review of historical aerial photographs suggests that this disking has regularly occurred on the Project site since at least 2002 (Google Earth 2015), and there is evidence that the Project site was severely disturbed as far back as 1948 (historicaerials.com 2015).

Existing On-Site Soils

The Riverside County MSHCP has a list of sensitive soils that are known to be associated with listed and sensitive plant species in the region. However, there are no MSHCP defined sensitive soils on the Project site. The following soils are mapped within the Project site: Cieneba rocky sandy loam, Monserate sandy loam, and Hanford coarse sandy loam (see Appendix F, Figure 4). Descriptions provided below are summarized from the Natural Resources Conservation Service (NRCS 2015).

Cieneba series consists of very shallow and shallow, somewhat excessively drained soils that formed in material weathered from granitic rock. Vegetation is mainly chaparral and chemise with small areas of thin annual grasses and weeds. This series is slightly or medium acidic with less than 18% clay throughout the profile.

Hanford series consists of very deep and well-drained soils that formed in moderately coarse textured alluvium. Soils were formed dominantly from granite and usually found on stream bottoms, floodplains and alluvium fans. Slopes containing these soils range from 0%–15%. Vegetation in uncultivated areas is mainly grasses and associated herbaceous plants.

Monserate series are moderately well-drained soils that formed in alluvium derived from granitic rocks. They occur on terraces and fans at elevations from 700 feet to 2,500 feet above mean sea level. Monserate soils are considered fine-loamy, mixed, super active,

thermic Typic Durixeralfs. They have slow to rapid runoff and a moderately slow permeability. Uncultivated areas contain annual grasses, forbs, native canyon oak, and shrubs on eroded slopes.

Vegetation

Exotic plant species occur throughout the Project site, but exposed, loose soil caused by disking is the primary land cover. Ornamental plants and landscaped lawns border the perimeter of each section of the Project site. Three vegetation communities were mapped within the Project survey area: tamarisk alliance, California annual grassland, and disturbed/developed. The vegetation communities are depicted on Figure 5 of the Project's Biological Report (Appendix F) and described in the following discussion.

Tamarisk Alliance

According to California Native Plant Society (CNPS) 2006, Tamarisk alliance (*Tamarix* sp.) contains stands of Tamarix species in a shrubland form where Tamarix species dominates. The herbaceous layer is open to intermittent at 0.2–2.0 meters tall. Within this alliance black willow (*Salix gooddingii*) may be regenerating in the shrub layer.[1]

On site, Tamarisk alliance vegetation communities contained shrubs and tree understory including Mediterranean tamarisk (*Tamarix ramosissima)*, athel tamarisk (*Tamarix aphylla*), black willow, and mulefat (*Baccharis salicifolia*). Herbaceous plants included compact brome (*Bromus madritensis*) and the common sunflower (*Helianthus annuus*).

California Annual Grassland

As defined by CNPS (2006), California annual grassland is usually dominated by annual grasses and herbs of various assortments that are in upland habitats. Specifically, red brome (*Bromus madritensis* ssp. *rubens*) or ripgut brome (*B. diandrus*) are abundant with other non-native and native species.

The majority of the Project site is California annual grassland. These areas showed evidence of recent disking had some identifiable annual weedy species present, including mustard species (*Brassica* sp.) and prickly Russian thistle (*Salsola tragus*).

Disturbed/Developed

The "Disturbed/Developed" vegetation community is not recognized within the MSHCP; however, it is recognized by Holland (1986). Developed land consists of structures, residences, paved roads, and

[1] The common name used in Appendix F is Goodding's willow. However, because CNPS (2006) uses the common name black willow, this common name is used in the description of the vegetation communities.

maintained areas. Developed areas do not support native vegetation. Disturbed habitat refers to areas that are not developed, but lack vegetation generally due to severe or repeated mechanical perturbation.

This community occurs around all California annual grassland vegetation within the Project site. Specifically, this community consists of roadways (both dirt and paved) and commercial buildings. Residential development occurs along the southern perimeter of the southern section of the Project site. Vegetation within the residential development includes a variety of ornamentals, such as Peruvian peppertree (*Schinus molle*) and Mexican palo verde (*Parkinsonia aculeata*).

Jurisdictional Resources

A delineation of jurisdictional waters, wetlands, and associated riparian habitat on the Project site was prepared for the Project (see Appendix E) to determine potential impacts from development of the site. The purpose of the delineation is to determine the extent of state and federal jurisdiction within the Project site potentially subject to regulation by the U.S. Army Corps of Engineers (ACOE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter-Cologne Water Quality Act, and CDFW under Section 1602 of the California Fish and Game Code.

In 1994, Site B appears to have consisted of vacant/undeveloped land that had been heavily disturbed with an unimproved dirt access road traversing the northern portion of Site B from northwest to southeast. This area appears to have consisted of a non-native grassland plant community that has been routinely disked and/or been subject to weed-abatement activities. Paved streets were installed around Site B and the surrounding area. Between 1994 and 2002, the commercial buildings that are currently found north of Site B were developed. Two office buildings and paved parking lots were installed. The aerials between 1994 and 2002 do not show any evidence of water flows across Site B.

In 2003, the conditions of Site B and the surrounding area remained the same. However, evidence of a drainage feature that traverses the middle of Site B appears on the aerials. Based on the aerial photographs, the drainage feature began at the edge of the pavement of the existing parking lot north of Site B and appears to have followed on-site topography to the south. There was an existing concrete inlet structure that collects water from Site B and its southern boundary and outlets into the street gutter, which eventually flowed into the City's underground storm drain system. No additional drainage features, ponds, or basins occurred on site. Between 2003 and 2016, the on-site drainage feature appears to have fluctuated between traversing the length of the site and stopping at the dirt access road approximately 253 feet south of the parking lot.

As shown in Figure 4.3-1, the jurisdictional delineation performed for the Project determined that the Project site contains one unnamed stream within the study area that flows through the

northeast section of Site B (Appendix E). Historically, this feature is mapped as originating from outside of the study area to the north within the foothills of the Box Springs Mountains within the City of Moreno Valley. The channel is mapped as continuing further to the south and then west through Sycamore Canyon Park into the Santa Ana River and ultimately flowing west until its terminus at the Pacific Ocean. Currently, Site B receives storm water flows from a storm drain that drains runoff from the parking lot directly adjacent to the north (Appendix E).

Table 4.3-1 provides a summary of jurisdictional areas within the Project site.

Table 4.3-1
Jurisdictional Area Summary

Jurisdictional Feature	U.S. Army Corps of Engineers/Regional Board Jurisdictional Non-Wetland Waters		California Department of Fish and Wildlife Jurisdictional Streambed	
	Acres	*Linear Feet*	*Acres*	*Linear Feet*
Drainage 1	0.02	253	0.12	253

Source: Appendix E

On-Site Drainage Features

As shown in Figure 4.3-1, at the southern end of the Project site, there is another storm drain leading to an underground pipeline, which was created to capture runoff from the site (Appendix F). An inline detention basin is located immediately to the south of the southeastern parcel, which is where water from the Project site ultimately drains. When flows in this basin overflow, a concrete outlet leads across Eucalyptus Avenue and eventually flows to what is known as Sycamore Canyon. Due to heavy recent disking, the ephemeral drainage on Site B is not definable. There is no evidence of bed and bank or ordinary high water mark (OHWM), defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area. No riparian vegetation is present. However, aerial imagery also shows that, at times, there is likely a definable bed and bank.

4.3.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

Federal Endangered Species Act

The federal Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) and subsequent amendments provide for the conservation of endangered and threatened species and the habitats on which they depend. A federally endangered species is one facing extinction throughout all or a significant

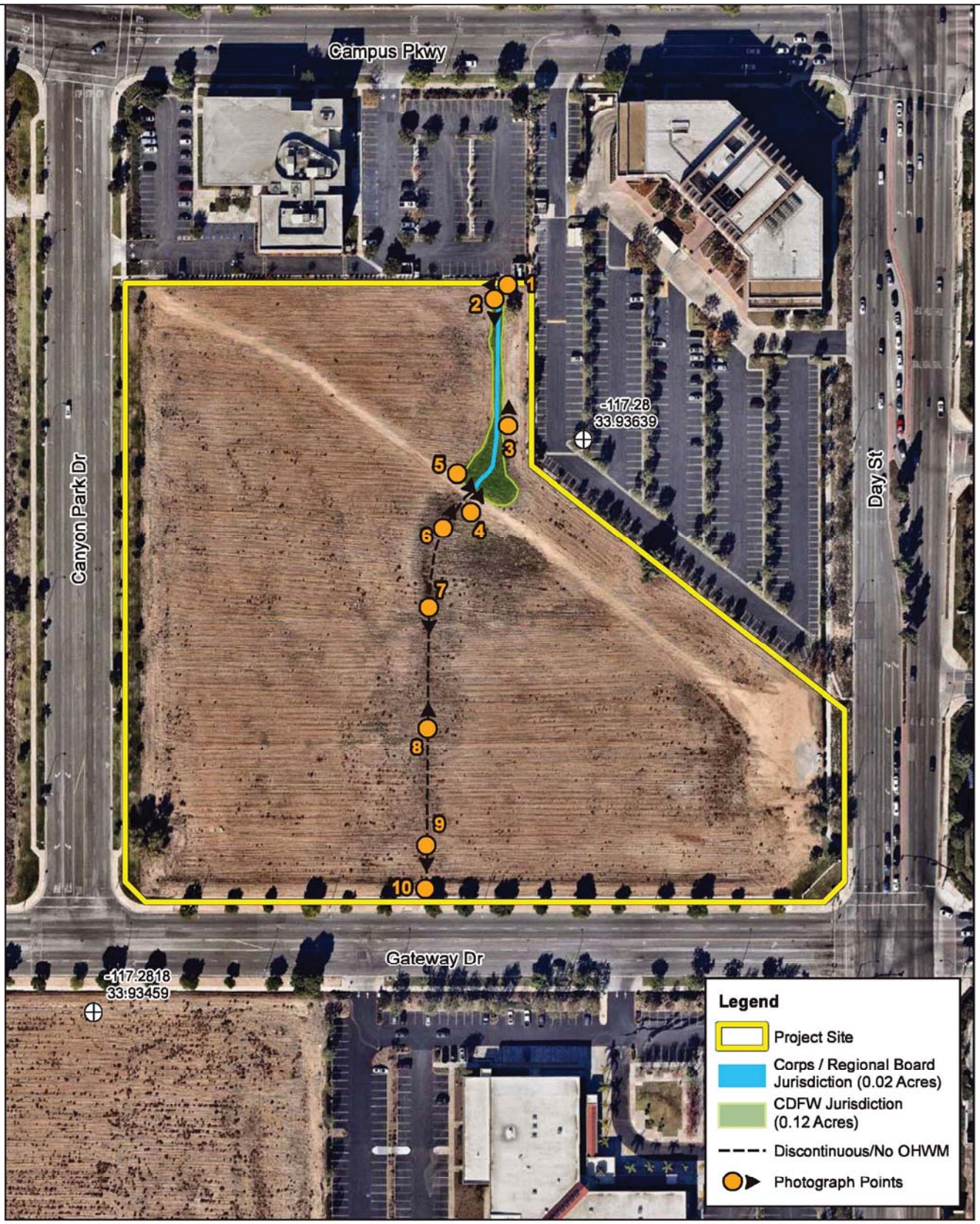
portion of its geographical range. A federally threatened species is one likely to become endangered within the foreseeable future throughout all or a significant portion of its range. The presence of any federally threatened or endangered species on a site generally imposes severe constraints on development, particularly if development would result in take of the species or its habitat. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct. Harm in this sense can include any disturbance to habitats used by the species during any portion of its life history. The Project will avoid known occurrences of listed plants and habitat for listed wildlife species or otherwise mitigate potential impacts to these species.

Migratory Bird Treaty Act

According to the Migratory Bird Treaty Act (MBTA), administered by the USFWS, the removal of active nests, eggs, or nestlings is unlawful. A violation of the MBTA may occur on, but is not limited to, projects that involve clearing or grubbing of migratory bird nest habitat during the nesting season, and demolition or reconstruction where bird nests are present. This time period is especially important due to the heightened presence of eggs or young that are essential to the survival of the species. The Project will comply with the MBTA and California Fish and Game Code by limiting the period in which construction will take place and recommending that a nesting bird survey be completed if habitat removal is proposed during the nesting season.

Clean Water Act Section 404 Permit

Since 1972, the ACOE and U.S. Environmental Protection Agency (EPA) have jointly regulated the discharge of dredge or fill material into waters of the United States, including wetlands, pursuant to Section 404 of the CWA. The ACOE and EPA define "fill material" to include any "material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States." Examples include sand, rock, clay, construction debris, wood chips, and "materials used to create any structure or infrastructure in the waters of the United States." The terms "waters of the United States" and "wetlands" are defined under CWA regulations at 33 Code of Federal Regulations (CFR) Section 328.3 (a) through (b). Further explanation of these terms is provided in Appendix E.



SOURCE: Bing Maps, 2016; City of Riverside, 2016

FIGURE 4.3-1

Jurisdictional Map: Site B

DUDEK

Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan

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In order to obtain a Section 404 permit, applicants must demonstrate that the discharge of dredged or fill materials would not significantly degrade the nation's waters and there are no practicable alternatives less damaging to the aquatic environment. Applicants are also required to describe steps taken to minimize impacts to water bodies and wetlands and provide appropriate and practicable mitigation, such as restoring or creating wetlands, for any remaining, unavoidable impacts. Permits will not be granted for proposals that are found to be contrary to the public interest. Compliance with the Endangered Species Act and/or Section 106 of the National Historic Preservation Act may also be required before a Section 404 permit can be issued.

State

California Endangered Species Act

It is the policy of the State of California to conserve, protect, restore, and enhance threatened or endangered species and their habitats (California Fish and Game Code, Section 2050 et seq.). The California Endangered Species Act mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. It also requires state lead agencies to consult with the CDFW during the CEQA process to avoid jeopardy to threatened or endangered species. The act prohibits any person from taking or attempting to take a species listed as endangered or threatened (California Fish and Game Code, Section 2080). Section 2080 of the California Fish and Game Code provides the permitting structure for the act. The take of a state-listed endangered or threatened species or candidate species will require incidental take permits as authorized by the CDFW.

As described in the IS and in Appendix F, the Project is not expected to require such authorizations since it is not expected to result in take of a listed species. The Project will avoid known occurrences of listed plants and habitat for listed wildlife species or otherwise mitigate potential impacts to these species.

California Fish and Game Code

CDFW administers the California Fish and Game Code. There are particular sections of the code that are applicable to natural resource management. For example, Section 3503 of the California Fish and Game Code states it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird that is protected under the MBTA. Section 3503.5 further protects all birds in the orders Falconiformes and Strigiformes, birds of prey such as hawks and owls, and their eggs and nests from any form of take. Section 3511 lists fully protected bird species where the CDFW is unable to authorize the issuance of permits or licenses to take these species.

Water resources are regulated by CDFW under Section 1600–1616 of the California Fish and Game Code. Specifically, the code mandates that "it is unlawful for any person to substantially divert or obstruct the natural flow or substantially changes the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity." CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses, including dry washes, characterized by the presence of hydrophytic vegetation, the location of definable bed and banks, and the presence of existing fish or wildlife resources. Further, CDFW jurisdiction is often extended to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that function as part of the riparian system. Historic court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear, but reemerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdiction. However, CDFW does not regulate isolated wetlands (i.e., those that are not associated with a river, stream, or lake). Waters that are jurisdictional to CDFW require a Streambed Alteration Agreement between the CDFW and the project proponent as set forth in Section 1602.

Clean Water Quality 401 Certification

Section 401 of the CWA requires that any person applying for a federal permit or license that may result in a discharge of pollutants into waters of the United States must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. No license or permit may be issued by a federal agency until certification required by Section 401 has been granted. Further, no license or permit may be issued if certification has been denied. CWA Section 404 permits and authorizations are subject to Section 401 certification by the RWQCB.

Streambed Alteration Agreements

CDFW is responsible for protecting, conserving, and managing wildlife, fish, and plant resources in the State of California. Under the California Fish and Game Code, Section 1602, an entity is required to notify CDFW of any activity that may modify a river, stream, or lake. Based on review of historical aerials, portions of the on-site drainage feature appear to have traditional streambed indicators such as a defined bed and bank. The drainage on site is therefore considered to be under the jurisdiction of the CDFW pursuant to Section 1602 of the California Fish and Game Code. Pursuant to Section 1602, a notification must be submitted to the CDFW for any activity that will divert or obstruct the natural flow or alter the bed, channel, or bank (which may include associated biological resources) of a river or stream or use material from a streambed. This includes activities taking place within rivers or streams that flow perennially or episodically and that are defined by the area in which surface water currently flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can

reasonably be identified by physical or biological indicators. As such, compliance with Section 1602, including execution of a Streambed Alteration Agreement, if requested by CDFW, will be required of the Project, pursuant to state law.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act gives the RWQCB broad authority to regulate waters of the state, which are defined as any surface water or groundwater, including saline waters. The RWQCB shares the ACOE's methodology for delineating the limits of jurisdiction based on the identification of OHWM indicators and utilizing the three-parameter approach for wetlands.

Local

Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County MSHCP is a comprehensive, multijurisdictional habitat conservation plan focusing on conservation of species and their associated habitats in western Riverside County. This plan is one of several large, multijurisdictional habitat-planning efforts in Southern California with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region. The MSHCP allows the City and its other Permittees to better control local land-use decisions and maintain a strong economic climate in the region while addressing the requirements of the state and federal endangered species acts.

The MSHCP serves as a habitat conservation plan pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), as well as a Natural Community Conservation Plan under the Natural Community Conservation Planning Act of 2001 (California Fish and Game Code, Section 2800 et seq.). The MSHCP allows the participating jurisdictions to authorize take of plant and wildlife species identified within the plan area. The USFWS and CDFW have authority to regulate the take of threatened, endangered, and rare species. Under the MSHCP, the wildlife agencies have granted take authorization for otherwise lawful actions, such as public and private development that may incidentally take or harm individual species or their habitat outside of the MSHCP conservation area, in exchange for the assembly and management of a coordinated MSHCP conservation area.

The MSHCP is a criteria-based plan and does not rely on a hardline preserve map. Instead, within the MSHCP Plan Area, the MSHCP reserve will be assembled over time from a smaller subset of the Plan Area referred to as the "Criteria Area." The Criteria Area consists of Criteria Cells or Cell Groupings, and flexible guidelines (Criteria) for the assembly of conservation within the Criteria Cells or Cell Groupings. Criteria Cells and Cell Groupings may also be included within larger units known as Cores, Linkages, or Non-Contiguous Habitat Blocks.

As a signatory to the MSHCP, the City adopted Ordinance No. 6709 (which is codified as Chapter 16.72 of the Riverside Municipal Code) on September 23, 2003 (Riverside County Transportation & Land Management Agency 2003), and established a Local Development Mitigation Fee to be used by the Western Riverside County Regional Conservation Authority to implement the MSHCP. The federal and state wildlife agencies approved permits to implement the MSHCP on June 22, 2004. The Project will participate in the MSHCP through the payment of the Local Development Mitigation Fee at the time building permits are issued pursuant to the provisions of Ordinance No. 6709.

Stephens' Kangaroo Rat Habitat Conservation Plan

In 1990, the Riverside County Habitat Conservation Agency developed the Stephens' Kangaroo Rat HCP in order to acquire land and manage habitat for the endangered Stephens' kangaroo rat (*Dipodomys stephensi*) (SKR). The plan allows for incidental take of SKR for qualifying projects located within the HCP area. The SKR HCP mitigates impacts to SKR from development by establishing a network of Core Reserves for conservation of SKR and the ecosystems upon which it depends. The SKR HCP also established a system for managing and monitoring these Core Reserves. In 1996, the SKR HCP designated the Sycamore Canyon Park and the March Air Force Base SKR Management Area as a Core Reserve. The reserve covers 2,502 acres of SKR Management Area, owned by the Department of Defense and the City. Although the Project site is located near this reserve, no portion of the Project site is located within the designated SKR Management Area. Under the SKR HCP, development within the plan boundaries but outside the Core Reserves is deemed to have been fully mitigated for any impacts to SKR through compliance with the HCP and the payment of a fee. The City is a Permittee to the SKR HCP. However, as described in the IS and in Appendix F, development of the Project is not anticipated to impact (i.e., will not take) SKR; therefore, the Project applicant will not be required to participate in the SKR HCP.

City of Riverside General Plan 2025

The Open Space and Conservation Element of the *City of Riverside General Plan 2025* (General Plan 2025) (City of Riverside 2007) contains policies related to the protection of biological resources within the City. The following General Plan 2025 policy is applicable to the Project and aims to minimize impacts related to biological resources.

Policy OS-5.2: Continue to participate in the MSHCP Program and ensure all projects comply with applicable requirements.

4.3.3 Thresholds of Significance

The City has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. Therefore, significance determinations used in this section are from Appendix G of the State CEQA Guidelines. A significant impact will occur if implementation of the Project will:

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

The following significance criteria are based on Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.) and will be used to determine the significance of potential impacts related to biological resources. Based on the IS prepared for the Project (Appendix A) and Appendix G of the State CEQA Guidelines, a development project could have a significant impact related to biological resources if the Project will:

- **BIO-1.** Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- **BIO-2.** Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.3.4 Project Features That Will Reduce Impacts

There are no Project design features or elements that will reduce impacts to biological resources.

4.3.5 Impacts Analysis

Threshold BIO-1: Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

There are no wetlands on the hospital, medical office buildings, parking structure, or senior housing facility sites (Sites A and C). However, based on the review of historical aerial photographs, there is evidence of a possible definable bed and bank on Site B (refer to Section 4.3.1); therefore, a jurisdictional delineation study was prepared (Appendix E).

Drainage 1 is an unnamed, ephemeral drainage feature that flows north to south across Site B. During storm events, surface runoff from the existing parking lot north of Site B enters Drainage 1 and follows on-site topography toward the south for approximately 253 linear feet before flows fan out and infiltrate at a dirt access road. South of the dirt access road, Drainage 1 becomes a swale and directs flows toward an existing concrete inlet structure along the southern boundary of Site B. Flows entering the inlet structure are discharged onto Gateway Drive and eventually flow into the City's underground storm drain system (Appendix E).

Although surface water was not observed within Drainage 1, evidence of an OHWM and surface hydrology was observed via changes in terrestrial vegetation. Flows fan out and infiltrate south of the dirt access road, and evidence of a clearly defined OHWM/streambed was not observed. Based on the field investigation, it is assumed that surface water runoff is only capable of sheet flowing from the terminus of Drainage 1 through the middle of Site B and into the concrete inlet structure on the southern boundary of Site B during significant storm events. Within the boundaries of Site B, Drainage 1 measures approximately 253 linear feet in length, with an OHWM of 3 feet, and CDFW-jurisdictional streambed ranging from 10 to 60 feet in width (Appendix E).

Based on existing site conditions and current design plans, the Project will result in the placement of fill material within on-site jurisdictional areas on Site B.

Waters of the United States Determination

Drainage 1 exhibits a surface hydrologic connection to downstream waters of the United States via the City's underground storm drain system. Further, the drainage feature was historically

mapped as a blue-line stream on U.S. Geographical Survey topographic maps. Therefore, Drainage 1 qualifies as waters of the United States and falls under the jurisdiction of the ACOE. Approximately 0.02 acres (253 linear feet) of ACOE jurisdiction (non-wetland waters) is located within the boundaries of Site B (Appendix E) (Figure 4.3-1).

The ACOE regulates discharges of dredged or fill materials into waters of the United States, including wetlands, pursuant to Section 404 of the CWA. Therefore, mitigation measure **MM-BIO-1** shall be incorporated to ensure that the Project applicant obtains a CWA Section 404 permit prior to impacts occurring within ACOE-jurisdictional areas. As a result, impacts related to waters of the United States will be **less than significant with mitigation incorporated**.

Wetland Determination

An area must exhibit at least minimal characteristics of all three wetland parameters described in the ACOE Arid West Regional Supplement (hydrophtic vegetation, hydric soil, and wetland hydrology) to be considered a jurisdictional wetland. Based on the results of the field investigation, it was determined that no areas of Drainage 1 within Site B exhibited all three wetland parameters (Appendix E). Therefore, no jurisdictional wetland features occur within Site B. Impacts related to wetlands will be **less than significant**.

Regional Water Quality Control Board

During the time of the field investigation, isolated or Rapanos conditions within the boundaries of Site B were not observed. Therefore, the RWQCB-jurisdictional limit follows that of the ACOE and totals approximately 0.02 acres (253 linear feet) (Appendix E) (Figure 4.3-1). Therefore, mitigation measure **MM-BIO-1** shall be incorporated to ensure that the Project applicant obtains a RWQCB CWA Section 401 Water Quality Certification prior to impacts occurring within jurisdictional areas. Therefore, impacts related to waters of the state will be **less than significant with mitigation incorporated**.

California Department of Fish and Wildlife

Drainage 1 exhibits characteristics consistent with CDFW's methodology and will be considered CDFW streambed. Therefore, approximately 0.12 acres (253 linear feet) of CDFW-jurisdictional streambed is located within the boundaries of Site B (Appendix E) (Figure 4.3-1). Therefore, mitigation measure **MM-BIO-1** shall be incorporated to ensure that the Project applicant complies with Section 1602, including entering into a Streambed Alteration Agreement, if requested by CDFW, prior to impacts occurring within CDFW-jurisdictional areas. As a result, impacts related to jurisdictional streambed will be **less than significant with mitigation incorporated**.

Threshold BIO-2: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The MSHCP is a HCP and Natural Community Conservation Plan of which the City is a Permittee (i.e., signatory). Although the Project site is located within the MSHCP Plan Area, it is not located in the Criteria Area. Since the Project site is not located in the Criteria Area, there are no conservation requirements for the Project site. The Project site is, however, still subject to review for consistency with Section 6.1.2 (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pool), Section 6.1.3 (Protection of Narrow Endemic Plant Species), Section 6.3.2 (Additional Survey Needs and Procedures), and Section 6.1.4 (Guidelines Pertaining to the Urban/Wildlands Interface) of the MSHCP. A discussion of the Project's consistency with these MSHCP sections follows.

Consistency with MSHCP Section 6.1.2

Section 6.1.2 of the MSHCP addresses preservation of riparian, riverine, vernal pools, and fairy shrimp habitats. According to the Biological Report (Appendix F), the Project site does not support riverine/riparian habitat. Riparian habitats are specifically defined by the MSHCP under Section 6.1.2. The MSHCP defines riparian/riverine areas as "lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to, or depend upon, soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year." In addition, riverine areas (e.g., streams) include areas that "do not contain riparian vegetation, but that have water flow for all or a portion of the year, and contain biological functions and values that contribute to downstream habitat values for covered species inside the MSHCP Conservation Area." There are no riparian resources pursuant to Section 6.1.2 of the MSHCP on the Project site. The Project site supports one drainage feature (Drainage 1) that traverses Site B. Drainage 1 is an unnamed, ephemeral drainage feature that flows north to south across Site B. During storm events, surface runoff from the existing parking lot north of Site B enters Drainage 1 and follows on-site topography toward the south for approximately 253 linear feet before flows fan out and infiltrate at a dirt access road. South of the dirt access road, Drainage 1 becomes a swale and directs flows toward an existing concrete inlet structure along the southern boundary of Site B. Flows entering the inlet structure are discharged onto Gateway Drive and eventually flow into the City's underground storm drain system (Appendix E). The unnamed, ephemeral drainage does not contain biological functions and values that contribute to downstream habitat values, nor does it lead or connect to other downstream drainages that support covered species inside the MSHCP Conservation Area. Therefore, the drainage on site is not considered a riparian or riverine area pursuant to the MSHCP.

No indicators of ponding or vernal pool plant species were observed during the site visit (Appendix F). Historic aerial photographs and topographic maps were reviewed for signatures of

ponding. No topographic low points or indicators of ponding are present on historic aerial photographs or topographic maps. Despite the presence of an ephemeral drainage previously described, the soils present within Site B include Cieneba rocky sandy loam, Monserate sandy loam, and Hanford coarse sandy loam, which are all well-drained soils not associated with vernal pools. Based on the soils present, the field visit, and a historical aerial photograph review, the Project site was determined not to support vernal pools or fairy shrimp habitat (Appendix F). Therefore, the Project demonstrates compliance with Section 6.1.2 of the MSHCP.

Consistency with MSHCP Section 6.1.3

Section 6.1.3 of the MSHCP sets forth survey requirements for certain narrow endemic plants. The Project site is not located within the Narrow Endemic Plant Species Survey Area and therefore will not conflict with Section 6.1.3 of the MSHCP.

Consistency with MSHCP Section 6.3.2

Section 6.3.2 of the MSHCP sets forth the survey requirements for various plant and animal surveys. The Project site is not located within a Criteria Area Species Survey Area. However, the Project site is located in an Additional Survey Area for burrowing owl (*Athene cunicularia*). To meet requirements in the MSHCP, a habitat assessment for burrowing owls was conducted on September 16, 2015, to identify suitable habitat for burrowing owl. The area surveyed on foot was limited to the Project site boundary, as right of entry was not granted for adjacent parcels. For the properties adjacent to the Project area where access was not granted, a 500-foot buffer area was surveyed visually with binoculars. All observed burrows suitable for burrowing owl were mapped using a Global Positioning System (GPS) device; however, no burrowing owls or potential signs of burrowing owl (e.g., owl pellets, prints, molting feathers, abundant insect remains) were detected during the burrowing owl habitat assessment. After conducting the habitat assessment, it was determined that the Project site contains suitable habitat for burrowing owl. The Project site and undeveloped parcels within a 500-foot buffer provide suitable foraging habitat and suitable nesting habitat where burrowing owl burrows were noted, particularly on the perimeter of the Project site, fence lines, dirt mounds, and berms lining roadways (see Appendix F, Figure 7). A concrete drainage on the southern portion of the northeast section of Site B was also suitable for burrowing owl. However, no burrowing owls were detected. Because suitable nesting habitat (burrows) exists, mitigation measure **MM-BIO-2** shall be incorporated so that a focused burrow survey is conducted prior to commencement of construction to determine if burrowing owls are present. Additionally, in accordance with the MSHCP, all project sites containing burrows or suitable habitat, whether owls were found or not, require preconstruction surveys that are to be conducted within 30 days prior to ground-disturbing

activities for projects within the MSHCP Plan Area. Therefore, mitigation measure **MM-BIO-2** shall be incorporated.

Nesting Birds

The entire Project site provides suitable habitat for nesting birds. The ground surface contains suitable nesting habitat for killdeer (*Charadrius vociferus*). Furthermore, there are numerous bird species that could nest within the tamarisks, willows, and ornamental trees on and surrounding the Project site, such as the northern mockingbird (*Mimus polyglottos*) and mourning dove (*Zenaida macroura).*

Direct impacts to migratory birds must be avoided in accordance with the Migratory Bird Treaty Act and California Fish and Game Code. If ground-disturbing activities occur during the avian nesting season, preconstruction survey and avoidance measures, if nesting birds are present, must be conducted. Per mitigation measure **MM-BIO-3**, a pre-activity nesting bird survey will be implemented if activities are scheduled to occur during the avian nesting season (from February 1 to August 30). Surveys will be conducted within 1 week of activity and will be conducted between dawn and noon.

Based on the discussion above and identified mitigation measures that will be implemented as part of the Project, the Project demonstrates compliance with Section 6.3.2 of the MSHCP.

Consistency with MSHCP Section 6.1.4

Section 6.1.4 of the MSHCP addresses the need for certain projects to incorporate measures to address urban/wildland interfaces in or near the MSHCP Conservation Area. The Project site is not located within a Criteria Cell and is not located within or next to any MSHCP Conservation Areas that will require the need for implementation of Urban/Wildland Interface Guidelines. Therefore, the Project will not conflict with Section 6.1.4 of the MSHCP. In addition, as part of MSHCP compliance, pursuant to the provisions of Ordinance No. 6709, the Project applicant will be required to pay the Local Development Mitigation Fee at the time building permits are issued.

SKR HCP

The Project site is located in the plan area of the SKR HCP, which is implemented by the Riverside County Habitat Conservation Authority. The City is a Permittee to the SKR HCP. The Project site is located outside the SKR Management Areas of the HCP. As a result, impacts related to SKR fees are considered to be **less than significant**.

Overall Consistency with MSHCP

There are no riparian/riverine or vernal pool habitats present, and the Project site is not adjacent to any conservation areas; therefore, the Project is not subject to the requirements as defined in Sections 6.1.2 and 6.1.4 of the MSHCP, respectively. The Project site is not located within any Narrow Endemic Plant Species Survey Areas as defined in Section 6.1.3 of the MSHCP; therefore, the Project is not subject to any habitat assessment or survey requirements for Narrow Endemic Plant Species Survey Area species of the MSHCP. The Project site is not located within a Criteria Area Species Survey Area as defined in Section 6.3.2 of the MSHCP; therefore, the Project is not subject to any habitat assessment or survey requirements for Criteria Area Species Survey Area species. The Project site is located within an additional survey area as defined in Section 6.3.2 of the MSHCP for burrowing owls; therefore, a habitat assessment was conducted, as discussed under the heading "Consistency with MSHCP Section 6.3.2" above. The Project will participate in the MSHCP through the payment of the Local Development Mitigation Fee at the time building permits are issued, pursuant to the provisions of Ordinance No. 6709.

Impacts related to consistency with the provisions of an applicable adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan will be **less than significant with mitigation incorporated**.

4.3.6 Mitigation Measures

Section 15126.4 of the State CEQA Guidelines requires EIRs to describe feasible measures that can minimize significant adverse impacts. The following mitigation measures are included to ensure biological resources are minimized to a level below significant:

MM-BIO-1 Prior to the issuance of grading permit on the Site B, the Project developer/applicant shall obtain a Clean Water Act Section 404 permit, obtain a Regional Water Quality Control Board Clean Water Act Section 401 Water Quality Certification, and comply with Section 1602 of the California Fish and Game Code, including execution of a Streambed Alteration Agreement, if requested by the California Department of Fish and Wildlife (CDFW). All conditions of approval by these regulatory permitting agencies shall be adhered to by the Project.

MM-BIO-2 In accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), potentially suitable habitat to support burrowing owl is present within the Project site. Prior to the initiation of construction activities, a qualified biologist shall conduct focused surveys for burrowing owl in accordance with the Burrowing Owl Survey Instructions for the MSHCP Area (dated march 29, 2006), which includes four site visits during the burrowing owl breeding season (March 1–August 31).

Preconstruction clearance surveys for burrowing owl shall be conducted within 30 days of the commencement of site disturbance to determine whether burrowing owl is present at the site. Preconstruction surveys shall include suitable burrowing owl habitat within the Project footprint and an appropriate buffer as required in the most recent guidelines and where legal access to conduct the survey exists. If burrowing owls are not detected during the clearance survey, no additional mitigation is required.

If burrowing owl is detected, occupied burrowing owl burrows shall not be disturbed during the nesting season (February 1–August 31) unless a qualified biologist approved by CDFW verifies through noninvasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occurred burrows are foraging independently and capable of independent survival. A 500-foot nondisturbance buffer (where no work activities may be conducted) will be maintained between Project activities and nesting burrowing owls during the nesting season, unless otherwise authorized by CDFW. If burrowing owl is detected during the nonbreeding season (September 1–January 31) or confirmed to not be nesting, a 160-foot nondisturbance buffer will be maintained between the Project activities and occupied burrow. If disturbance of burrowing owl cannot be avoided, passive or active relocation of burrowing owls will be implemented. Relocation will be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP. Relocation of occupied burrows will be conducted outside the breeding season (February 1–August 31), pursuant to the California Fish and Game Code and the Migratory Bird Treaty Act.

MM-BIO-3 In order to avoid potential impacts to nesting birds in conformance with the Migratory Bird Treaty Act and California Fish and Game Code during all phases of the Project, a qualified biologist will conduct a nesting bird survey within 1 week prior to the commencement of any ground-disturbing activities from February 1 to August 31, which covers the breeding season for most birds that may occur in the Project area. If active nests are not observed, no further mitigation is required. However, if an active bird nest is found, the nest will be flagged and mapped on the construction plans along with an appropriate buffer, which will be determined by a qualified biologist based on the biology of the species. The nest area will be avoided until the nest is vacated and the juveniles have fledged or the nest is determined to be inactive (no eggs or young). The nest area will be demarcated in the field with flagging and stakes or construction fencing for avoidance.

4.3.7 Environmental Impacts After Mitigation Is Incorporated

With implementation of the above-mentioned mitigation measures, the Project will comply with all the regulatory permits and associated conditions related to jurisdictional drainage features. Additionally, the Project will be fully compliant with the MSHCP and fully covered for potential impacts to covered species with the payment of a MSHCP development mitigation fee.

4.3.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

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4.4 CULTURAL RESOURCES

The focus of the following discussion and analysis is based on the Initial Study (IS) and Notice of Preparation (NOP) (Appendix A) and comments received during the NOP public comment period. This section:

- Describes the natural setting, prehistoric context, and historic context of the Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project) site
- Identifies relevant regulatory requirements
- Evaluates potentially adverse impacts related to archaeological and paleontological resources
- Identifies mitigation measures related to implementation of the Project

The IS/NOP (Appendix A) concluded that potential impacts related to historical resources and human remains were found to either have no impact or less than significant impacts, and therefore, these issues are not discussed further in this Draft Environmental Impact Report (EIR).

Furthermore, Project design features outlined in Chapter 2, Table 2-1, of this Draft EIR include compliance with California Health and Safety Code, Section 7050.5; California Public Resources Code (PRC), Section 5097.98; and California Code of Regulations (CCR), Title 14, Section 15064.5 Subdivisions (d) and (e) (California Environmental Quality Act (CEQA)). State and local laws require that the county coroner be notified of any discovered human remains (California PRC, Section 5097.98); address the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establish procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establish the Native American Heritage Commission (NAHC) to resolve disputes regarding the disposition of such remains. The project will be required to comply with California PRC, Section 5097.8, should any unknown human remains be discovered during site disturbance along with California Health and Safety Code, Section 7050.5, and CCR, Title 14, Section 15064.5 Subdivisions (d) and (e). Therefore, given that the Project will be required to comply with state and local laws related to inadvertent discovery of Native American human remains, as described above, impacts related to human remains will remain less than significant, and this issue will not be further analyzed in this EIR.

4.4.1 Setting

Natural Setting

Geologically, the project site is located southwest of the San Andreas Fault Zone (Dibblee and Minch 2004; Morton and Miller 2003). The bedrock in this area consists of Cretaceous age and older (i.e., over 65 million years old) igneous and metamorphic rocks. These bedrock units are

overlain by a thick sequence of Cenozoic age (approximately 45 million to 11,000 years old) sedimentary deposits, primarily derived from the mountains to the north (Dibblee and Minch 2004; Morton and Miller 2003).

The sage scrub community, which can dominate the area, includes a variety of species, including Coastal Sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), California buckwheat (*Eriogonum fasciculatum*), and lemonadeberry (*Rhus integrifolia*), among others (Lightner 2011). The chaparral community is dominated by Chamise (*Adenostoma fasiculatum*), with lesser amounts of wild lilacs (*Ceanothus* spp.), scrub oak (*Quercus berberidifolia*), and others (Lightner 2011).

Prehistoric Context

This research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1769), and Ethnohistoric (post-AD 1769) periods. The more than 2,500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in Southern California. Furthermore, due to Riverside's physical geography, Riverside County covers both coastal and central California geographical areas, as well as Colorado Desert environments. As such, the cultural background presented in this section will attempt to cover cultural context for both desert and coastal Native American Tribal groups occupying the county.

Evidence for continuous human occupation in Southern California spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad timeframe have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in more or less detail.

Paleoindian Period (pre-5500 BC)

Evidence for Paleoindian occupation in the entire region is tenuous; our knowledge of associated cultural pattern(s) informed by a relatively sparse body of data that has been collected from within an area extending from coastal San Diego, through the Mojave Desert, and beyond. One of the earliest dated archaeological assemblages in coastal Southern California (excluding the Channel Islands) derives from SDI-4669/W-12, in La Jolla. A human burial from SDI-4669 was radiocarbon dated to 9,590–9,920 years before present (BP; 7590–7920 BC) (95.4% probability) (Hector 2006). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (e.g., large amounts of ground stone, battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic

reduction strategies, and relatively small proportions of ground stone tools. Prime examples of this pattern are sites that were studied by Emma Lou Davis (1978) on Naval Air Weapons Station China Lake near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multicomponent fluted point site, and MNO-680—a single component Great Basined Stemmed point site (Basgall et al. 2002). At MNO-679 and MNP-680, ground stone tools were rare, whereas finely made projectile points were common.

Warren et al. (2004) claimed that a biface manufacturing tradition present at the Harris site complex (SDI-149) is representative of typical Paleoindian occupation in the San Diego and central Riverside region that possibly dates between 10,365 and 8200 BC (Warren et al. 2004). Termed San Dieguito (Rogers 1945), assemblages at the Harris site are qualitatively distinct from most others in the region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of processing tools (Warren 1968). While sparsely distributed, this assemblage type is the most documented of potential Paleoindian traditions in this region, and the inland valley corridors would have been well suited to conveyance of such technologies to the Project area and surrounding general region. However, the large degree of artifact variation among discrete findings reported to be associated with the San Dieguito tradition have inspired a broad range of interpretations, and the definition of San Dieguito as a separate cultural tradition is hotly debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos' interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents. In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (e.g., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, is very different than nearly all other assemblages throughout the region, regardless of age. Warren et al. (2004) made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture. Such a strategy contrasts with the expedient flake-based tools and cobble-core reduction strategy that typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

San Dieguito sites are rare in the inland valleys. RIV-2798/H, located on the shore of Lake Elsinore approximately 15 miles south of the project area, represents one possible candidate. Excavations at Locus B at RIV-2798/H produced a toolkit consisting predominately of flaked

stone tools, including crescents, points, and bifaces, and lesser amounts of groundstone tools, among other items (Grenda 1997). A calibrated and reservoir corrected radiocarbon date from a shell produced a date of 6630 BC. Grenda (1997) suggested this site represents seasonal exploitation of lacustrine resources and small game, and resembles coastal San Dieguito assemblages and spatial patterning.

Though it is known that the Colorado Desert region was populated by Hokan speakers during its very late prehistory (Moratto 1984; Laylander 1985), a general cultural chronology for the Colorado Desert region has not yet been clearly established. Various scholars have acknowledged gaps and seeming exceptions in the record, especially when viewing localized areas (Rogers 1945, 1966; Wallace 1955; Warren 1964; Warren 1968; Schaefer 1994). The archaeological record of the Colorado Desert indicates that cultural systems responded to changing environmental conditions (especially heat and available water resources) through time with a variety of hunter–gatherer subsistence and settlement strategies.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not as economically successful as the Archaic strategy. Such a conclusion would fit with other trends in Southern California deserts, wherein hunting-related tools are replaced by processing tools during the early Holocene (Basgall and Hall 1990). Overall, the San Dieguito Complex shows strong affiliations with the Lake Mojave Complex to the north (Warren and True 1961). The similarity of these and other Paleoindian industries led researchers to propose a phase called the Western Stemmed Point Tradition (WSPT). As described, the WSPT subsumed both the San Dieguito and Lake Mojave complexes and several other lithic industries throughout the Great Basin. Radiocarbon dates from WSPT sites range between 9200 and 5500 years BC (Cordell 1997). Faunal assemblages at WSPT sites typically contain remains of artiodactyls such as bighorn sheep (*Ovis canadensis*), deer (Cervidae), and pronghorn (*Antilocapra americana*); small game such as jackrabbits (Lepus); and freshwater mollusks, indicative of exploitation of lake and marshland environments. The faunal evidence attests to, at least in this region, a generalized hunting–gathering adaptation similar to what researchers often consider characterizes the Archaic Period, not the focused adaptation to big-game hunting suspected for the Paleoindian Period in other regions. In all areas of Southern California, Paleoindian sites are rare and generally consist of unstratified lithic scatters or rock features found on deflated desert pavements, near major drainage areas, or along shorelines of Pleistocene lakes (Apple et al. 1997). One stemmed Lake Mojave point, two crescentics, and one domed scraper were found at the Salton Sea Test Base and may indicate a San Dieguito phase occupation of the Salton Basin (Apple et al. 1997). Artifacts found at the same horizon as freshwater gastropods dated at 7630 ± 300 BC may indicate another Paleoindian site, if the dates are accurate and can be reliably linked with the cultural horizon. Radiocarbon dating of shell can be distorted by calcium carbonates in water (Bowman 1990; Hubbs et al. 1963, 1965).

Archaic Period (8000 BC–AD 500)

The more than 2,500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in Southern California. In fact, the Archaic Period is not well represented in Colorado Desert areas (Schaefer 1994). However, if San Dieguito is the only recognized Paleoindian component in the coastal Southern California, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. (2004) admitted as much, citing strong desert connections with San Dieguito. Thus, the Archaic pattern is the earliest local socioeconomic adaptation in California (Hale 2001, 2009). While this continuum is possibly correct and would support the linkage linguists have established, the material evidence is not yet convincing. The Indian Hill Rockshelter in Anza-Borrego State Park is the closest to an Archaic-type site so far discovered. Similar artifacts and features have not been found from other nearby sites (Wilke et al. 1986). Faunal remains from the Archaic Period are not generally well preserved but do indicate an exploitation pattern similar to that of the Paleoindian Period in that a variety of game was hunted, including leporids and artiodactyls (Cordell 1997).

The changes that define the transition from Paleoindian Period to the Archaic have often been related to fluctuating climatic conditions. Regional paleoenvironmental studies (e.g., van Devender 1990) have helped to highlight the complex nature of broad climatic changes that occurred during the Holocene and adaptations that early peoples made to survive (Cordell 1997). Of particular relevance to the Archaic Period was the Altithermal Period, a climatic episode of hot and dry conditions that lasted from about 5500 years BC to 3000 years BC. During the Middle Archaic, approximately 2000 years BC, it is believed that the flora communities of the Salton Basin stabilized, reflecting the end of the Altithermal Period (Flora of North Editorial Committee, eds. 1993+).

Rogers found no sites in the Salton Basin dating to the Archaic Period (Weide 1976). Hayden (1976) suggests that the area may have been largely abandoned due to the warm and dry conditions of the Altithermal. It has been proposed that human populations were reduced in size and may have shifted their focus to areas with streams and springs. Subsequent research on the Altithermal has shown that this period was more variable in moisture and aridity than originally believed (Mehringer 1986). If Archaic occupation of this region did occur, sites may have been lost or eliminated by natural processes or obscured by later settlements. Surface sites are susceptible to erosion, aeolian processes, bioturbation, human disturbance, and lake infilling. There is evidence of early and middle Holocene lake stands, which could have buried or dispersed evidence of Archaic use of Lake Cahuilla. The conditions of the Altithermal may have restricted the number of environmentally favorable locales for use by Archaic populations. These reliable locations would likely be reused throughout prehistory, leading to a mixed archaeological assemblage (Weide 1976).

At Indian Hill Rockshelter, Cottonwood Triangular and Desert Side-Notched points were uncovered, along with ceramic brownware in the upper strata (McDonald 1992). While it is tempting to make a case for a transition from Archaic to Patayan periods, it is more likely that people used this sheltered site long after the earlier group abandoned it. The pictographs in a recess on the south side of the Indian Hill Rockshelter are from the later period. In the northern portion of the Salton Trough, the migrants, now known as Desert Cahuilla, occupied the Coachella and Indian valleys. The filling of Lake Cahuilla about AD 700 forced the lowland settlers to move onto the mesas along the Santa Rosa Mountains or to join others of their clans and moieties to the northwest. The Cahuilla and Yuman groups both refocused adaptive desert strategies within the trough to that rise.

The Archaic pattern recorded in the coastal and central region of California, which has also been termed the Millingstone Horizon (among others), is relatively easy to define with assemblages that consist primarily of processing tools: millingstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurred until the bow and arrow was adopted at around AD 500, as well as ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remained low. After the bow was adopted, small arrow points appear in large quantities and already low amounts of formal flake tools were replaced by increasing amounts of expedient flake tools. Similarly, shaped millingstones and handstones decreased in proportion relative to expedient, unshaped ground stone tools (Hale 2009). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complimented only by the addition of the bow and ceramics.

Late Prehistoric Period (AD 500–1750)

The period of time following the Archaic and prior to Ethnohistoric times (AD 1769) is commonly referred to as the Late Prehistoric (Rogers 1945; Warren et al. 2004); however, several other subdivisions continue to be used to describe various shifts in assemblage composition. This period is generally defined by the addition of arrow points and ceramics, and the widespread use of bedrock mortars. The Late Prehistoric assemblage is very similar to the Archaic pattern, but includes arrow points and large quantities of fine debitage from producing arrow points, ceramics, and cremations. The appearance of mortars and pestles is difficult to place on a timeline because most mortars are on bedrock surfaces. Some argue that the Ethnohistoric intensive acorn economy extends as far back as AD 500 (Bean and Shipek 1978).

However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred prior to AD 1400.

The Late Prehistoric adaptation in the region was generally characterized by dispersed seasonal settlements by mobile groups exploiting both riparian and other desert resources. The region transitioned from late Archaic patterns, that had been influenced by the agriculture-based Hohokam culture on the upper Gila River in Arizona (Schaefer 1994). Recovered material culture includes clay figurines and pipes; small side-notched and serrated projectile points; manos, metates, mortars, and pestles; arrowshaft straighteners; abraders; shell beads; worked bone tools; and both buff ware (from lowland clays) and brownwares (of upland micaceous clays). Also present are examples of rock art, geoglyphs, and cremation burials. People used jacal structures, semi-subterranean houses, and simple armadas (Schaefer 1994). All groups used ceramic ollas for food storage, and the more sedentary groups used elevated granaries (Schaefer 1994).

The many trail systems in the Colorado Desert that date to this Late Prehistoric Period are indicative of trade, travel to special resource collecting areas, and possibly warfare. Such trails often have associated trail shrines, pot-drops, rock art, or other evidence of short-term activities. The wide distribution of obsidian derived from the outcrop at Obsidian Butte is another good indication of the exchange systems that operated during this period (Schaefer 1994).

Lake Cahuilla, located in what is now southeastern Riverside County and Imperial County, was a major resource for prehistoric people during the Late Prehistoric period. Infillings and recessional periods for this lake, created by a reoccurring shift and sedimentation of the Colorado River have been reported to have possibly occurred since the Pleistocene (Schaefer 1994); however, the greatest frequency of such periods have occurred in the last 1,200 years. The lake produced measured approximately 184 kilometers by 54 kilometers, had its shoreline at about 12 meters above mean sea level, and was about 96 meters deep. Lake edge habitats supported a great diversity of food and material resources, including fish, shellfish, and cattails and attracted peoples from the Colorado River, Mojave Desert, and the Peninsular Range. Geoarchaeological evidence indicates at least four major lacustrine periods, each of 100 to 250 years duration, punctuated by drying periods. River water was switched back to the Gulf of California about 1580 AD, and sometime between 1540 and 1600 AD, the drying, isolated lake became saline and subsequently dried completely. Lake edge resources were no longer attractive and cultural adaptations shifted to rivers, springs, and areas where potable water could be derived by digging walk-in wells. Investigators differ in their interpretations of the archaeological record associated with the various stands of Lake Cahuilla. Wilke (1978) interpreted his recovery of Colorado River fish remains (e.g., striped mullet, bonytail chub, and humpback sucker), *Anadonta* sp. freshwater mussel shells, aquatic bird bones (e.g., mudhens and eared grebes), other faunal resources (e.g., rabbits, rodents, and tortoises), and a variety of floral resources (e.g., tules, cattails, screwbean and honey mesquite, various species of cactus, and grasses) as indicating that

such lakeside sites represented year-round residential bases. Weide (1974) did not view lake levels and the attendant shoreline habitats as having been stable. As evidence, he cited recessional and progressional shorelines, complex beach structures, and complex lake stratigraphy. In Weide's view, spring-fed streams and other desert riparian habitats would have hosted more reliable plant resources than fluctuating shorelines and that settlement was only in small, seasonal, temporary camps. Unstable lake edge habitats, in his view, could not support permanent habitation on a long-term basis nor would it have caused permanent population shifts. This suggests that Lake Cahuilla would have had less of an effect on Late Prehistoric population and cultural patterning than many have assumed.

Subsequent to 1600 AD, there was a population influx in the Colorado Desert. A major residential base was even established on the now-dry bed of the former Lake Cahuilla (Schaefer 1994). Late sites are often associated with springs and stands of mesquite. Seasonal subsistence patterns featured mesquite and Atriplex harvests in late spring and early summer, pinyon and mountain sheep exploitation in upland areas during winter, and agave harvesting in early spring.

People in the Colorado Desert adapted to changing environmental conditions through a variety of subsistence and settlement strategies based largely on foraging and collecting, agriculture, and hunting. The arrival of the Spanish and later the Americans caused significant changes to native cultures within eighty years of Captain Anza's incursion. It appears that the traditional adaptations and cultural bonds were not sufficient to counter the population loss due to disease and the appropriation of the few scarce resources available in this environment.

Ethnohistoric Period (post-AD 1750)

The history of the Native American communities prior to the mid-1700s has largely been reconstructed through later mission-period and early ethnographic accounts. The first records of the Native American inhabitants of the region come predominantly from European merchants, missionaries, military personnel, and explorers. These brief, and generally peripheral, accounts were prepared with the intent of furthering respective colonial and economic aims and were combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the region brought more extensive documentation of Native American communities, though these groups did not become the focus of formal and in-depth ethnographic study until the early twentieth century (Bean and Shipek 1978; Boscana 1846; Fages 1937; Geiger and Meighan 1976; Harrington 1934; Laylander 2000; Sparkman 1908; White 1963). The principal intent of these researchers was to record the precontact, culturally specific practices, ideologies, and languages that had survived the destabilizing effects of missionization and colonialism. This research, often understood as "salvage ethnography," was driven by the understanding that traditional knowledge was being lost due to the impacts of

modernization and cultural assimilation. Alfred Kroeber applied his "memory culture" approach (Lightfoot 2005) by recording languages and oral histories within the region. Ethnographic research by Dubois, Kroeber, Harrington, Spier, and others during the early twentieth century seemed to indicate that traditional cultural practices and beliefs survived among local Native American communities.

It is important to note that even though there were many informants for these early ethnographies who were able to provide information from personal experiences about native life before the Europeans, a significantly large proportion of these informants were born after 1850 (Heizer and Nissen 1973); therefore, the documentation of pre-contact, aboriginal culture was being increasingly supplied by individuals born in California after considerable contact with Europeans. As Heizer (1978) stated, this is an important issue to note when examining these ethnographies, since considerable culture change had undoubtedly occurred by 1850 among the Native American survivors of California.

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish contact (Johnson and Lorenz 2006, p. 34). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six primary language families (Golla 2007). As the Project is in the westernmost portion of what is now Riverside County area, the Native American inhabitants of the region would have generally spoken the Cahuilla, Gabrielino, and Seranno varieties of Takic, a language belonging to the Uto-Aztecan language family (Golla 2007; Bean and Smith 1978). The primary group occupying this location during the Ethnohistoric period would have been the Cahuilla. This Cahuilla Takic variation would likely have partially driven by a population movement from Gabrielino territory to the west as early as 3,500 years ago; however, the degree of linguistic variation suggests a time depth as recent as 2,000 years ago (Golla 2007; Kroeber 1925).

The tribes of the region were organized into patrilineal clans or bands centered on a chief, (Kroeber 1925), each with their own territorial land or range where food and other resources were collected at different locations throughout the year (Bean and Smith 1978; Sparkman 1908). The title of chief was heritable along family lines. Inter-band conflict occurred most commonly over trespassing. Place names were assigned to each territory, often reflecting common animals, plants, physical landmarks, or cosmological elements that were understood as being related to that location. Marriages were generally arranged by parents or guardians. Free and widowed women had the option to choose their partner. Polygamy occurred though was not common, often with a single man marrying a number of sisters. Shamanism was a major component in tribal life. The physical body and its components were thought to be related to the power of an individual, and wastes such as fluids, hair, and nails were discarded with intent. Hair, once cut, was often carefully collected and buried to avoid being affected negatively or

controlled by someone who wishes them harm. Some locations and natural resources were of cultural significance. Springs and other water-related features were thought to be related to spirits (Bean and Smith 1978). These resources, often a component of origin stories, had power that came with a variety of risks and properties to those who became affected. Puberty ceremonies for both boys and girls were complex and rigorous. Mourning ceremonies were similar throughout the region, generally involving cutting of the hair, burning clothing of the deceased a year after death, and redistributing personal items to individuals outside of the immediate tribal group (Sparkman 1908; Kroeber 1925).

The Cahuilla culture area encompassed four distinct life zones: Lower Sonoran, Upper Sonoran, Transition, and Canadian-Hudsonian. The Lower Sonoran Life Zone, generally below the 600-meter (2,000-foot) elevation, includes the present study area (Bean and Smith 1978). The Lower Sonoran Life Zone was generally below elevations where pinyon and junipers trees grew. Available floral resources included mesquite, oak, and willow trees, cacti, and a variety of seed-producing plants. Faunal resources included mule deer, jackrabbits, cottontails, raccoons, and mountain sheep and a variety of squirrels, rats, and mice. Because of the variability of environmental conditions, prehistoric populations exploited a variety of resources in different life zones. Where this resource was present, the staple food of the Native American inhabitants during the ethnohistoric period was acorns (Sparkman 1908). Of the six or more oak species within this traditional territory, the most desirable of these was the black oak (*Quercus kelloggii*) due to its ease of processing, protein content, and digestibility. Acorns were stored in granaries to be removed and used as needed. The acorns were generally processed into flour using a mortar and pestle. The meal was most commonly leached with hot water and the use of a rush basket; however, there are also accounts of placing meal into excavated sand and gravel pits to allow the water to drain naturally. The acorn was then prepared in a variety of ways, though often with the use of an earthen vessel (Sparkman 1908). Other common edible and medicinal plants of use included wild plums, choke cherries, Christmas berry, gooseberry, elderberry, willow, *Juncus*, buckwheat, lemonade berry, sugar bush, sage scrub, currents, wild grapes, prickly pear, watercress, wild oats, and other plants. More arid plants such as *Yucca, Agave*, mesquite, chia, bird-claw fern, *Datura*, Mesquite, yerba santa, *Ephedra*, and cholla were also of common use by some populations. A number of mammals were generally eaten. Game animals included bighorn sheep, black-tailed deer, antelope, rabbits, hares, birds, ground squirrels, woodrats, bears, mountain lions, bobcats, coyotes, and others. In lesser numbers, reptiles and amphibians may have been consumed.

Historic Context

Spanish Period (1769–1821)

The first European settlers to the area were Spanish missionaries who, after establishing the Mission San Luis Rey de Francia in 1798, established an asistencia near the Luiseno village of

Éxva Teméeku. In 1819, the Mission granted land to Leandro Serrano, the highest locally appointed official (or "mayordomo") of San Antonio de Pala Asistencia, for the Mission of San Luis Rey for Rancho Temescal. From around 1819 until his death in 1852, Serrano built and occupied three separate adobe residences in the county. In 1828, Leandro was elected as the mayordomo of Mission San Juan Capistrano. Serrano's family resided in the third adobe residence until around 1898 (Ellerbee 1918).

Mexican Period (1821–1846)

It was in the early 1820s that Spain's grip on its expansive subjugated territories began to unravel, which greatly affected the political and national identity of the Southern California territory. Mexico established its independence from Spain in 1821, secured California as a Mexican territory in 1822, and became a federal republic in 1824. After the Mexican independence and the 1833 confiscation of former Mission lands, Juan B. Alvarado became Governor of the Territory. In 1836, Alvarado began the process of subdividing Riverside County into large ranchos: Rancho Jurupa in 1838; El Rincon in 1839; Rancho San Jacinto Viejo in 1842; Rancho San Jacinto y San Gorgonio in 1843; Ranchos La Laguna, Pauba, and Temecula in 1844; Ranchos Little Temecula and Potreros de San Juan Capistrano in 1845; and Ranchos San Jacinto Sobrante, La Sierra (Sepulveda), La Sierra (Yorba), Santa Rosa, and San Jacinto Nuevo y Potrero in 1846 (Brown and Boyd 1922; Fitch 1993). While these ranchos were established in documentation, the cultural and commercial developments of the Ranchos were punctuated and generally slow with little oversight or assistance from the government in Mexico. On May 22, 1840, Governor Alvarado granted the "11-league" Rancho Jurupa to Don Juan Bandini (Stonehouse 1965).

In 1843, La Placita de los Trujillos, or "La Placita" (also known as "San Salvador"), was established in Riverside County and has been since recognized as one of the first non-native settlement in the San Bernardino Valley (Brown and Boyd 1922). A group of genízaro colonists from Abiquiú, New Mexico, arrived in the area in the early 1840s (Nostrand 1996). Don Juan Bandini donated a portion of Rancho Jurupa to them on the condition that they would assist in protecting his livestock from Indian raids. Lorenzo Trujillo led ten of the colonist families to 2,000 acres on the "Bandini Donation" on the southeast bank of the Santa Ana River and formed the village of La Placita. In 1852, the same year that Leandro Serrano died, the Los Angeles County Board of Supervisors established a town called "San Salvador" encompassing a number of small, growing communities in the area initially known as "La Placita". San Salvador was mainly a community of agriculture and animal husbandry until around the late 1860s with the occurrence of "the Great Flood of 1862" and a second flood later in 1886.

American Period (1846 to Present)

In the late 1840s and early 1850s, after the arrival of a growing European-descended American and other foreign populations and the conclusion of the Mexican–American war with the Treaty

of Guadelupe Hidalgo, issues concerning the land rights immediately ensued with results that often largely favored newly introduced American interests (Starr 2007; Hale 1888). The California Gold Rush was in full steam with a heavy influx of new immigrants from not only across the United States but international travelers many from Asian and Latin American countries changing the dynamics of the local populations. Growth in the region's population was inevitable with the major shifts in the popular social perceptions of potential economic opportunities that California had to offer during the 1850s. The local population growth was further facilitated by the creation of the Temescal Station of the Butterfield Overland Mail Route in 1857 and the organization of the first Temescal School District (Ellerbe 1918).

For a brief time, tin mining was a source of local development. Tin mining had been initiated in the 1850s by Able Stearns but proved largely unsuccessful and was stagnant for years due to litigation disputes that were not settled until 1888 by the U.S. Supreme Court. After the dispute settlement, miners converged on the region, swelling the immediate population while the tin mine enjoyed a 2-year run of operations, closing down for good in 1892 (Ellerbe 1918). The growth of the area increased steadily as the region's economic focus shifted from ranching / animal husbandry to a more fruit orchard / agricultural lifestyle greatly influenced by the idyllic Mediterranean climate and the introduction of large numbers of honey bees and hives (Ellerbe 1918).

In March of 1870, John Wesley North issued a circular entitled "A Colony for California" to promote the idea of founding an agriculture-based colony in California. Prospective investors met in Chicago on May 18th, and the interest expressed led to formation of the Southern California Colony Association. This success prompted North to head to Los Angeles. North arrived on May 26th, initially intending to settle the colony there. However, the association directors decided on the Jurupa rancho along the banks of the Santa Ana River, purchasing it from the California Silk Association in August of that same year. North then took up residence on site for the purpose of surveying and developing the colony. He envisioned small-scale farmers growing fruits appropriate to paradise: oranges, lemons, figs, walnuts, olives, almonds, grapes, sweet potatoes, sorghum, and sugar beets (Stonehouse 1965). The community was originally called "Yurupa," but the name was changed to "Riverside" in December of 1870 (Stonehouse 1965; Patterson 1971; Woldarski 1993). The citrus industry increased dramatically during the 1880s, with promotion of the area shifting to focus on the potential wealth to be had through agriculture (California Department of Transportation 2007).

Of particular note is the introduction of the navel orange to the budding California citrus industry. Two navel orange trees from Brazil's Bahia Province were gifted to Eliza Tibbets by William Saunders, horticulturalist at the U. S. Department of Agriculture. Eliza and her husband, Luther, brought the trees to the Riverside colony and planted them in 1873. These parent trees produced sweet-tasting seedless fruits, sparking the interest of local farmers and becoming so popular that the fruits from these trees eventually became known as "Riverside Navel." The

fruit's popularity helped establish Riverside as a national leader in cultivating oranges. One of the two original Parent Washington Navel Orange trees is still extant, growing near the intersection of Arlington and Magnolia Avenue, and is "mother to millions of navel orange trees the world over"; the tree is designated as California Historical Landmark No. 20 (Hurt 2014).

North originally intended that the Colony would build, own, and operate its own irrigation system, but the desert mesa location made such a venture prohibitively expensive. Thus, the Southern California Company Association joined forces with the Silk Center Association to develop the irrigation project. After completing a canal survey, work began in October 1870 to construct a canal 12 feet wide, narrowing to 8 feet at the base, and 3 feet deep (Stonehouse 1965). With continued growth of the area, a second canal was constructed, and by 1878, the Riverside Canal Company was formed, only to be superseded, due to litigation, by the Riverside Water Company in 1886 (Bailey 1961). Further growth in the region led to construction of a third major canal, called the "Gage Canal," being undertaken during 1882–1888 (Guinn 1907; Woldarski 1993). Development of such a stable water supply bolstered the agricultural industry, helping facilitate the booming citrus industry in Riverside. By 1895, around 20,000 acres of navel orange groves had been planted, and the citrus industry became the primary economic influence for the region well into the turn of the century (Guinn 1907; Brown 1985). This rapid growth of such a vibrant citrus industry led to Riverside becoming the wealthiest city per capita in the United States by 1895 (Unknown B, n.d.). The growing citrus industry was in turn stimulated by another major factor that would strongly influence the cultural development of Riverside: the advent of the railroad, in particular the Transcontinental railroad.

In the later-19th century, the railroad industry began to connect vast swaths of the country with a rail line transportation system that had previously required extremely slow travel and often with dangerous travel conditions. The California Southern railroad was the initial rail line developed in the region around 1882, which then connected with the Santa Fe transcontinental line in 1885. In 1887, C.W. Smith and Fred Ferris of the California Southern Railroad and J.A. Green incorporated the Valley Railway to serve the region. The San Jacinto Valley Railroad was constructed the next year, in 1888; it traveled southeast from Perris, east across the valley, and gradually curving northeast to its terminus at San Jacinto (George and Hamilton 2009). With the combination of rail transportation, packing industry, and cold storage facilities, Riverside was able to yield over one-half million boxes of oranges by 1890 (Woldarski 1993).

Winchester and Hemet quickly established towns along the line. The railroad connected the eastern part of the valley to Perris, where it met the California Southern Railroad. This ensured transportation of valley products to markets in Los Angeles and San Diego. The Hemet–San Jacinto Growers' Association Cannery was located adjacent to the railroad; the canned fruit was loaded directly onto railcars for shipment outside of the valley (George and Hamilton 2009). In addition, many of the ranches located along the rail line had their own sidings, where the farm

products were directly loaded onto the trains. The railroad also provided passenger service to Los Angeles; the construction of modern highways in the 1950s lessened the importance of the railroad. Later, the route was taken over by the Atchison, Topeka, and Santa Fe Railroad, and then the Burlington Northern Santa Fe.

During this time in Southern California history, counties were established and the area now known as Riverside County was divided between Los Angeles County and San Diego County. In 1853, the eastern part of Los Angeles County was used to create San Bernardino County. Between 1891 and 1893, several proposals and legislative attempts were put forth to form new counties in Southern California. These proposals included one for a Pomona County and one for a San Jacinto County; however, none of the proposals were adopted to create Riverside County until the California Board of Commissioners filed the final canvass of the votes, and the measure was signed by Governor Henry H. Markham on March 11, 1893.

After the turn of the twentieth century, during the years just prior to the United States' involvement in World War I, the U.S. War Department began building up its strength in anticipation of involvement in the war and announced plans for several new military bases. A group of local Riverside business owners and investors received approval to construct the Alessandro Flying Training Field, which opened on March 1, 1918 (Unknown B, n.d.). Sited on the plateau overlooking Riverside, the Alessandro Flying Training Field was renamed March Field after 2nd Lieutenant Peyton C. March Jr., the deceased son of then-Army Chief of Staff, General Peyton C. March. Approximately 1 month after Alessandro field was opened, Lieutenant March Jr. was killed in an air crash in Texas just 15 days after being commissioned, and March field was renamed in his honor.

March Field served as a base for primary flight training with an 8-week course, which could accommodate a maximum of 300 students per course. With the end of World War I in November 1918, the future operational status of March Field was, for a short time, undetermined. While initial demobilization began after World War I, March Field remained an active Army Air Service station, and then as a U.S. Army Air Corps installation throughout the interwar period. However, with the U.S. entrance in World War II, March Field quickly became a major installation of the U.S. Army Air Forces, training air units for action in the Pacific theater. Following the end of World War II (1945) and the establishment of the U.S. Air Force in 1947, March Field was renamed March Air Force Base. Throughout the Cold War, March Air Force Base was a key installation of the Strategic Air Command, and in 1996, it was transferred to the Air Force Reserve Command and utilized as a base for the Air Force Reserve and the California Air National Guard.

After World War II, Riverside diversified its economy, developing a significant manufacturing sector. Largely light-industry, the manufacturing sector generates a range of products, including

aircraft components, automotive parts, gas cylinders, electronic equipment, food products, and medical devices. The Southern California post-war housing boom and the construction of modern freeways drastically increased the population of both the City and County of Riverside. As the county seat and largest city in the region, Riverside also houses numerous legal, accounting, brokerage, architectural, engineering, and technology firms as well as banking institutions.

In recent years, Riverside has given much attention to diversifying its economy beyond the citrus industry, creating a sustainable community encompassing an area of nearly 7,200 square miles and boasting a population of 1.3 million people (2010 Census). Riverside is home to the University of California, Riverside and the UCR Botanical Gardens, which contains 40 acres of unusual plants and 4 miles of walking trails. The City of Riverside (City) prides itself on its historic connection to the navel orange, being home to the one surviving Parent Navel Orange Tree from which all American West Coast navel orange trees are descended. Despite changes in the regional economic focus and the general shifts in social movements in California over the last decade, Riverside has consistently been one of the, if not the, fastest growing areas in the country.

4.4.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

There are no federal regulations applicable to the Project.

State

The California Register of Historical Resources

In California, the term "historical resource" includes

> any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. (PRC Section 5020.1(j))

In 1992, the California legislature established the California Register of Historic Resources (CRHR)

> to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change. (PRC Section 5024.1(a))

The criteria for listing resources on the CRHR, enumerated in the following text, were developed to be in accordance with previously established criteria for listing in the National Register of

Historic Places (NRHP). According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

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

(2) Is associated with the lives of persons important in our past;

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

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (14 CCR 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further in the following text, the following CEQA statutes and State CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and State CEQA Guidelines Section 15064.5(a) define "historical resources." In addition, State CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource." It also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."

In addition, the Native American Historic Resource Protection Act makes it a misdemeanor, punishable by up to 1 year in jail, to deface or destroy a Native American historic or cultural site that is listed or may be eligible for listing in the CRHR.

PRC sections 21083.2(b)–(c) and State CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; State CEQA Guidelines Section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; State CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource, even if it does not fall within this presumption (PRC Section 21084.1; State CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (State CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following:

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA (State CEQA Guidelines Section 15064.5(b)(2)).

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources" then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2(a), (b), and (c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); State CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC 21074(c); 21083.2(h)), further consideration of significant impacts is required.

Senate Bill 18

The Local and Tribal Intergovernmental Consultation process, commonly known as Senate Bill (SB) 18 was signed into law in September of 2004 and took effect on March 1, 2005. SB 18 established responsibilities for local governments to contact, provide notice to, refer plans to, and consult with California Native American Tribes. The purpose of this consultation process is to protect the identity of the cultural place and to develop appropriate and dignified treatment of the cultural place in any subsequent project. The consultation is required whenever a general plan,

specific plan, or open space designation is proposed for adoption or to be amended. As part of the application process, California Native American Tribes must be given the opportunity to consult with the City for the purpose of preserving, mitigating impacts to, and identifying cultural places located on project land within the City. The consultation process initiated by the City for the project began on December 23, 2015.

Assembly Bill 52

Assembly Bill (AB) 52 requires that the lead agency begin consultation with any California native tribe that is traditionally and culturally affiliated with the geographic area of a proposed project within 14 days of determining that an application for the project is complete. The lead agency is only required to notify tribes that have previously requested AB 52 notification. The City notified the following tribes on December 23, 2015, as they have requested AB 52 notification:

- Agua Caliente Band of Cahuilla Indians
- Cahuilla Band of Indians
- Gabrieleno Band of Mission Indians – Kizh Nation
- Morongo Band of Mission Indians
- Pechanga Band of Luiseño Indians
- Rincon Band of Luiseño Indians
- San Gabriel Band of Mission Indians
- San Manuel Band of Mission Indians
- Soboba Band of Luiseño Indians

At the request of the Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians, consultations were conducted by the City. The City met with the Soboba tribe on April 26, 2016, and continued discussions via email and phone calls through August 3, 2016. The Soboba tribe provided a list of potential mitigation measures and monitoring recommendation for the Project. The City met with the Pechanga tribe on March 15, 2016, and continued consultation via email until May 25, 2015. The Pechanga tribe also provided recommendations regarding monitoring of the Project site during construction. Neither tribe identify any known tribal resources within the Project site. A record of consultation is included in Appendix B to the cultural resources technical report (Appendix I).

Local

City of Riverside General Plan 2025

The Historic Preservation Element of the City General Plan 2025 (City of Riverside 2007a) contains objectives and policies related to the protection of cultural resources in the City. The following City's General Plan 2025 policies are applicable to the project and aim to minimize impacts related to cultural, archaeological, and paleontological resources:

Policy HP-1.1: The City shall promote the preservation of cultural resources to ensure that citizens of Riverside have the opportunity to understand and appreciate the City's unique heritage.

Policy HP-1.3: The City shall protect sites of archaeological and paleontological significance and ensure compliance with all applicable State and federal cultural resources protection and management laws in its planning and project review process.

Policy HP-2.1: The City shall actively pursue a comprehensive program to document and preserve historic buildings, structures, districts, sites (including archaeological sites), objects, landscapes, and natural resources.

Policy HP-2.3: The City shall provide information to citizens and the building community about what to do upon the discovery of archaeological resources and burial sites, as well as, the treatment, preservation, and repatriation of such resources.

Objective HP-4: To fully integrate the consideration of cultural resources as a major aspect of the City's planning permitting and development activities.

Policy HP-4.1: The City shall maintain an up-to-date database of cultural resources and use that database as a primary informational resource for protecting those resources.

Policy HP-4.3: The City shall work with the appropriate tribe to identify and address, in a culturally appropriate manner, cultural resources and tribal sacred sites through the development review process.

Objective HP-5: To ensure compatibility between new development and existing cultural resources.

Policy HP-5.1: The City shall use its design and plot plan review processes to encourage new construction to be compatible in scale and character with cultural resources and historic districts.

Policy HP-7.2: The City shall incorporate preservation as an integral part of its specific plans, general plan, and environmental processes.

Title 20 of the Riverside Municipal Code

Title 20 of the Riverside Municipal Code (City of Riverside 2007b) provides guidelines for preserving, protecting, restoring, and rehabilitating historical and cultural resources within the City to maintain and encourage appreciation of its history and culture, improve the quality of the City's built environment, maintain the character and identity of its communities, and enhance the local economy through historic preservation. The following are the primary goals of Title 20:

a. Safeguard the City's heritage as embodied and reflected in historical and cultural resources.
b. Encourage public knowledge, understanding and appreciation of the City's past.
c. Foster civic and neighborhood pride and a sense of identity based on the recognition and use of cultural resources.
d. Promote the enjoyment and use of cultural resources appropriate for the education and recreation of the people of the City.
e. Preserve diverse and harmonious architectural styles and design preferences reflecting phases of the City's history, and encourage complementary contemporary design and construction.
f. Enhance property values and to increase economic and financial benefits to the City and its inhabitants.
g. Protect and enhance the City's attraction to tourists and visitors, thereby stimulating business and industry.

h. Identify and resolve conflicts as early as possible between preservation of cultural resources and alternative land uses.

i. Integrate the preservation of cultural resources and the extraction of relevant data from such resources into public and private land management and development processes.

j. Conserve valuable material and energy resources by ongoing use and maintenance of the existing build environment.

k. Implement the City's General Plan.

l. Work in concert with the City's Zoning Code. (Ord. 7108 §1, 2010; Ord. 6263 §1 (part), 1996).

4.4.3 Thresholds of Significance

The IS for the Project (Appendix A) concluded that potential impacts related to historical resources and human remains were found to either have no impact or less than significant impacts, and therefore, these issues are not discussed further in this Draft EIR. As such, the following significance criteria, included in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.), were used to determine the significance of impacts to cultural resources. Based on the IS (Appendix A) and Appendix G of the State CEQA Guidelines, impacts to archaeological or paleontological resources will be significant if the Project will:

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Methodology

Archaeological Approach

Initially, the Project area of potential effect (APE) was defined as the 50.85-acre development area of the Project. Subsequent project planning discussions determined that for the purposes of the cultural resources study, the APE will include the entirety of the Canyon Springs Business Park Specific Plan area, as the Specific Plan requires an amendment for the Project. The standards for the archaeological survey exceeded the applicable Secretary of Interior Professional Qualifications Standards for archaeological survey and evaluation. When possible, the applicable project APE was subject to a 100% survey with transects spaced no more than 15 meters apart wherever possible and oriented in cardinal directions. Transects were not utilized in areas where buildings or other built features are present. The survey crew was equipped with a Global Positioning System (GPS) receiver with sub-meter accuracy. Location-specific

photographs were taken using an Apple 3rd Generation IPAD equipped with 8-MP resolution and georeferenced PDF maps of the project area. Accuracy of this device ranged between 3 meters and 10 meters. Evidence for buried cultural deposits was opportunistically sought through inspection of natural or artificial erosion exposures and the spoils from rodent burrows. Visibility was restricted by low grasses to less than 50% of the ground surface in undeveloped areas.

Documentation of cultural resources complied with the Office of Historic Preservation and Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716–44740) and the California Office of Historic Preservation Planning Bulletin Number 4(a).

Paleontological Approach

The sensitivity for assessing paleontological sensitivity was based on a review of geologic maps, as well as previous paleontological investigations from the area. The County of Riverside General Plan Paleontological Sensitivity map was also reviewed for relative sensitivity. A pedestrian survey of the Project site was conducted with the intent of identifying any non-renewable paleontological resources. Subsurface exposures and appropriate landforms were opportunistically sought out and inspected for their potential to contain fossil specimens or features.

4.4.4 Project Features That Will Reduce Impacts

There are no Project design features or elements that will reduce impacts to cultural resources.

4.4.5 Impact Analysis

Threshold CUL-1: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

According to Figure 5.5-1 of the City's General Plan 2025 Final Program EIR, the Project site is located within areas of low archaeological sensitivity (City of Riverside 2007a). To determine if archaeological resources are located in the Project area, a Phase I Cultural Resources and Paleontological Inventory for the Canyon Springs Healthcare Campus was prepared (Appendix I). As part of that assessment, a search of the California Historical Resources Information System at the Eastern Information Center (EIC) was requested on July 22, 2015, for the Project site and a surrounding 0.5-mile area. A second record search was requested on March 23, 2016, from the EIC staff that covered an additional 0.5-mile area to the initial record search, making the total area covered by the record search 1 mile. The search included any previously recorded cultural resources and investigations within a 1-mile radius of the Project area.

Previously Conducted Cultural Resources Studies

A total of 43 cultural resource studies have been previously conducted within a 1-mile radius of the Project area. Some of these studies (RI-00980, Author Unknown 1980; RI-01410, Hammond 1982; RI-03605, Woldarski 1993; and RI-03693, Foster et al. 1991) have covered a portion, but not all, of the project area (refer to Table 2 of Appendix I).

Previously Recorded Cultural Resources

Seventy-seven cultural resources have been previously recorded within a 1-mile radius of the Project area. None of these resources are located within the actual Project APE. The resources located within the 1-mile search buffer include 56 prehistoric resources, one multicomponent resource with both prehistoric and historic elements, and a total of 20 historic resources. The 56 prehistoric resources in the search buffer include five isolated artifacts, one habitation site, and 21 bedrock milling sites; the 20 historic resources previously recorded include 14 historic residences, two railway sites, two artifact and/or trash scatters, one historic military resource, and one historic wall/fence feature site. Table 4.4-1 outlines the previously recorded resources within the 1-mile records search area.

Table 4.4-1
Previous Recorded Resources within the Canyon Springs Healthcare Campus 1-mile Records Search Area

Primary Number	Trinomial	Age	Description	In/Out of APE
P-33-015743	CA-RIV-008196	Historic	Burlington Northern Santa Fe Railroad; San Jacinto Valley Railway; Santa Fe Valley Railroad	Out
P-33-001203	CA-RIV-001203	Prehistoric	Bedrock milling site	Out
P-33-001206	CA-RIV-001206	Prehistoric	Bedrock milling site	Out
P-33-002435	CA-RIV-002435	Prehistoric	Bedrock milling site	Out
P-33-002436	CA-RIV-002436	Prehistoric	Bedrock milling site	Out
P-33-002509	CA-RIV-002509	Prehistoric	Bedrock milling site	Out
P-33-002510	CA-RIV-002510	Prehistoric	Bedrock milling site	Out
P-33-002511	CA-RIV-002511	Prehistoric	Bedrock milling site	Out
P-33-002512	CA-RIV-002512	Prehistoric	Bedrock milling site	Out
P-33-002513	CA-RIV-002513	Prehistoric	Bedrock milling site	Out
P-33-002514	CA-RIV-002514	Prehistoric	Bedrock milling site	Out
P-33-002517	CA-RIV-002517	Prehistoric	Bedrock milling site	Out
P-33-002518	CA-RIV-002518	Prehistoric	Bedrock milling site	Out
P-33-002521	CA-RIV-002521	Prehistoric	Bedrock milling site	Out
P-33-002522	CA-RIV-002522	Prehistoric	Bedrock milling site	Out
P-33-002523	CA-RIV-002523	Prehistoric	Bedrock milling site	Out

Table 4.4-1
Previous Recorded Resources within the Canyon Springs Healthcare Campus 1-mile Records Search Area

Primary Number	Trinomial	Age	Description	In/Out of APE
P-33-002524	CA-RIV-002524	Prehistoric	Bedrock milling site	Out
P-33-002525	CA-RIV-002525	Prehistoric	Bedrock milling site	Out
P-33-002763	CA-RIV-002763	Prehistoric	Bedrock milling site	Out
P-33-002868	CA-RIV-002868	Prehistoric	Bedrock milling site	Out
P-33-002869	CA-RIV-002869	Prehistoric	Bedrock milling site	Out
P-33-003078	CA-RIV-003078	Prehistoric	Bedrock milling site	Out
P-33-003234	CA-RIV-003234	Prehistoric	Bedrock milling site	Out
P-33-003241	CA-RIV-003241	Prehistoric	Bedrock milling site	Out
P-33-003242	CA-RIV-003242	Prehistoric	Bedrock milling site	Out
P-33-003243	CA-RIV-003243	Prehistoric	Bedrock milling site	Out
P-33-003244	CA-RIV-003244	Prehistoric	Bedrock milling site	Out
P-33-003245	CA-RIV-003245	Prehistoric, historic	Bedrock milling site	Out
P-33-003246	CA-RIV-003246	Prehistoric	Bedrock milling site	Out
P-33-003264	CA-RIV-003264	Prehistoric	Bedrock milling site	Out
P-33-003265	CA-RIV-003265	Prehistoric	Bedrock milling site	Out
P-33-003266	CA-RIV-003266	Prehistoric	Bedrock milling site	Out
P-33-003267	CA-RIV-003267	Prehistoric	Habitation site	Out
P-33-003268	CA-RIV-003268	Prehistoric	Bedrock milling site	Out
P-33-003269	CA-RIV-003269	Prehistoric	Bedrock milling site	Out
P-33-003272	CA-RIV-003272/H	Historic	Military target range	Out
P-33-003815	CA-RIV-003815	Prehistoric	Bedrock milling site	Out
P-33-003816	CA-RIV-003816	Prehistoric	Bedrock milling site	Out
P-33-003817	CA-RIV-003817	Historic	Historic railroad slabs	Out
P-33-004181	CA-RIV-004181	Prehistoric	Bedrock milling site	Out
P-33-004182	CA-RIV-004182	Historic	Historic residence	Out
P-33-004183	CA-RIV-004183	Prehistoric	Bedrock milling site	Out
P-33-004184	CA-RIV-004184	Prehistoric	Bedrock milling site	Out
P-33-004185	CA-RIV-004185	Prehistoric	Bedrock milling site	Out
P-33-004186	CA-RIV-004186	Prehistoric	Bedrock milling site	Out
P-33-004187	CA-RIV-004187	Prehistoric	Bedrock milling site	Out
P-33-004188	CA-RIV-004188	Prehistoric	Bedrock milling site	Out
P-33-004189	CA-RIV-004189	Prehistoric	Bedrock milling site	Out
P-33-004195	CA-RIV-004195	Prehistoric	Bedrock milling site	Out
P-33-006915	—	Historic	Historic residence	Out
P-33-006916	—	Historic	Historic residence	Out
P-33-006917	—	Historic	Historic residence	Out

Table 4.4-1
Previous Recorded Resources within the Canyon Springs Healthcare Campus 1-mile Records Search Area

Primary Number	Trinomial	Age	Description	In/Out of APE
P-33-006918	—	Historic	Historic residence	Out
P-33-006919	—	Historic	Historic residence	Out
P-33-011502	CA-RIV-006856	Prehistoric	Bedrock milling site	Out
P-33-011825	—	Historic	Historic residence	Out
P-33-011826	—	Historic	Historic residence	Out
P-33-012118	CA-RIV-006943/H	Multicomponent	Historic residence and bedrock milling site	Out
P-33-013607	—	Prehistoric	Milling artifact	Out
P-33-013608	—	Historic	Three historic coins	Out
P-33-015656	—	Prehistoric	Quartzite secondary flake	Out
P-33-015657	—	Prehistoric	Bifacial millingstone	Out
P-33-015671	CA-RIV-008166	Prehistoric	Bedrock milling site	Out
P-33-015914	—	Prehistoric	Bedrock milling site and artifact scatter	Out
P-33-016713	CA-RIV-008750	Prehistoric	Bedrock milling site	Out
P-33-016714	CA-RIV-008751	Prehistoric	Bedrock milling site	Out
P-33-016715	CA-RIV-008752	Prehistoric	Bedrock milling site	Out
P-33-020326	—	Historic	Historic residence	Out
P-33-020327	—	Historic	Historic residence	Out
P-33-020328	—	Historic	Historic residence	Out
P-33-020329	—	Historic	Historic residence	Out
P-33-020330	—	Historic	Historic residence	Out
P-33-020331	—	Historic	Historic residence	Out
P-33-023946	—	Prehistoric	Bifacial millingstone	Out
P-33-023947	—	Prehistoric	Quartzite secondary flake	Out
P-33-024053	CA-RIV-011818	Historic	Refuse scatter	Out
P-33-024845	CA-RIV-012316	Historic	Foundations/structure pads and walls/fences	Out

Source: Appendix I.

Native American and Tribal Coordination

Dudek initiated Native American coordination for the Project on July 9, 2015, independent of consultation efforts under AB 52 and SB 18. As part of the process of identifying cultural resources within or near the project area, the NAHC was contacted to request a review of its Sacred Lands File. The NAHC response was received on August 10, 2015, and stated that the Sacred Lands File search failed to indicate the presence of Native American cultural places within the project area, or the surrounding 0.5-mile records search area. A second round of Native American coordination with a second expanded Sacred Lands File search was conducted on March 31, 2016. The second Sacred Lands File search covered a 1-mile radius surrounding

the Project APE. The NAHC responses provided contact information for potentially interested tribal parties. Correspondence with the listed Native American parties was initiated, and to date, three tribal responses have been received. Responses have been received from Agua Caliente Band of Cahuilla Indians' Tribal Historic Preservation Office, Morongo Band of Mission Indians, and Pauma Band of Luiseno Indians. As part of a second round of tribal outreach, tribal responses from the Pala Tribal Historic Preservation Office, Rincon Band of Luiseno Indians and a second response from the Agua Caliente Band of Cahuilla Indians were received.

Below is a summary of the responses that Dudek has received to date (all correspondence with Native American groups is provided in Appendix B of Appendix I):

- Chris Devers of the Pauma Band of Luiseño replied on January 12, 2016, and stated the tribe is unaware of any specific cultural resources on the project property and to contact the tribe in the event cultural resources are discovered during construction activity.
- Katie Croft of the Agua Caliente Band of Cahuilla Indians replied on February 8, 2016, and requested a condition to be included regarding discovery of human remains.
- Victoria Harvey of the Agua Caliente Band of Cahuilla Indians replied on April 25, 2016, and stated that the project area is not located within the boundaries of the Agua Caliente Band of Cahuilla Indians Reservation, but within the tribe's Traditional Use Area. Agua Caliente Band of Cahuilla Indians conducted a records check in the tribe's registry that indicated the Project area has been previously surveyed for cultural resources but that no cultural resources were identified. The tribe requested a condition to be included regarding discovery of human remains.
- Raymond Huaute of the Morongo Band of Mission Indians replied on March 9, 2016, and stated that given that the Project area has been previously disturbed for some time and that there are no known prehistoric resources in the area, the tribe does not see a need to have a tribal monitor present. However, standard development conditions were provided for discovery of human remains and discovery of Native American cultural resources.
- Shasta C. Gaughen of the Pala Tribal Historic Preservation Office replied on April 20, 2016, and stated that the Project is not within the boundaries of the recognized Pala Indian Reservation and beyond the boundaries of the territory that the tribe considers as a Traditional Use Area. The Pala Tribal Historic Preservation Office has no objection to the Project as currently planned but defers to tribes in closer proximity to the Project area.
- Vincent Whipple of the Rincon Band of Luiseño Indians replied on April 22, 2016, and stated that the Project site is located within the Luiseño Aboriginal Territory of the Luiseño people but is not located within the Rincon's historic boundaries. The tribe has no additional information concerning cultural resources and deferred to the Pechanga Band of Luiseño Indians or the Soboba Band of Luiseño Indians.

All tribes responding to outreach have requested that they be notified and included in further discussions should yet-identified cultural resources be encountered.

Since the Project includes the creation of a new Canyon Springs Healthcare Campus Specific Plan and an Amendment to the Canyon Springs Business Park Specific Plan, a SB 18 consultation process was initiated by the City with the NAHC-listed tribes for the project provided by the NAHC response. Additionally, in accordance with AB 52, agency-to-agency consultation by the City was conducted by sending a formal notice to inform California Native American tribes that have requested such notice of a project application within a geographic area with which the tribe is traditionally and culturally affiliated.

The Pechanga Band of Luiseño Indians requested consultation pursuant to AB 52, and the Soboba Band of Luiseño Indians requested consultation pursuant to SB 18, with the City. The City met with the Pechanga tribe on March 15, 2016, and continued consultation vial email until May 25, 2016. The Pechanga tribe provided recommendations regarding monitoring of the project site during construction, but did not identify any known tribal resources within the project site. The City met with the Soboba tribe on April 26, 2016, and continued discussions via email and phone calls through August 3, 2016. The Soboba tribe also provided a list of potential mitigation measures and monitoring recommendation for the Project. During consultation, both tribes identified that the Project is proposed to be located within an area identified to have the potential to contain cultural resources; therefore, mitigation measures **MM-CUL-1** through **MM-CUL-4** have been identified for the Project and require that final plans be forwarded to the tribes prior to grading activities; that archaeological and paleontological monitoring be implemented during construction activities; that treatment and disposition of any cultural resources found occurs in accordance with required protocols and stipulations; and that cultural sensitivity training for construction personnel be required and implemented. Consultation was concluded after identifying that mitigation measures **MM-CUL-1** through **MM-CUL-4** will be required for the Project as a condition of approval.

Pedestrian Field Survey

The initial intensive pedestrian field survey was conducted on July 9, 2015. This survey focused on three sites where major ground disturbing activities will be required. After the APE was expanded to include the entire Specific Plan area, a subsequent survey was performed for this additional APE on April 01, 2016. No archeological resources were observed within either the initial project area's APE, or the expanded APE during the time of the intensive pedestrian field survey (Appendix I).

Although the Project site is located within a low archaeological sensitivity area and no archaeological resources were found during the time of the intensive pedestrian field survey, there is always a chance that unknown resources could be discovered. Additionally, in consideration of the Pechanga Band of Luiseño Indians' and Soboba Band of Luiseño Indians'

concerns related to work in the Project site, mitigation measures **MM-CUL-1** through **MM-CUL-4** will be incorporated as part of the Project. Therefore, impacts are considered **less than significant with mitigation incorporated**.

Threshold CUL-2: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The geologic unit in the Project area is generally characterized by Quaternary alluvium. Based on a review of geologic maps, as well as previous paleontological investigations from the area, it is likely that local younger Holocene alluvium (Qya; low paleontological sensitivity) visible on the surface covers older Pleistocene alluvial deposits (Qvof; high paleontological sensitivity). This later geologic unit is characteristically reddish-brown in coloration and has been noted to contain fossil bison and other megafauna (Reynolds and Reynolds 1991). The County of Riverside General Plan Paleontological Sensitivity map indicates that the Project site is of High Sensitivity for paleontological resources (County of Riverside; High B) (County of Riverside 2015). This sensitivity classification is based on geologic units with the potential to encounter paleontological resources at depths of 4 feet or greater below the surface. Given the potential High Paleontological Sensitivity on the Project site, mitigation measure **MM-CUL-1** through **MM-CUL-4** will be incorporated. Therefore, impacts are considered **less than significant with mitigation incorporated**.

4.4.6 Mitigation Measures

The following mitigation measures will reduce potential impacts of the Project to cultural and paleontological resources, consistent with guidance provided in the State CEQA Guidelines (14 CCR 15064.5):

MM-CUL-1 Prior to grading permit issuance, if there are any changes to Project site design and/or proposed grades, the Applicant and the City shall contact interested tribes to provide an electronic copy of the revised plans for review. Additional consultation shall occur between the City, developer/applicant, and interested tribes to discuss any proposed changes and review any new impacts and/or potential avoidance/preservation of the cultural resources on the project site. The City and the developer/applicant shall make all attempts to avoid and/or preserve in place as many cultural and paleontological resources as possible that are located on the Project site if the site design and/or proposed grades should be revised.

MM-CUL-2 **Archaeological and Paleontological Monitoring:** At least 30 days prior to application for a grading permit and before any grading, excavation and/or ground disturbing activities take place, the developer/applicant shall retain a Secretary of Interior Standards qualified archaeological monitor to monitor all

ground-disturbing activities in an effort to identify any unknown archaeological resources.

1. The Project archaeologist, in consultation with interested tribes, the Developer, and the City, shall develop an Archaeological Monitoring Plan to address the details, timing, and responsibility of all archaeological and cultural activities that will occur on the project site. Details in the plan shall include:
    a. Project grading and development scheduling;
    b. The development of a rotating or simultaneous schedule in coordination with the developer/applicant and the Project archaeologist for designated Native American Tribal Monitors from the consulting tribes during grading, excavation, and ground-disturbing activities on the site, including the scheduling, safety requirements, duties, scope of work, and Native American Tribal Monitors' authority to stop and redirect grading activities in coordination with all Project archaeologists;
    c. The protocols and stipulations that the Applicant, tribes, and project archaeologist/paleontologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits, or nonrenewable paleontological resources that shall be subject to a cultural resources evaluation;
    d. Treatment and final disposition of any cultural and paleontological resources, sacred sites, and human remains if discovered on the project site; and
    e. The scheduling and timing of the Cultural Sensitivity Training noted in mitigation measure **MM-CUL-4**.

MM-CUL-3 **Treatment and Disposition of Cultural Resources:** In the event that Native American cultural resources are inadvertently discovered during the course of grading for this Project, the following procedures will be carried out for treatment and disposition of the discoveries:

1. **Temporary Curation and Storage:** During the course of construction, all discovered resources shall be temporarily curated in a secure location on site or at the offices of the Project archaeologist. The removal of any artifacts from the Project site will need to be thoroughly inventoried with tribal monitor oversight of the process; and
2. **Treatment and Final Disposition:** The landowner(s) shall relinquish ownership of all cultural resources, including sacred items, burial goods, and

all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources. The Applicant shall relinquish the artifacts through one or more of the following methods and provide the City of Riverside Community and Economic Development Department with evidence of same:

a. Accommodate the process for on-site reburial of the discovered items with the consulting Native American tribes or bands. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed;

b. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 CFR Part 79 and therefore will be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation;

c. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center or Riverside Metropolitan Museum by default; and

d. At the completion of grading, excavation, and ground-disturbing activities on the site, a Phase IV Monitoring Report shall be submitted to the City documenting monitoring activities conducted by the Project archaeologist and Native Tribal Monitors within 60 days of completion of grading. This report shall document the impacts to the known resources on the property; describe how each mitigation measure was fulfilled; document the type of cultural resources recovered and the disposition of such resources; provide evidence of the required cultural sensitivity training for the construction staff held during the required pre-grade meeting; and, in a confidential appendix, include the daily/weekly monitoring notes from the archaeologist. All reports produced will be submitted to the City of Riverside, Eastern Information Center, and interested tribes.

MM-CUL-4 **Cultural Sensitivity Training:** The Secretary of Interior Standards County certified archaeologist and Native American monitors shall attend the pre-grading meeting with the developer/permit holder's contractors to provide Cultural Sensitivity Training for all construction personnel. This shall include the

procedures to be followed during ground disturbance in sensitive areas and protocols that apply in the event that unanticipated resources are discovered. Only construction personnel who have received this training can conduct construction and disturbance activities in sensitive areas. A sign-in sheet for attendees of this training shall be included in the Phase IV Monitoring Report.

4.4.7 Environmental Impacts after Mitigation Is Incorporated

Following implementation of mitigation measures **MM-CUL-1** through **MM-CUL-4**, listed in Section 4.4.6, Project impacts related to archaeological and paleontological resources will be **less than significant**.

4.4.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

16 U.S.C. 470–470x-6. National Historic Preservation Act of 1966, as amended.

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4.5 GREENHOUSE GAS EMISSIONS

The focus of the following discussion and analysis is based on the Initial Study and Notice of Preparation (NOP) (Appendix A) and comments received during the NOP public comment period. This section:

- Describes the existing greenhouse gas (GHG) emissions setting
- Identifies relevant regulatory requirements
- Evaluates potentially adverse impacts related to GHG emissions
- Identifies mitigation measures related to implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project)

The focus of the following analysis per the Initial Study and NOP (Appendix A) is related to the direct or indirect impacts of the generation of GHG emissions and consistency with an applicable plan, policy, or regulation adopted for the purpose of reducing GHGs. The Initial Study did not scope out any issues related to GHG emissions, and therefore, both thresholds related to GHG emissions are analyzed in this Draft Environmental Impact Report (EIR).

4.5.1 Setting

The Greenhouse Effect and Greenhouse Gases

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind, lasting for an extended period (i.e., decades or longer). Gases that trap heat in the atmosphere are often called GHGs. The greenhouse effect traps heat in the troposphere through a threefold process: short-wave radiation emitted by the Sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and back toward the Earth. This trapping of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and water vapor (H_2O). Some GHGs, such as CO_2, CH_4, and N_2O, can occur naturally and are emitted into the atmosphere through natural processes, as well as human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely byproducts of fossil-fuel combustion, whereas CH_4 results mostly from off-gassing associated with agricultural practices and landfills. Human-caused GHGs, which are produced by certain industrial products and processes, have a much greater heat-absorption

potential than CO_2. They include fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (CAT 2006).

The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Without it, the average temperature of the Earth would be about 0 degrees Fahrenheit (°F) (−18 degrees Celsius (°C)) instead of its current 57°F (14°C). Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect.

The Intergovernmental Panel on Climate Change (IPCC) developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2E).

The California Emissions Estimator Model (CalEEMod) (version 2013.2.2) assumes that the GWP for CH_4 is 21 (which means that emissions of 1 MT of CH_4 are equivalent to emissions of 21 MT of CO_2), and the GWP for N_2O is 310, based on the IPCC Second Assessment Report (1995). The IPCC has released subsequent assessment reports with updated GWPs, and statewide documents are beginning to transition to the use of the GWPs in the IPCC Fourth Assessment Report. GWPs used in U.S. Environmental Protection Agency's (EPA's) 2016 Inventory of U.S. GHG Emissions and Sinks and California Air Resources Board's (CARB's) California 2016 GHG emissions inventory are based on the IPCC Fourth Assessment Report (IPCC 2007), which includes GWPs of 1 for CO_2, 25 for CH_4 (a slight increase), and 298 for N_2O (a slight decrease). Nonetheless, because the primary Project-related GHG emissions are from CO_2, the use of the revised GWPs would not substantially change the overall Project-generated GHG emissions. As such, for the purposes of this analysis, it is appropriate to use the hardwired GWP values in CalEEMod from the IPCC Second Assessment Report.[1]

[1] As indicated in the *Canyon Springs Healthcare and Senior Living Supplemental AQ and GHG Memo* included in Appendix B, the Air Quality and Greenhouse Gas Technical Reports prepared by Urban Crossroads for the Project commenced in year 2015, and at that time, assumed project operations would initiate in 2016. CalEEMod (version 2013) was also the model available at that time, whereas the updated CalEEMod (version 2016) has since been released. Although the 2016 opening year is no longer possible, the underlying technical calculations using the 2016 opening year are conservative and would overstate rather than understate the potential impacts of the Project, since emissions are generally reduced as the analysis year increases based on the natural turnover of older equipment and vehicles being replaced with newer, less polluting ones. Similarly, the underlying energy demand calculations are based on the 2013 Title 24 standards, which were in effect at the time and would be reduced based on the most current 2016 Title 24 standards that became effective January 1, 2017. As such, the emissions and energy calculations in the Urban Crossroads 2016 Air Quality and Greenhouse Gas Technical Reports incorporated herein, are conservative, overstate potential impacts, and do not require additional analysis.

Contributions to Greenhouse Gas Emissions

In 2014, the United States produced 6,870 million metric tons (MMT) of CO_2E. The primary GHG emitted by human activities in the United States was CO_2. This primary GHG represented approximately 80.9% of total GHG emissions. The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.7% of CO_2 emissions in 2014 (EPA 2016a).

According to the 2013 GHG inventory data compiled by CARB for the California GHG Inventory for 2000–2013, California emitted approximately 459 MMT CO_2E of GHGs, including emissions resulting from out-of-state electrical generation (CARB 2015). The primary contributors to GHG emissions in California are transportation, industry, electric power production from both in-state and out-of-state sources, agriculture, and other sources, which include commercial and residential activities. These primary contributors to California's GHG emissions and their relative contributions in 2013 are presented in Table 4.5-1.

Table 4.5-1
Greenhouse Gas Sources in California (2013)

Source Category	Annual GHG Emissions (MMT CO_2E)	Percent of Total[a]
Transportation	169.02	37
Industrial uses	92.68	20
Electricity generation	90.45[b]	20
Residential and commercial uses	43.54	9
Agriculture	36.21	8
High global warming potential substances	18.5	4
Recycling and waste	8.87	2
Totals	**459.28**	**100%**

Source: CARB 2015.
Notes: MMT CO_2E = million metric tons carbon dioxide equivalent per year
[a] Percentage of total has been rounded.
[b] Includes emissions associated with imported electricity, which account for 39.99 MMT CO_2E annually.

Table 4.5-2, presents the City of Riverside's (City's) 2007 GHG emissions and the percent contribution of each emissions sector (transportation, commercial/industrial energy use, residential energy use, and solid waste).

Table 4.5-2
City of Riverside Baseline Greenhouse Gas Emissions Inventory (2007)

Emissions Sector	Annual GHG Emissions (MT CO_2E/year)	Percent of Total[a]
Transportation	1,301,784	43.0
Commercial/industrial energy use	1,028,804	34.0
Residential energy use	626,136	20.7

Table 4.5-2
City of Riverside Baseline Greenhouse Gas Emissions Inventory (2007)

Emissions Sector	Annual GHG Emissions (MT CO_2E/year)	Percent of Total[a]
Solid waste	67,342	2.2
Total[a]	**3,024,066**	**100%**

Source: City of Riverside 2016.
Notes: MT CO_2E = metric tons of carbon dioxide equivalent per year
[a] Total may not sum due to rounding.

As shown on Table 4.5-2, the primary generators of GHGs in the City were attributed to transportation and commercial/industrial energy uses, accounting for approximately 43% and 34% of the total communitywide GHG emissions in 2007, respectively. Residential energy uses accounted for approximately 21%, and solid waste accounted for the remaining 2% of the GHG emissions.

Potential Effects of Human Activity on Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 *Intergovernmental Panel on Climate Change Synthesis Report* indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2014).

In California, climate change impacts have the potential to affect sea level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, and electricity demand and supply (CCCC 2006). The primary effect of global climate change has been a 0.2°C rise in average global tropospheric temperature per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming could be taking place.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010a).

An increase in annual average temperature is a reasonably foreseeable effect of climate change. Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by between 4.1°F to 8.6°F, depending on emissions levels. Springtime warming—a critical influence on snowmelt—will be particularly pronounced. Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California, compared to the coast. Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights (CCCC 2012). A decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 30% to as much as 90% is predicted over the next 100 years (CAT 2006).

Model projections for precipitation over California continue to show the Mediterranean pattern of wet winters and dry summers with seasonal, year-to-year, and decade-to-decade variability. For the first time, however, several of the improved climate models shift toward drier conditions by the mid-to-late 21st century in central and, most notably, Southern California. By late-century, all projections show drying and half of them suggest 30-year average precipitation will decline by more than 10% below the historical average (CCCC 2012).

Wildfire risk in California will increase as a result of climate change. Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. However, human activities will continue to be the biggest factor in ignition risk. It is estimated that the long-term increase in fire occurrence associated with a higher emissions scenario is substantial, with increases in the number of large fires statewide ranging from 58% to 128% above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57% to 169%, depending on location (CCCC 2012).

Reduction in the suitability of agricultural lands for traditional crop types may occur. While effects may occur, adaptation could allow farmers and ranchers to minimize potential negative effects on agricultural outcomes through adjusting timing of plantings or harvesting and changing crop types.

Public health-related effects of increased temperatures and prolonged temperature extremes, including heat stroke, heat exhaustion, and exacerbation of existing medical conditions, could be particular problems for the elderly, infants, and those who lack access to air conditioning or cooled spaces (CNRA 2009a).

4.5.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

Massachusetts v. U.S. Environmental Protection Agency

On April 2, 2007, in Massachusetts v. U.S. Environmental Protection Agency, the U.S. Supreme Court directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA administrator is required to follow the language of Section 202(a) of the Clean Air Act. On December 7, 2009, the administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The elevated concentrations of GHGs—CO2, CH4, N2O, hydrofluorocarbons, perfluorocarbons, and SF6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The combined emissions of GHGs—CO2, CH4, N2O, and hydrofluorocarbons—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act

On December 19, 2007, President George W. Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the act would do the following to aid in the reduction of national GHG emissions:

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel by 2022.
2. Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
3. Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

EPA and National Highway Traffic Safety Administration Joint Final Rule for Vehicle Standards

In April 2010, the EPA and NHTSA announced a joint final rule to establish a national program consisting of new standards for light-duty vehicles model years 2012 through 2016 that is intended to reduce GHG emissions and improve fuel economy. The EPA approved the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA approved Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act (75 FR 25324–25728), effective on July 6, 2010 (75 FR 25324–25728).

The EPA's GHG standards require new passenger cars, light-duty trucks, and medium-duty passenger vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile in model year 2016. The CAFE standards for passenger cars and light trucks were phased in between 2012 and 2016. In August 2012, the EPA and NHTSA approved a second round of GHG and CAFE standards for model years 2017 and beyond (77 FR 62624–63200). These standards will reduce motor vehicle GHG emissions for cars and light-duty trucks by model year 2025.

Council on Environmental Quality National Environmental Policy Act Guidelines on GHG

The Council on Environmental Quality (CEQ) issued Final GHG guidance on August 1, 2016, to assist federal lead agencies with GHG significance determinations under the National Environmental Policy Act (NEPA) associated with federal actions. The guidance states that CEQ

> does not establish any particular quantity of GHG emission as 'significantly' affecting the quality of the human environment or give greater consideration to the effects of GHG emissions and climate change over other effects on the human environment. (CEQ 2016)

As such, the adopted 2016 CEQ guidance does not specify a numeric threshold under which a proposed project as quantitatively analyzed under NEPA would be considered less than significant. The guidance recommends GHG emissions be quantified and disclosed (if quantification of emissions is feasible) and supplemented with a qualitative analysis of the project's contribution to and effect on global climate change.

American Recovery and Reinvestment Act

On February 17, 2009, President Obama signed the American Recovery and Reinvestment Act (ARRA) of 2009. ARRA was passed in response to the economic crisis of the late 2000s, with the primary purpose to maintain existing jobs and create new jobs. Among the secondary objectives of ARRA was investment in "green" energy programs, including funding the following through grants, loans, or other funding: private companies developing renewable

energy technologies; local and state governments implementing energy efficiency and clean energy programs; research in renewable energy, biofuels, and carbon capture; and development of high-efficiency or electric vehicles.

EPA SmartWay Program

Launched in 2004, the EPA SmartWay Program helps companies advance supply chain sustainability through tracking and sharing information about fuel use and freight emissions across supply chains, which helps companies identify and select more efficient freight carriers and operational strategies. The SmartWay Program aims to reduce freight transportation GHG emissions by accelerating the use of advanced fuel-saving technologies (EPA 2016b).

Heavy-Duty Engines and Vehicles Fuel Efficiency Standards

In addition to the regulations applicable to cars and light-duty trucks, on August 9, 2011, the EPA and the NHTSA announced fuel economy and GHG standards for medium-duty and heavy-duty trucks, which applies to vehicles from model year 2014–2018. EPA and NHTSA have adopted Phase 1 standards for CO_2 emissions and fuel consumption, respectively, tailored to each of three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. This program is expected to reduce GHG emissions and fuel consumption for affected vehicles by 9% to 23%. As of August 2016, EPA and NHTSA have also jointly adopted Phase 2 standards, affecting model years 2021–2027, and expected to reduce GHG emissions beyond the first phase by 16%–25%. The second round of regulation introduces an additional vehicle category, trailers. Commitments for trailers are voluntary from 2018–2021 and mandatory after 2021 and are projected to reduce GHG emissions up to 9%. The final rule was adopted on August 16, 2016.

Multistate/Regional Area

The Western Regional Climate Action Initiative

The Western Regional Climate Action Initiative (WCI) is a partnership among seven states, including California, and four Canadian provinces to implement a regional, economy-wide cap-and-trade system to reduce global warming pollution. The WCI will cap GHG emissions from the region's electricity, industrial, and transportation sectors with the goal to reduce the heat trapping emissions that cause global warming to 15% below 2005 levels by 2020. When the WCI adopted this goal in 2007, it estimated this would require 2007 levels to be reduced worldwide between 50% and 85% by 2050. California is working closely with the other states and provinces to design a regional GHG reduction program that includes a cap-and-trade approach. CARB's planned Cap-and-Trade Program is also intended to link California and the other member states and provinces.

State

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California to reduce energy demand and consumption. The premise for the standards is that energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for space and water heating) results in GHG emissions. Therefore, increased energy efficiency in buildings results in relatively lower rates of GHG emissions on a building-by-building basis. The Title 24, Part 6, standards are updated every 3 years. The most recent amendments to Title 24, Part 6, referred to as the 2016 standards, became effective on January 1, 2017. Title 24, Part 6, does not apply to hospitals but applies to other facilities associated with the Project such as the medical office buildings (included in Site C).

Title 24 also includes Part 11, known as California's Green Building Standards. California's Green Building Standards, which initially took effect in January 2011, were updated effective January 1, 2017, and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, as well as schools and hospitals. The mandatory standards require the following:

- A 20% mandatory reduction in indoor water use
- Diversion of 50% of construction and demolition waste from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Low-pollutant-emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboard

California's Green Building Standards also include voluntary efficiency measures that are provided at two separate tiers and implemented per the discretion of local agencies and applicants.

Senate Bill 1078

Senate Bill (SB) 1078 (Sher) (September 2002) established the Renewable Portfolio Standard (RPS) program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010.

Assembly Bill 1493

In response to the transportation sector accounting for more than half of California's CO_2 emissions, Assembly Bill (AB) 1493 (Pavley) was enacted on July 22, 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. The near-term (2009–2012) standards resulted in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, and the mid-term (2013–2016) standards are expected to result in a reduction of about 30%.

Executive Order S-3-05

Executive Order S-3-05 (June 2005) established California's GHG emissions reduction targets. The executive order established the following goals: GHG emissions should be reduced to 2000 levels by 2010, GHG emissions should be reduced to 1990 levels by 2020, and GHG emissions should be reduced to 80% below 1990 levels by 2050. Under the executive order, the California EPA is directed to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team (CAT) was formed, which subsequently issued the 2006 CAT Report to Governor Schwarzenegger and the Legislature (CAT 2006).

The 2009 CAT Biennial Report (CAT 2010b) expands on the policy outlined in the 2006 assessment. The 2009 report identifies the need for additional research in several different aspects that affect climate change to support effective climate change strategies. Subsequently, the 2010 CAT report to Governor Schwarzenegger and the California Legislature (CAT 2010a) reviews past climate action milestones, including voluntary reporting programs, GHG standards for passenger vehicles, the Low Carbon Fuel Standard (LCFS), a statewide renewable energy standard, and the cap-and-trade program.

Assembly Bill 32

In furtherance of the goals established in Executive Order S-3-05, the legislature enacted AB 32 (Núñez and Pavley), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed in September 2006. AB 32 committed the state to reducing GHG emissions to 1990 levels by 2020.

CARB was assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce

compliance with the established standards. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

The first action under AB 32 resulted in the adoption of a report listing early action GHG emissions reduction measures in June 2007. The early actions include three specific GHG control rules. In October 2007, CARB approved an additional six early action GHG reduction measures under AB 32. The three original early action regulations meeting the narrow legal definition of "discrete early action GHG reduction measures" include the following:

1. A low-carbon fuel standard to reduce the "carbon intensity" of California fuels.
2. Reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of "do-it-yourself" automotive refrigerants.
3. Increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.

The additional six early action regulations, which were also considered "discrete early action GHG reduction measures," consist of the following:

1. Reduction of aerodynamic drag and, thereby, fuel consumption from existing trucks and trailers through retrofit technology.
2. Reduction of auxiliary engine emissions of docked ships by requiring port electrification.
3. Reduction of perfluorocarbons from the semiconductor industry.
4. Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products).
5. Requirements that all tune-up, smog check, and oil change mechanics ensure proper tire inflation as part of overall service to maintain fuel efficiency.
6. Restriction on the use of SF_6 from non-electricity sectors if viable alternatives are available.

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMT CO_2E. In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of GHGs for large facilities that account for 94% of GHG emissions from industrial and commercial stationary sources in California. Approximately 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity

retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and other industrial sources that emit CO_2 in excess of specified thresholds.

In December 2008, CARB approved the *Climate Change Proposed Scoping Plan: A Framework for Change* (Scoping Plan) (CARB 2008) to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emission level by 2020 would require a reduction of GHG emissions by approximately 28.5%, in the absence of new laws and regulations (referred to as "business as usual" (BAU) or "No Action Taken" (NAT)). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and CAT early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program.

The key elements of the Scoping Plan include the following:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
- Achieving a statewide renewables energy mix of 33%
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the LCFS
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

An update to the Scoping Plan (Scoping Plan Update) was adopted in May 2014 (CARB 2014). Based on updated information, the Scoping Plan Update revises the 2020 emissions target to 431 MMT CO_2E (based on updated GWPs for GHGs), as well as the 509 MMT CO_2E 2020 BAU or NAT condition (CARB 2014). Thus, under CARB's most current document, reducing the BAU or NAT condition of 509 MMT CO_2E to the 1990 emissions level of 431 MMT CO_2E will require a reduction of 78 MMT CO_2E, or approximately a 15.3% reduction (compared to a 28.5% reduction as set forth in the original Scoping Plan). The Scoping Plan Update also builds upon the initial Scoping Plan with new strategies and recommendations. The update identifies

opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The update defines CARB's climate change priorities for the next 5 years and sets the groundwork to reach California's long-term climate goals set forth in executive orders S-3-05 and B-16-2012. Executive Order B-16-2012 directed state entities under the governor's direction and control to facilitate development and distribution of zero-emission vehicles. The governor's executive order sets a long-term target of reaching 1.5 million zero-emission vehicles on California's roadways by 2025. On a statewide basis, the executive order also establishes a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050.

The Scoping Plan Update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan. These efforts were pursued to achieve the near-term 2020 goal and have created a framework for ongoing climate action that can be built upon to maintain and continue economic sector-specific reductions beyond 2020, as required by AB 32. The Scoping Plan Update identifies key focus areas or sectors, including energy, transportation, agriculture, water, waste management, natural and working lands, short-lived climate pollutants, green buildings, and the cap-and-trade program. The update also recommends that a statewide mid-term target and mid-term and long-term sector targets be established toward meeting the 2050 goal established by Executive Order S-3-05 to reduce California's GHG emissions to 80% below 1990 levels, although no specific recommendations are made.

Senate Bill 1

SB 1 (Murray) (August 2006) adds sections to the Public Resources Code, including Chapter 8.8, California Solar Initiative, that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements. Section 25780 establishes that it is the goal of the state to install solar energy systems with a generation capacity of 3,000 megawatts, to establish a self-sufficient solar industry in which solar energy systems are a viable mainstream option for both homes and businesses within 10 years of adoption, and to place solar energy systems on 50% of new homes within 13 years of adoption.

Senate Bill 1368

In September 2006, Governor Schwarzenegger signed SB 1368, which requires the California Energy Commission (CEC) to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the California Public Utilities Commission (CPUC). This effort will help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in

power plants whose GHG emissions are as low as or lower than new combined-cycle natural gas plants by requiring imported electricity to meet GHG performance standards in California and by requiring that the standards be developed and adopted in a public process.

Executive Order S-1-07

Issued on January 18, 2007, Executive Order S-1-07 sets a declining LCFS for GHG emissions measured in CO_2E grams per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources such as algae, wood, and agricultural waste. In addition, the LCFS would drive the availability of plug-in hybrid, battery electric, and fuel-cell power motor vehicles. The LCFS is anticipated to lead to the replacement of 20% of the fuel used in motor vehicles with alternative fuels by 2020.

Assembly Bill 1109

Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general purpose lighting to reduce electricity consumption 50% for indoor residential lighting and 25% for indoor commercial lighting.

Senate Bill 97

SB 97 (Dutton) (August 2007) directs the Governor's Office of Planning and Research (OPR) to develop guidelines under the California Environmental Quality Act (CEQA) for the mitigation of GHG emissions. The Governor's OPR was tasked to develop proposed guidelines by July 1, 2009, and the California Natural Resources Agency (CNRA) directed to adopt guidelines by January 1, 2010. On June 19, 2008, the Governor's OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents (OPR 2008). The advisory indicated that a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities, should be identified and estimated. The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures that are necessary to reduce GHG emissions to a less-than-significant level.

On April 13, 2009, the Governor's OPR submitted to the CNRA its proposed amendments to the State CEQA Guidelines relating to GHG emissions. On July 3, 2009, the CNRA commenced the Administrative Procedure Act rulemaking process for certifying and adopting the proposed amendments, starting the public comment period. The CNRA adopted State CEQA Guidelines amendments on December 30, 2009, and transmitted them to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative Law completed its review

and filed the amendments with the secretary of state. The amendments became effective on March 18, 2010. The amended guidelines establish several new CEQA requirements concerning the analysis of GHGs, including the following:

- Requiring a lead agency to "make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project" (Section 15064.4(a))
- Providing a lead agency with the discretion to determine whether to use quantitative or qualitative analysis or performance standards to determine the significance of GHG emissions resulting from a particular project (Section 15064.4(a))
- Requiring a lead agency to consider the following factors when assessing the significant impacts from GHG emissions on the environment:
    - The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting
    - Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project
    - The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (Section 15064.4(b))
- Allowing lead agencies to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures, including offsets that are not otherwise required (Section 15126.4(c))

The amended guidelines also establish two new guidance questions regarding GHG emissions in the Environmental Checklist set forth in State CEQA Guidelines Appendix G (14 CCR 15000 et seq.):

- Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Senate Bill 107

SB 107 (Simitian) (September 2006) requires investor-owned utilities (e.g., Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric) to generate 20% of their electricity from renewable sources by 2010. Previously, state law required that this target be achieved by 2017.

Senate Bill 375

In August 2008, the legislature passed, and in September 2008, Governor Schwarzenegger signed SB 375 (Steinberg), which addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. By September 30, 2010, CARB was required to assign regional GHG reduction targets for the automobile and light truck sector for 2020 and 2035. The targets are required to consider the emission reductions associated with vehicle emission standards (see SB 1493), the composition of fuels (see Executive Order S-1-07), and other CARB-approved measures to reduce GHG emissions. Regional metropolitan planning organizations will be responsible for preparing a Sustainable Communities Strategy (SCS) within the Regional Transportation Plan (RTP). The goal of the SCS is to establish a development plan for the region that, after considering transportation measures and policies, will achieve the GHG reduction targets, if feasible. If an SCS is unable to achieve the GHG reduction target, a metropolitan planning organization must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. SB 375 provides incentives for streamlining CEQA requirements by substantially reducing the requirements for "transit priority projects," as specified in SB 375, and eliminating the analysis of the impacts of certain residential projects on global warming and the growth-inducing impacts of those projects when the projects are consistent with the SCS or Alternative Planning Strategy. In September 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations.

The targets for the Southern California Association of Governments (SCAG) are an 8% reduction in emissions per capita by 2020 and a 13% reduction by 2035. SCAG prepared its RTP/SCS, which was adopted by the SCAG Regional Council on April 4, 2012. The plan quantified a 9% reduction by 2020 and a 16% reduction by 2035. On June 4, 2012, the CARB executive officer issued an executive order accepting SCAG's quantification of GHG reductions and the determination that the SCS would achieve the GHG emission reduction targets established by CARB. On April 7, 2016, SCAG adopted the 2016–2040 RTP/SCS, which looks to build on the success of the 2012–2035 RTP/SCS. Targets for SCAG region in the updated plan includes an 8% per capita reduction in GHG emissions from automobiles and light trucks by 2020, an 18% reduction by 2035, and a 21% reduction by 2040 compared with 2005 levels (SCAG 2016).

Executive Order S-13-08

Governor Schwarzenegger issued Executive Order S-13-08 on November 14, 2008. The executive order is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. It directs state agencies to take specified actions to assess and plan for such impacts. It directed the CNRA, in cooperation with the California Department of Water Resources, the CEC, California's coastal management agencies, and the Ocean Protection

Council, to request the National Academy of Sciences to prepare a sea level rise assessment report by December 1, 2010. The order also requires the other state agencies to develop adaptation strategies by June 9, 2009, to respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years.

Senate Bill X7-7 (Water Conservation Act of 2009)

The Water Conservation Act of 2009 sets an overall goal of reducing per-capita urban water use by 20% by December 31, 2020. The state was required to make incremental progress toward this goal by reducing per-capita water use by at least 10% by December 31, 2015. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convene, treat, and distribute the water; it also reduces emissions from wastewater treatment.

Senate Bill X1-2

SB X1-2 (April 2011) expanded the RPS by establishing a goal of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers covered by SB 107, SB X1-2 adds local, publicly owned electric utilities to the RPS. By January 1, 2012, the CPUC was required to establish the quantity of electricity products from eligible renewable energy resources to be procured by retail sellers to achieve targets of 20% by December 31, 2013; 25% by December 31, 2016; and 33% by December 31, 2020. The statute also requires that the governing boards for local, publicly owned electric utilities establish the same targets, and the governing boards would be responsible for ensuring compliance with these targets. The CPUC will be responsible for enforcement of the RPS for retail sellers, whereas the CEC and CARB will enforce the requirements for local publicly owned electric utilities.

Executive Order B-16-2012

Executive Order B-16-2012 (March 2012) requires that state entities under the governor's direction and control support and facilitate the rapid commercialization of zero-emission vehicles. It orders CARB, the CEC, the CPUC, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve defined goals by 2015, 2020, and 2025. On a statewide basis, the executive order establishes a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050.

Senate Bill 605 and Senate Bill 1383

On September 21, 2014, Governor Jerry Brown signed SB 605, which required CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state no later than January 1, 2016. As defined in the statute, short-lived climate pollutant means "an agent that has a relatively short lifetime in the atmosphere, from a few days to a few decades, and a warming influence on the climate that is more potent than that of carbon dioxide." SB 605, however, does not prescribe specific compounds as short-lived climate pollutants or add to the list of GHGs regulated under AB 32. In developing the strategy, CARB must complete an inventory of sources and emissions of short-lived climate pollutants in the state based on available data, identify research needs to address any data gaps, identify existing and potential new control measures to reduce emissions, and prioritize the development of new measures for short-lived climate pollutants that offer co-benefits by improving water quality or reducing other air pollutants that impact community health and benefit disadvantaged communities. The draft *Short-Lived Climate Pollution Reduction Strategy* (SLCP Strategy) released by CARB in September 2015 focuses on methane, black carbon, and fluorinated gases, particularly hydrofluorocarbons, as important short-lived climate pollutants. The SLCP Strategy recognizes emission reduction efforts implemented under AB 32 (e.g., refrigerant management programs) and other regulatory programs (e.g., in-use diesel engines, solid waste diversion) along with additional measures to be developed. CARB released the *Proposed Short-Lived Climate Pollution Reduction Strategy* in April 2016 for public review and comment.

Governor Brown signed SB 1383 (Lara) in September 2016. This bill requires CARB to approve and implement a strategy to decrease emissions of short-lived climate pollutants to achieve a reduction in methane by 40%, hydrofluorocarbon by 40%, and anthropogenic black carbon by 50% below 2013 levels by 2030. In response to SB 1383, CARB revised the SLCP Strategy and adopted the *Final Short-Lived Climate Pollutant Reduction Strategy* in March 2017 (CARB 2017).

Senate Bill 350

Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (e.g., heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the California Independent System Operator to those markets, pursuant to a specified process.

Executive Order B-30-15

On April 29, 2015, Governor Jerry Brown issued an executive order that identified an interim GHG reduction target in support of targets previously identified under Executive Order S-3-05 and AB 32. Executive Order B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050, as set forth in Executive Order S-3-05. To facilitate achievement of this goal, Executive Order B-30-15 calls for an update to CARB's Scoping Plan to express the 2030 target in terms of million metric tons of CO_2E. The executive order also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry were required to prepare GHG reduction plans by September 2015, followed by a report on actions taken in relation to these plans in June 2016. The executive order does not require local agencies to take any action to meet the new interim GHG reduction threshold. It is important to note that Executive Order B-30-15 was not adopted by a public agency through a public review process that requires analysis pursuant to State CEQA Guidelines Section 15064.4 and that it has not been subsequently validated by a statute as an official GHG reduction target of the State of California. The executive order itself states it is "not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, departments, entities, officers, employees, or any other person."

Senate Bill 32 and Assembly Bill 197

Enacted by the legislature in August 2016, and signed by the Governor in September 2016, SB 32 and AB 197 are companion bills that will extend GHG reduction targets and make changes to CARB membership; increase legislative oversight of CARB climate change activities; and expand dissemination of GHG, criteria air pollutant, and toxic air contaminant (TAC) emissions data to enhance transparency and accountability. SB 32 requires CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies consisting of at least three members of the Senate and three members of the Assembly to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members, requires CARB to make available and update at least annually via its website emissions of GHGs, criteria air pollutants, and TACs from reporting facilities, and requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

California Air Pollution Control Officers Association

The California Air Pollution Control Officers Association (CAPCOA) is the association of air pollution control officers representing all 35 air quality agencies throughout California. CAPCOA is not a regulatory body, but it has been an active organization in providing guidance in addressing the CEQA significance of GHG emissions and climate change as well as other air quality issues. The GHG analysis set forth in this EIR has been informed, in part, by the expertise and methodologies described in the following documents published by CAPCOA: (1) *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (CAPCOA 2008) and (2) *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* (CAPCOA 2010).

Local

City of Riverside General Plan 2025

The Air Quality Element and the Open Space and Conservation Element of the City General Plan 2025 (City of Riverside 2007) include policies intended to reduce GHGs. Many of the policies described in Section 4.1, Air Quality, and Section 4.12, Energy Conservation, would also apply to GHGs. Additional policies that may be applicable to the Project include the following:

Policy AQ-5.1: Utilize source reduction, recycling, and other appropriate measures to reduce the amount of solid waste disposed of in landfills.

Policy AQ-5.3: Continue and expand use of renewable energy resources such as wind, solar, water, landfill gas, and geothermal sources.

Policy AQ-5.6: Support the use of automated equipment for conditioned facilities to control heating and air conditioning.

Policy AQ-5.7: Require residential building construction to meet or exceed energy use guidelines in Title 24 of the California Administrative Code.

Policy AQ-8.17: Develop measures to encourage that a minimum of 40% of the waste from all construction sites throughout Riverside be recycled by the end of 2008.

City of Riverside Climate Action Plan

In 2014, Riverside was one of 12 cities that collaborated with the Western Riverside Council of Governments (WRCOG) on a Subregional Climate Action Plan (CAP) (WRCOG 2014). The City CAP builds on the WRCOG Subregional CAP, providing a roadmap for the City to achieve

deep GHG emissions through the year 2035 and establishes policies and priorities enabling the City to implement strategies that successfully fulfill the requirements of state initiatives, AB 32, and SB 375 (City of Riverside 2016). The City CAP contains GHG reduction measures organized into the following four primary sectors:

- **Energy** – Measures will increase community-wide building and equipment efficiency and renewable energy use, and promote energy efficiency and renewable energy generation for use supporting municipal operations that support the community.
- **Transportation and Land Use** – Measures will reduce single-occupancy vehicle travel, increase non-motorized travel, improve public transit access, increase motor vehicle efficiency, encourage alternative fuel vehicles, and promote sustainable growth patterns.
- **Water** – Measures will conserve potable water and reduce water demand by the community and municipal operations.
- **Solid Waste** – Measures will reduce solid waste sent to landfills that is generated by the community and municipal operations.

As stated in the City CAP, AB 32 directs California to reduce statewide GHG emissions to 1990 levels by 2020. To achieve these reductions, the CARB recommends that local governments target their 2020 emissions at 15% below "current" levels, consistent with the statewide commitment, to account for emissions growth that has occurred since 1990. The City has adopted a 2020 community-wide GHG emissions target of 2,224,908 MT CO_2E, which represents a 15% reduction from the City's 2010 GHG emissions baseline inventory of 2,617,540 MT CO_2E (City of Riverside 2016). A 15% reduction target is deemed by the City and the WRCOG to be consistent with the statewide AB 32 goal of reducing emissions to 1990 levels and is in line with current best practice for CAPs developed for numerous California cities.

4.5.3 Thresholds of Significance

Office of Planning and Research Guidance

The OPR's Technical Advisory titled *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review* states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008). Furthermore, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what

constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice" (OPR 2008).

Cumulative Nature of Climate Change

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project in the South Coast Air Basin, such as the Project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change.

While the Project will result in emissions of GHGs during construction and operation, no guidance exists to indicate what level of GHG emissions will be considered substantial enough to result in a significant adverse impact on global climate. However, it is generally believed that an individual project is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory as scientific uncertainty regarding the significance of a project's individual and cumulative effects on global climate change remains.

Thus, GHG impacts are recognized exclusively as cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA 2008). Similarly, the Final Statement of Reasons for Regulatory Action on the CEQA Amendments confirm that an EIR or other environmental document must analyze the incremental contribution of a project to GHG levels and determine whether those emissions are cumulatively considerable (CNRA 2009b). Accordingly, further discussion of the Project's GHG emissions and their impact on global climate are addressed below.

State CEQA Guidelines

The CNRA adopted amendments to the State CEQA Guidelines on December 30, 2009, which became effective on March 18, 2010. With respect to GHG emissions, the amended State CEQA Guidelines state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The State CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards" (14 CCR 15000 et seq.). Section 15064.4(b) provides that the lead agency, when assessing the significance of impacts from GHG emissions on the environment, should consider:

- The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project

- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b))

The Initial Study did not scope out any issues related to GHG emissions, and therefore, both thresholds related to GHG emissions are analyzed in this Draft EIR. In addition, Section 15064.7(c) of the State CEQA Guidelines specifies that

> [w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence. (14 CCR 15064.7(c))

Similarly, the revisions to Appendix G, Environmental Checklist Form, which is often used as a basis for lead agencies' selection of significance thresholds, do not prescribe specific thresholds. Rather, the State CEQA Guidelines establish the following two new CEQA thresholds related to GHGs, and these will, therefore, be used to discuss the significance of Project impacts:

- **GHG-1.** Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- **GHG-2.** Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Accordingly, the State CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the State CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009c).

Status of Proposed South Coast Air Quality Management District Thresholds

The South Coast Air Quality Management District (SCAQMD) has not adopted recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of industrial projects. The discussion of proposed SCAQMD thresholds below is included to provide context for the approach taken in this analysis for the Project.

In October 2008, SCAQMD presented to the Governing Board the *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* (SCAQMD 2008). The guidance document was not adopted or approved by the Governing Board. This document, which builds on the previous guidance prepared by CAPCOA (discussed previously), explored various approaches for establishing a significance threshold for GHG emissions. Among the concepts discussed, the document considered a "de minimis," or screening, threshold to

"identify small projects that would not likely contribute to significant cumulative GHG impacts" (SCAQMD 2008). As further explained in this document, "Projects with GHG emissions less than the screening level are considered to be small projects, that is, they would not likely be considered cumulatively considerable" (SCAQMD 2008). The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established.

On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold of 10,000 metric tons CO2e (MTCO2E) per year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency. The SCAQMD has continued to consider adoption of significance thresholds for residential and general development projects. The most recent proposal issued in September 2010 (SCAQMD 2010) uses the following tiered approach to evaluate potential GHG impacts from various uses:

Tier 1 Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2 Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.

Tier 3 Consider whether the proposed project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 $MTCO_2E$ per year threshold for industrial uses would be recommended for use by all lead agencies. Under Option 1, separate screening thresholds are proposed for residential projects (3,500 $MTCO_2E$ per year), commercial projects (1,400 $MTCO_2E$ per year), and mixed-use projects (3,000 $MTCO_2E$ per year). Under Option 2, a single numerical screening threshold of 3,000 $MTCO_2E$ per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4 ***Option 1:*** Reduce emissions from BAU by a certain percentage (currently undefined).

Option 2: Early implementation of applicable AB 32 Scoping Plan measures.

Option 3: Consider whether the proposed project generates GHG emissions in excess of applicable performance standards for the project service population (i.e., population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 $MTCO_2E$ per service population for project level analyses and 6.6 $MTCO_2E$ per service population for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5 Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

The thresholds identified above have not been adopted by the SCAQMD or distributed for widespread public review and comment, and the working group tasked with developing the thresholds has not met since September 2010. The future schedule and likelihood of threshold adoption is uncertain.

The SCAQMD has also adopted rules 2700, 2701, and 2702 that address GHG reductions. These rules address boilers and process heater, forestry, and manure management projects. The Project may ultimately include boilers. If boilers are included in the central plant, then the Project will be required to comply with the applicable SCAQMD rules.

For purposes of this analysis, the Tier 4 Option 1 approach is utilized to determine the significance of the Project's GHG emissions. An emissions reduction of 15% below a 2010 baseline scenario was used as the determining threshold, which is consistent with the City's CAP pursuant to AB 32 reduction targets, discussed below.

City of Riverside CAP

The City has adopted a 2020 community-wide GHG emissions target of 2,224,908 MT CO_2E, which represents a 15% reduction from the City's 2010 GHG emissions baseline inventory of 2,617,540 MT CO_2E. A 15% reduction target is deemed by CARB to be consistent with the AB 32 goal of reducing emissions to 1990 levels (City of Riverside 2016). For purposes of this analysis, the applicable threshold utilized for determining significance is whether or not the Project can reduce emissions by 15% from 2010 levels, consistent with the City's CAP GHG reduction target.

Methodology

Construction. Construction of the Project will result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road hauling and vendor trucks, and worker vehicles. CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 4.1, Air Quality. Additional details regarding these calculations are found in Appendix H.

Operation. To determine whether or not the Project can reduce emissions by 15% from 2010 levels, Project operational scenarios for year 2010 baseline (without accounting for regulatory GHG reductions) and for year 2020 (with regulatory GHG reductions) were compared. Operation of the Project will result in GHG emissions through area sources (primarily landscaping); energy use (natural gas and generation of electricity consumed by the Project); motor vehicle trips to and from

the Project land uses; generation of electricity associated with water supply, treatment, and distribution and wastewater treatment; and GHGs generated by solid waste disposal. Annual GHG emissions from these sources were estimated using CalEEMod. In addition, GHGs will be generated by helicopter transport to the Project site. Helicopter emissions were estimated for a H145 Airbus and a Blackhawk helicopter, which will be representative helicopter types for typical hospital activities and trauma activities, respectively. It was assumed that one typical helicopter and one trauma helicopter will be generated by the Project on a peak-day, which are assumed to be concurrent with the peak operational emissions from other sources described above. Combustion of natural gas for the large boilers of the Project was estimated with a natural gas combustion emissions calculator. Detailed model outputs for construction and operational emissions are included in Appendix H.

4.5.4 Project Features That Will Reduce Impacts

As discussed in Section 6, Public Utilities and Services, of the Canyon Springs Healthcare Campus Specific Plan, in an effort to become a more sustainable hospital campus, Canyon Springs will take into consideration the following sustainable features:

Energy Efficiency

- Design building shells and components such as windows, roof systems and electrical systems to meet California Title 24 Standards for non-residential buildings.
- Install efficient lighting and lighting control systems. Solar or light-emitting diodes (LEDs) will be installed for outdoor lighting. The site and buildings will be designed to take advantage of daylight, such that use of daylight is an integral part of the lighting systems in buildings. Lighting will incorporate motion sensors that turn them off when not in use.
- Use trees and landscaping on west and south exterior building walls to reduce energy use.
- Install light-colored "cool" roofs over office area spaces and cool pavements.
- For future office improvement, install energy-efficient heating and cooling systems, appliances and equipment, and control systems that are Energy Star rated.
- For future office improvement, select refrigerants and heating, ventilation, and air conditioning (HVAC) equipment to minimize or eliminate the emission of compounds that contribute to ozone depletion and global warming. HVAC systems will be designed to meet or exceed the minimum outdoor air ventilation rates described in the American Society of Heating, Refrigeration, and Air Conditioning Engineers standards and/or per California Title 24 requirements.

- Provide vegetative or human-made exterior wall shading devices or window treatments for east, south, and west-facing walls with windows.
- Incorporate Energy Star rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.

Renewable Energy

- Design buildings to have "solar ready" roofs, where feasible, that will structurally accommodate later installation of rooftop solar panels. Building operators providing rooftop solar panels will submit plans for solar panels prior to occupancy.

Water Conservation and Efficiency

- Create water-efficient landscapes in compliance with the City's Water Efficient Landscape and Irrigation Ordinance 19.570.
- Surface parking lots will be landscaped in accordance with City standards to reduce heat island effect.
- Install water-efficient irrigation systems and devices such as soil moisture based irrigation controls and sensors for landscaping according to the City's Water Efficient Landscape and Irrigation Ordinance 19.570.
- Design buildings to be water efficient. Install water-efficient fixtures and appliances (e.g., EPA WaterSense labeled products).
- Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Provide education about water conservation and available programs and incentives to the building operators to distribute to employees.

Solid Waste Measures

- Reuse and recycle construction and demolition waste, including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard.
- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.
- The property operator will provide readily available information provided by the City for employee education about reducing waste and available recycling services.

The Canyon Springs energy and water conservation standards will meet the California Green Building Standards Code (Part 11 of Title 24, California Code of Regulations), EPA Energy

Policy Act of 2005, and Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management) requirements.

Transportation and Motor Vehicles

As discussed in Section 5, Circulation of the Canyon Springs Healthcare Campus Specific Plan, transportation demand management (TDM) is a strategy design to reduce single-occupancy vehicle trips during peak hours. TDM seeks to shift commuters to transportation modes other than cars, and encourage ride-sharing and carpooling programs. The Canyon Springs Healthcare Campus Specific Plan incorporates the following TDM measures:

- Canyon Springs Healthcare will implement two ride-sharing rewards programs in coordination with Inland Empire Transit. Both programs are promoted through informational flyers and at new hire orientation. A TDM coordinator shall be designated by the hospital operator or another party operating within the Canyon Springs Healthcare Campus to facilitate the distribution of information and make sure it remains current. The programs are described as follows:
    - **2 Dollars/Day Program:** Participants log their modes of commuting for 3 months and are awarded points for using alternative modes of transportation such as the Metrolink, bus, bike routes, and carpooling. The program enables employees to connect for carpools. At the end of the 3-month period, participants are awarded gift cards based on the points accrued.
    - **Ride-Share Plus Program:** Participants are provided with tools for carpooling, bicycling, and other alternative modes of transportation. Participants in this program have usually completed the 2 Dollars/Day Program and continue to log hours to accumulate rewards such as a coupon book. The coupon book offers savings at local businesses as well as the ability to register the coupon book online to access discounts at merchants nationwide.
- Preferential parking for carpool vehicles.
- Bicycle parking and shower facilities for employees.
- Local transportation management and roadway improvements.
- On-site amenities such as cafeterias, restaurants, automated teller machines, and other services that would eliminate the need for additional trips.

Please refer also to Table 4.5-7.

4.5.5 Impact Analysis

Threshold GHG-1: Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction Emissions

Construction of the Project will result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road haul trucks, on-road vendor trucks, and worker vehicles. The SCAQMD has not proposed or adopted relevant quantitative GHG thresholds for construction-generated emissions.

The Project will result in approximately 3,751 MT CO_2E for total construction, which amortized over 30 years will be approximately 125 MT CO_2E per year. As with Project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the Project will be short-term in nature, lasting only for the duration of the construction period, and will not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the amortized construction emissions are added to the operational emissions and considered in the operational emissions analysis below.

Operational Emissions

Promulgated regulations that will affect the Project's emissions are accounted for in the Project's GHG calculations detailed in Appendix H and summarized below. In particular, the Pavley Standards, LCFSs, and RPS will be in effect for the AB 32 target year of 2020, and therefore, are accounted for in the Project's emission calculations. The baseline scenario emissions do not include regulations designed to meet AB 32 standards; therefore, these regulations were not included in the GHG emissions calculations for the baseline scenario. Notably, the operational mobile source GHG emissions presented for the Project and 2010 baseline scenario below are conservative since the estimates do not account for potential vehicle trip length reductions for the existing community. These trip length reductions will occur since the Project will provide new medical services in an underserved area of the City and will allow the existing population to travel shorter distances for these services.

Year 2010 Baseline Operational GHG Emissions Scenario

The amortized construction emissions and operational GHG emissions from area sources, electricity usage, motor vehicles, solid waste generation, water consumption, wastewater treatment, helicopters, and stationary sources associated with the Project under year 2010 baseline conditions are shown in Table 4.5-3. The total amount of Project-related GHG emissions for the 2010 baseline scenario without accounting for regulatory developments that

will reduce GHG emissions from direct and indirect sources combined will total approximately 36,109 MT CO_2E, as shown on Table 4.5-3. Additional details regarding these calculations are provided in Appendix H.

Table 4.5-3
Year 2010 "Baseline" Estimated Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2E
	metric tons per year			
Construction (30-year amortization)	124.81	0.01	0.00	125.03
Area	128.84	0.01	0.00	129.79
Energy (natural gas and electricity)	8,209.54	0.32	0.10	8,246.34
Mobile sources	21,419.58	1.35	0.00	21,447.96
Solid waste	1,048.42	61.96	0.00	2,349.59
Water supply and wastewater	530.17	3.42	0.08	628.29
Stationary sources	2,725.23	0.05	0.00	2,728.04
Helicopter	454.42	—	—	454.42
Total	**34,641.01**	**67.12**	**0.18**	**36,109.46**

Notes: Due to rounding, the total amount of CO_2E in the table may not equal the sum of CO_2, CH_4, and N_2O when converted to CO_2E. See Appendix H for detailed results. Annual helicopter emissions are based on landing and takeoff and travel during helicopter routes.
CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2E =carbon dioxide equivalent

Year 2020 Project Operational GHG Emissions Scenario

The amortized construction emissions and operational GHG emissions from area sources, electricity usage, motor vehicles, solid waste generation, water consumption, wastewater treatment, helicopters, and stationary sources associated with the Project under year 2020 conditions are shown in Table 4.5-4. The total amount of Project-related GHG emissions when accounting for applicable regulatory developments that will reduce GHG emissions from direct and indirect sources combined will total approximately 25,863 MT CO_2E, as shown on Table 4.5-4. Construction **MM-AQ-1** and operational measures **MM-AQ-2** through **MM-AQ-6** are incorporated into the estimated Project-generated mitigated GHG emissions to the extent the measures reduce GHG emissions. This results in a 28.38% reduction from the baseline scenario. Thus, with implementation of regulatory developments, the Project's GHG reduction will exceed the City's reduction target of 15%. Since the City CAP was developed consistent with the reduction goals of AB 32 and the Project will be consistent with the City CAP, the Project also be consistent with AB 32. Additional details regarding these calculations are provided in Appendix H.

Table 4.5-4
Year 2020 Operational Greenhouse Gas Emissions with Applicable Regulatory Developments, Design Features, and Mitigation Measures

Emission Source	CO_2	CH_4	N_2O	CO_2E
	metric tons per year			
Construction (30-year amortization)	124.81	0.01	0.00	125.03
Area	126.26	0.00	0.00	127.09
Energy (natural gas and electricity)	6,263.89	0.30	0.09	6,298.58
Mobile sources	13,359.96	0.49	0.00	13,370.19
Solid waste	1,048.42	61.96	0.00	2,349.59
Water supply and wastewater	331.96	2.74	0.07	410.47
Stationary sources	2,725.23	0.05	0.00	2,728.04
Helicopters	454.42	—	—	454.42
Total	**24,434.95**	**65.55**	**0.16**	**25,863.41**

Notes: Due to rounding, the total amount of CO_2E in the table may not equal the sum of CO_2, CH_4, and N_2O when converted to CO_2E. See Appendix H for detailed results. Annual helicopter emissions are based on landing and takeoff and travel during helicopter routes.
CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2E =carbon dioxide equivalent

Project GHG emissions reductions by source and state regulations are shown in Table 4.5-5. Emission reduction measures included in **MM-AQ-1** through **MM-AQ-6** are noted in the table below.

Table 4.5-5
Greenhouse Gas Reductions by Source and Reduction Measures for the Year 2010 Baseline Versus 2020 Project Scenarios

Emission Source	2010 Baseline GHGs	GHG Reduction from State Measures	GHG Reduction from Mitigation	Total GHG Reduction	Net Project GHG Emissions (2020)
	metric tons CO_2E per year				
Construction	125.03	0.00	0.00	0.00	125.03
Area	129.79	0.04	2.66 * Use of low VOC cleaning supplies * Use of electric landscape equipment	2.70	127.09
Energy (natural gas and electricity)	8,246.34	1,574.52 * Renewable Portfolio Standards * 2013 Title 24 Requirements	373.24 * Exceed Title 24 by 10%	1,947.76	6,298.58

Table 4.5-5
Greenhouse Gas Reductions by Source and Reduction Measures for the Year 2010 Baseline Versus 2020 Project Scenarios

Emission Source	2010 Baseline GHGs	GHG Reduction from State Measures	GHG Reduction from Mitigation	Total GHG Reduction	Net Project GHG Emissions (2020)
	metric tons CO_2E per year				
Mobile sources	21,447.96	4,349.61 * Pavley Fuel Efficiency Standards (AB1493) * Title 17 California Code of Regulations (Low Carbon Fuel Standard)	3,728.16 * Increase diversity * Improve pedestrian network	8,077.77	13,370.19
Solid waste	2,349.59	0.00	0.00	0.00	2,349.59
Water supply and wastewater	628.29	129.21 * Renewable Portfolio Standards create an indirect reduction in water use demand that is a result of a decrease in energy intensity. This is due to the fact that water demand is correlated to the energy needed to collect, move, and treat water throughout the state.	88.61 * Landscape palette emphasizing drought tolerant plants * Use of water efficient irrigation techniques * Installation of low flow bathroom faucets, kitchen faucets, toilets, and showers	217.82	410.47
Stationary sources	2,728.04	0.00	0.00	0.00	2,728.04
Total	**35,655.04**	**6,053.38**	**4,192.67**	**10,246.05**	**25,408.99**

Notes: See Appendix H for detailed results.
GHG = greenhouse gas; MT = metric tons; CO_2E =carbon dioxide equivalent

Operational GHG Emission Impact Summary

As previously above, there is no numeric emissions-based threshold by which the City could evaluate whether the Project emissions will exceed a threshold of significance as indicated in Section 15064.4(b)(2) of the State CEQA Guidelines. To evaluate the Project's GHG impacts, the Project's emissions are compared with a 2010 baseline scenario to determine if the development is likely to be consistent with the City's CAP supporting AB 32 in California, which calls for an approximate 15% reduction from 2010 baseline conditions (City of Riverside 2016). As discussed previously, **MM-AQ-1** through **MM-AQ-6** are incorporated into the mitigated Project emissions estimates to the extent the measures reduce GHG emissions.

As summarized in Table 4.5-6, Project GHG emissions will be reduced by approximately 28.38% when compared to the baseline scenario.

Table 4.5-6
Summary of Greenhouse Gas Emissions for 2010 Baseline Versus 2020 Project

Emission Source	2010 Baseline Scenario	2020 Project Scenario (with regulatory requirements and mitigation measures)
	metric tons CO_2E per year	
Construction (30-year amortization)	125.03	125.03
Area	129.79	127.09
Energy (natural gas and electricity)	8,246.34	6,298.58
Mobile sources	21,447.96	13,370.19
Solid waste	2,349.59	2,349.59
Water supply and wastewater	628.29	410.47
Stationary sources	2,728.04	2,728.04
Helicopters	454.42	454.42
Total	**36,109.46**	**25,863.41**
Project Improvement Over Baseline	**28.38%**	

Notes: See Appendix H for detailed results.
GHG = greenhouse gas; CO_2E =carbon dioxide equivalent

The 28.38% reduction shown in Table 4.5-6 is consistent with the target reduction percentage of 15% below 2010 levels based on the City's CAP analysis supporting AB 32. Therefore, impacts related to GHG emissions are considered **less than significant with mitigation incorporated** (from the Air Quality analysis). No further mitigation is required.

Threshold GHG-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

Consistency with AB 32

AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. The City CAP determined that this was equal to 15% below 2010 levels (City of Riverside 2016). The Scoping Plan, approved by CARB on December 12, 2008, provides a framework for actions to reduce California's GHG emissions pursuant to AB 32 and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. As such, the Scoping Plan is not directly applicable to specific projects. Relatedly, in the Final Statement of Reasons for the Amendments to the State CEQA Guidelines, the CNRA observed that

> [t]he [Scoping Plan] may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan. (CNRA 2009b)

Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., LCFS), among others. Table 4.5-7 highlights measures that have been or will be developed under the Scoping Plan and that will be applicable to the Project. The Project will comply with applicable regulations adopted in furtherance of the Scoping Plan to the extent required by law and will not conflict with or obstruct implementation of AB 32.

Table 4.5-7
Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Pavley Motor Vehicle Standards (AB 1493)	T-1	The Project's residents and employees will purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Limit High GWP Use in Consumer Products	H-4	The Project's residents and employees will use consumer products that comply with the regulations that are in effect at the time of manufacture.
Motor Vehicle Air Conditioning Systems – Reduction from Non-Professional Servicing	H-1	The Project's residents and employees will be prohibited from performing air conditioning repairs and required to use professional servicing.
Tire Pressure Program	T-4	Motor vehicles driven by the Project's residents and employees will maintain proper tire pressure when their vehicles are serviced.
Low Carbon Fuel Standard	T-2	Motor vehicles driven by Project's residents and employees will use compliant fuels in the future.
Water Use Efficiency	W-1	The Project includes measures to minimize water use and maximize efficiency.
Green Buildings	GB-1	The Project will be required to be constructed in compliance with state or local green building standards in effect at the time of building construction.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	Motor vehicles driven by the Project's residents and employees will comply with the leak test requirements during smog checks.
Renewable Portfolios Standard (33% by 2020)	E-3	The electricity used by residences in the Project will benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
Energy Efficiency Measures (Electricity)	E-1	The Project will comply with energy efficiency standards for electrical appliances and other devices at the time of building construction.
Energy Efficiency (Natural Gas)	CR-1	The Project will comply with energy efficiency standards for natural gas appliances and other devices at the time of building construction.
Greening New Residential and Commercial Construction	GB-1	The Project's buildings will meet green building standards that are in effect at the time of design and construction.
Greening Existing Homes and Commercial Buildings	GB-1	The Project's buildings will meet retrofit standards when they become effective.

Source: Appendix H.

Consistency with SB 375

SB 375 creates a formal process that builds on the experience of voluntary regional visioning initiatives in California, often referred to as "Regional Blueprints." Furthering the goals of AB 32, SB 375 relies on the regional collaboration by local officials to address California's goals for reducing the portion of the emissions of GHGs that stems from automobile travel (light-duty auto and light-duty trucks only). SB 375 requires local metropolitan planning agencies to prepare a SCS that demonstrates how the region will meet its GHG reduction targets through integrated land use, housing, and transportation planning. More specifically, SB 375 provides CEQA relief for residential and mixed-use projects that are consistent with an approved SCS or Alternative Planning Strategy.

As discussed in Section 4.5.2, Relevant Plans, Policies, and Ordinances, the SCAG is the metropolitan planning agency for the Project area. On April 7, 2016, SCAG adopted the 2016–2040 RTP/SCS. Targets for SCAG region in the updated plan includes an 8% per capita reduction in GHG emissions from automobiles and light trucks by 2020, an 18% reduction by 2035, and a 21% reduction by 2040 compared with 2005 levels (SCAG 2016). The RTP/SCS incorporates goals to concentrate future development and provide residential and mixed use developments in proximity to transit hubs to reduce vehicle miles traveled and, thereby, reduce GHG emissions from light-duty autos and light-duty trucks.

As described in the *Canyon Springs Healthcare Campus and Senior Living Supplemental SB 375 Evaluation* included in Appendix H, the Canyon Springs Business Park Specific Plan (CSBPSP) is consistent with all planning documents, including the RTP/SCS and SB 375. The Project is located within the CSBPSP and primarily consists of land uses permitted by the CSBPSP. Although the proposed residential uses (i.e., Senior Housing and the Independent Living/Memory Care, Assisted Living, and Skilled Nursing Facility, also known as Project Site A and Site B) are not permitted uses within the CSBPSP, the development of residences will not result in more intense uses, in terms of regional transportation planning, than the commercial retail and office uses that would have been permitted on those sites otherwise. Therefore, the Project will also be consistent with the RTP/SCS and SB 375.

Consistency with City of Riverside CAP

As described under Threshold GHG-1, for purposes of this analysis, the applicable threshold utilized for determining significance is whether or not the Project is consistent with the City CAP. The 28.38% reduction shown in Table 4.5-6 is consistent with the target reduction percentage of 15% based on the City's CAP analysis supporting AB 32. Additionally, the Project will be consistent with SB 375. An evaluation of the Project's overall GHG emissions, including all emission sectors (e.g., light-duty auto and light-duty trucks only and other sectors of vehicles)

indicates that the Project is consistent with the applicable threshold adopted by the lead agency, and consistent with the overall reduction targets set forth by AB 32 and applicable Scoping Plan measures. Consequently, the Project will result in a **less than significant** GHG impact.

4.5.6 Mitigation Measures

No additional mitigation measures beyond **MM-AQ-1** through **MM-AQ-6** are required. Please refer to Section 4.2, Air Quality, of the EIR for air quality mitigation measures.

4.5.7 Environmental Impacts after Mitigation Is Incorporated

Emissions reductions from implementation of mitigation measures (and state measures) are depicted in Table 4.5-5. In summary, the Project will comply with the City CAP GHG reduction goals and GHG impacts will be **less than significant**.

4.5.8 References

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4.6 HAZARDS AND HAZARDOUS MATERIALS

The focus of the following discussion and analysis is based on the Initial Study (IS) and Notice of Preparation (NOP) (Appendix A) and comments received during the NOP public comment period. This section:

- Describes the existing hazards and hazardous materials setting
- Identifies relevant regulatory requirements
- Evaluates potentially adverse impacts related to hazards and hazardous materials
- Identifies mitigation measures related to implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project)

The focus of the following analysis per the IS/NOP (Appendix A) is related to the direct or indirect impacts of the potential impacts of the Project being located within 2 miles of the March Air Reserve Base (March ARB) and the potential for resulting safety hazards for people residing or working in the Project area. The IS concluded that potential impacts related to creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; creating 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; handling of hazardous materials within one-quarter mile of an existing or proposed school; being located on a hazardous materials list that could create a significant hazard to the public or the environment; being located within a private airstrip that would result in a safety hazard for people residing or working in the Project area; impairing implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and potential for wildlife fires were found either to have no impact or less than significant impact and are therefore not discussed further in this Draft Environmental Impact Report (EIR).

4.6.1 Setting

Existing Conditions

The Project site is currently vacant and previously graded, but not developed. Based on findings from CHJ Consultants' site reconnaissance of the Project site, dated July 13, 2015, CHJ Consultants' review of aerial photograph, regulatory database research, and review of records available to date, CHJ Consultants concluded no evidence has been found to indicate that the Project site currently has, or in the past has had, significant problems associated with hazardous

waste, hazardous materials, or petroleum products (Appendix C). As such, the Project will not be located on a site that is included in a list of hazardous materials sites.

Airport Land Use Compatibility Zones

The Project site is located approximately 1.6 miles north of the March ARB, within the March ARB land use compatibility plan area. March ARB prepared an Air Installation Compatible Use Zone (AICUZ) Study, which evaluates the effects of aircraft noise, accident potential, and compatible land use and development upon current and future neighbors of the March ARB as a means of protecting public safety and health. As shown in Figure 4.6-1, the Project site is located within Zone D, Flight Corridor Buffer, of the March ARB/Inland Port Airport Land Use Compatibility Plan (LUCP) (Mead & Hunt 2014).

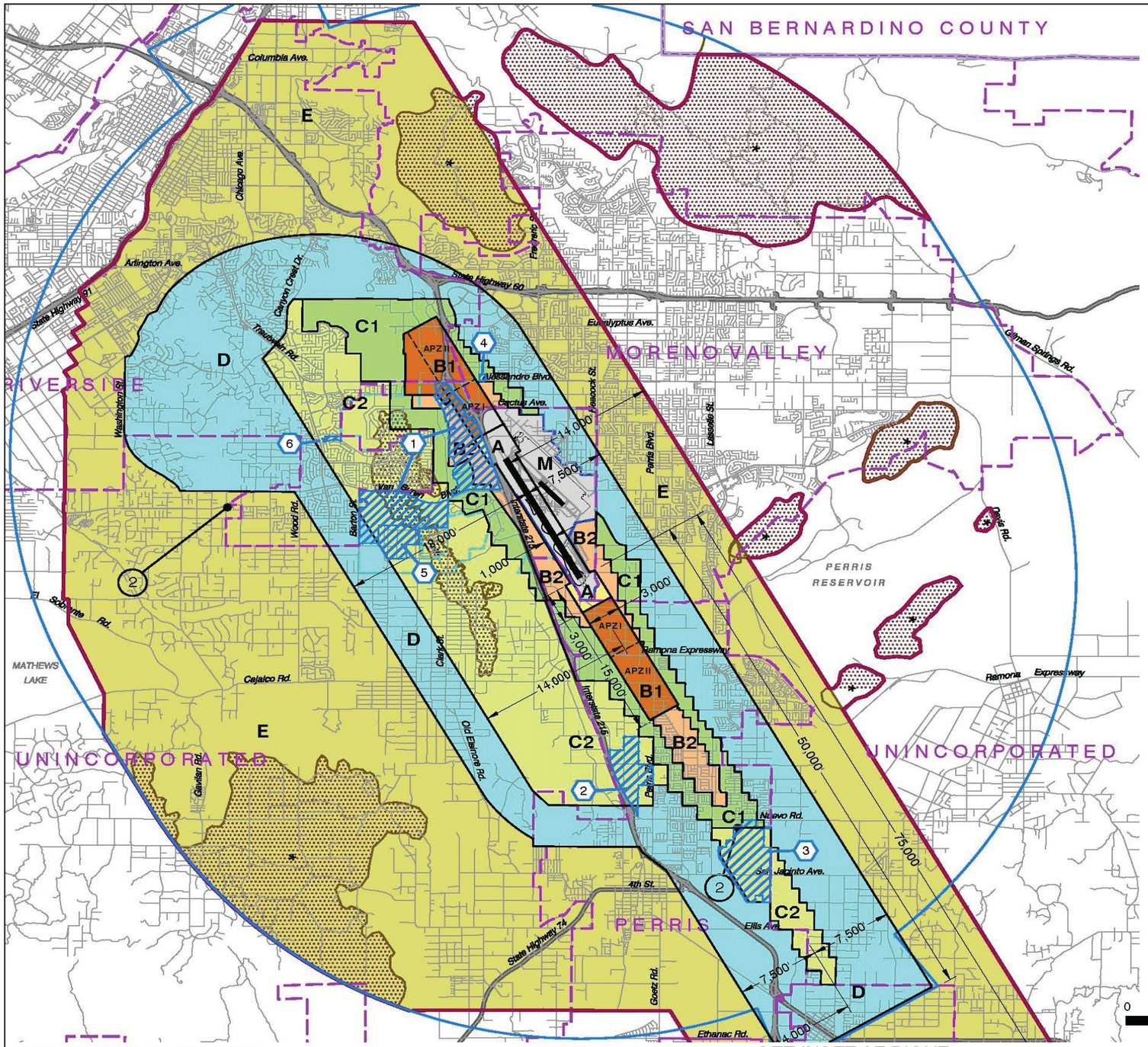
Zone D is intended to encompass areas of moderate to low noise and low accident potential risk within the flight corridor buffer. As summarized in the LUCP, Zone D is intended to encompass other places where aircraft fly below about 3,000 feet above the airport elevation either on arrival or departure. Additionally, it includes locations near the primary flight paths where aircraft noise may regularly be loud enough to be disruptive. Direct overflights of these areas may occur occasionally. Accident potential risk levels in this zone are low (Mead & Hunt 2014). March ARB also identifies Accident Potential Zones (APZs). The Project site is not located within a designated APZ I or APZ II, and instead lies outside of all APZs (March ARB 2005; Mead & Hunt 2014) (see Figure 4.6-2).

4.6.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

Federal Aviation Administration

The Federal Aviation Administration (FAA) requires any structure that is located within close proximity to an airport, or meets other criteria per Code of Federal Regulations Title 14 Part 77.9, to file with the FAA (FAA 2014). Because the Project will be located near the March ARB, the Project applicant has filed Form FAA 7460-1, Notice of Proposed Construction or Alternation, with the FAA. In addition, the FAA requires an additional application for the hospital helistop (Form 7480-1, Notice of Landing Area Proposal). Both applications require precise latitude, longitude, and elevation information, as well as a construction schedule. FAA's determination for both applications typically carries an 18-month expiration date, and one 12-month extension is typically allowable.



LEGEND

Compatibility Zones

- Airport Influence Area Boundary
- Zone A
- Zone B1
- Zone B2
- Zone C1
- Zone C2
- Zone D
- Zone E
- Zone M
- High Terrain Zone
- FAR Part 77 Military Outer Horizontal Surface Limits
- FAR Part 77 Notification Area

Boundary Lines

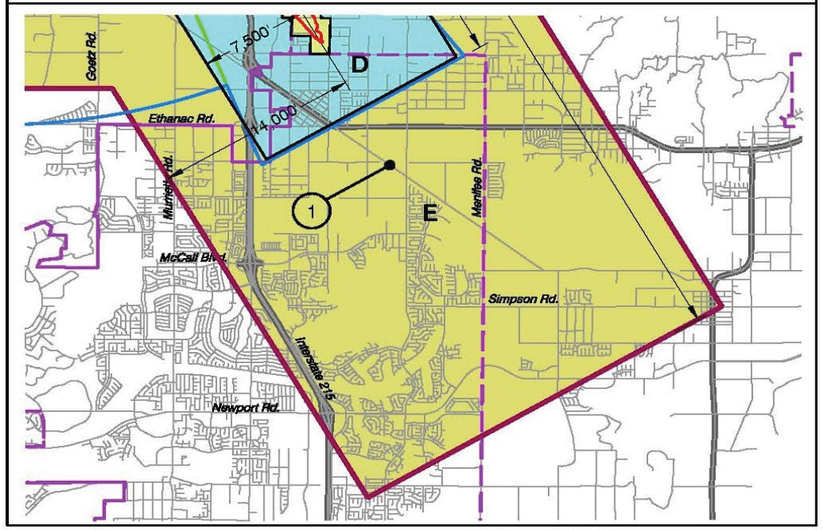
- March Air Reserve Base / Air Force Property
- March Joint Powers Authority Property Line
- County Boundary
- City Limits
- Site-Specific Exceptions (existing local agency commitments to development projects)

1. March JPA: March Business Center/Meridian
2. Perris: Harvest Landing
3. Perris: Park West
4. Moreno Valley: Affordable Housing
5. March JPA: Ben Clark Training Center
6. Riverside: Ridge Crest Subdivision

(1) Point at which aircraft on Runway 32 ILS approach descend below 3,000 feet above runway end. Airport Elevation is 1,535 feet MSL.

(2) Point at which departing aircraft typically reach 3,000 feet above runway end.

INSET



Note:
All dimensions are measured from runway ends and centerlines.

N

0 2 4 MILES

Base map source: County of Riverside 2013

Riverside County
Airport Land Use Commission

March Air Reserve Base / Inland Port Airport
Land Use Compatibility Plan

(Adopted November 13, 2014)

SOURCE: Mead & Hunt, 2014

FIGURE 4.6-1
March ARB/Inland Port Airport Land Use Compatibility Plan

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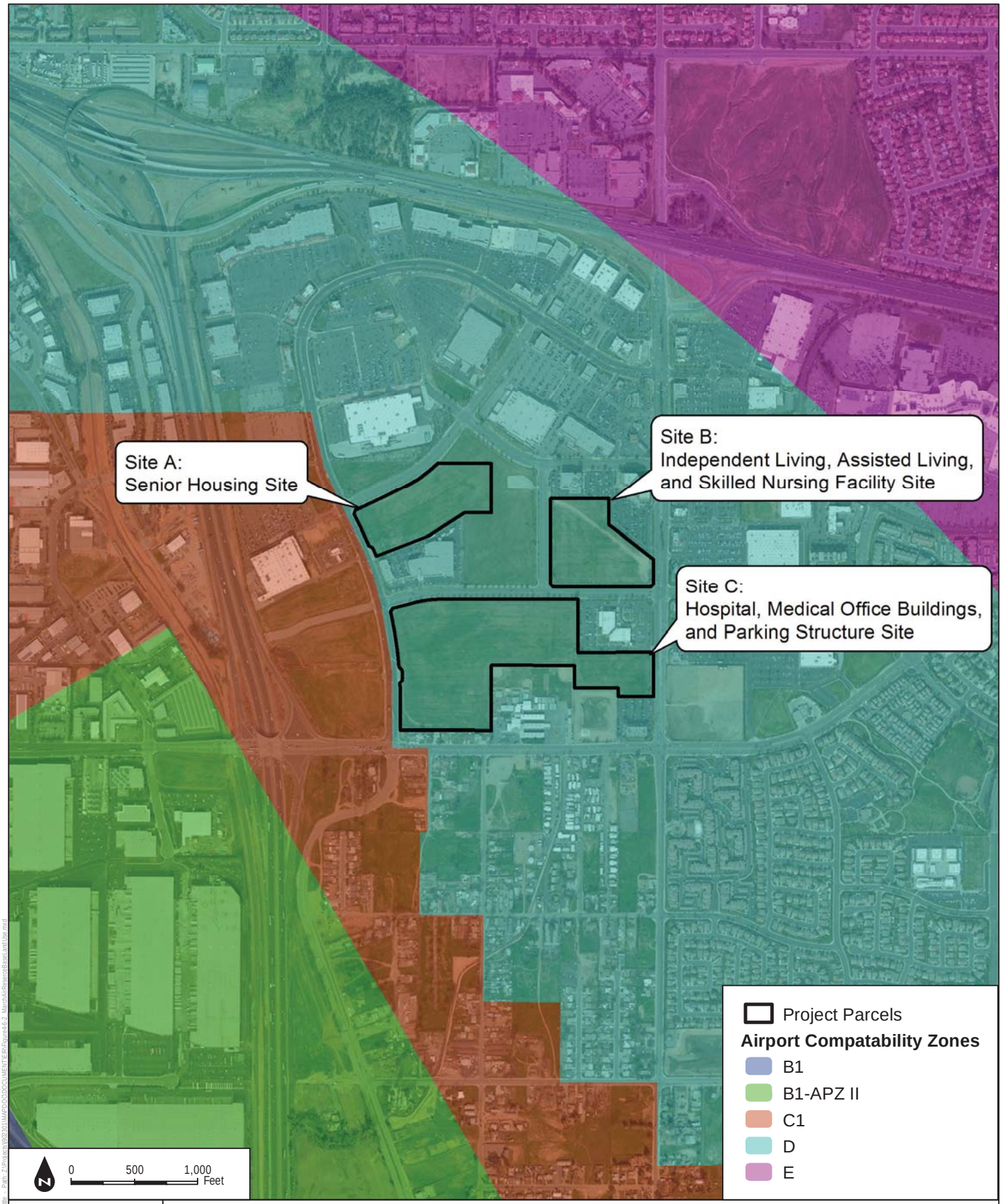

SOURCE: Bing Maps, 2016; County of Riverside, 2016

FIGURE 4.6-2

March Air Reserve Base - Land Use Compatibility Map and Accident Protection Zones

Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan

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The Federal Aviation Regulations, Part 77

Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace, establishes standards for determining obstructions to navigable airspace and the effects of such obstructions on the safe and efficient use of that airspace. The regulations require that the FAA be notified of proposed construction or alteration of objects (whether permanent, temporary, or of natural growth) using FAA Form 7460-1 if those objects will be of a height that exceeds Federal Aviation Regulations (FAR) Part 77 criteria. Further, FAR Part 77 regulations define a variety of imaginary surfaces at certain altitudes around airports. Surfaces include the primary surface, approach surface, transitional surface, horizontal surface, and conical surface. Collectively, the surfaces around an airport define a bowl-shaped area with ramps sloping up from each runway end. FAR Part 77 standards are not absolute height restrictions, but instead identify elevations at which structures may present a potential safety problem. Penetrations of the FAR Part 77 surface generally are reviewed on a case-by-case basis.

The Project will be required to comply with mitigation measure **MM-HAZ-1** to ensure that the City is notified if any Project-related vertical structures or construction equipment will exceed the 1,711 above mean sea level (AMSL) threshold. If structures or equipment will exceed 1,711 AMSL, the FAA Form 7460-1 will be filed, and a building permit will not be issued until the FAA issues a determination.

Department of Defense

The Department of Defense has developed the AICUZ program to ensure that development is compatible with aviation operations in areas on, and adjacent to, military airfields. The AICUZ land use recommendations are based on (1) land use compatibility with exposure to aircraft noise, and (2) safety considerations. Recommended compatible land uses are derived from data on noise contours (noise zones) and safety zones (clear zones and accident potential zones).

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) Subtitle C addresses hazardous waste generation, handling, transportation, storage, treatment, and disposal. It includes requirements for a system that uses hazardous waste manifests to track the movement of waste from its site of generation to its ultimate disposition. The 1984 amendments to RCRA created a national priority for waste minimization. Subtitle D establishes national minimum requirements for solid waste disposal sites and practices. It requires states to develop plans for the management of wastes within their jurisdictions. Subtitle I requires monitoring and contaminant systems for underground storage tanks that hold hazardous materials. Owners of tanks must demonstrate financial assurance for the cleanup of a potential leaking tank.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act is the statutory basis for the extensive body of regulations aimed at ensuring the safe transport of hazardous materials on water, rail, highways, in the sky, or in pipelines. It includes provisions for materials classification, packaging, marking, labeling, placarding, and shipping documentation.

State

California Department of Transportation Division of Aeronautics Heliport Site Approval Permit

Pursuant to California Public Utilities Code (PUC) Section 21664 and California Code of Regulations (CCR) Section 3534, any political subdivision or person planning to construct, establish, or expand a heliport shall apply for the appropriate permit from the department prior to construction, establishment, or expansion. The permit must be made on Department Form DOA-0201, Heliport Site Approval Permit. The application submitted by the Project applicant must include an FAA airspace determination letter, California Environmental Quality Act (CEQA) compliance and Notice of Determination, Riverside County Airport Land Use Commission findings, Riverside City Council approval, and proof of property ownership. The Heliport Site Approval Permit will serve as approval by the California Department of Transportation (Caltrans) to build the helistop on the hospital building.

Caltrans Division of Aeronautics Heliport Permit

The hospital helistop will also require a Heliport Permit to be issued to the Caltrans Division of Aeronautics upon a final inspection by Caltrans Aeronautics' Aviation Safety Officer at the end of construction. This permit will be required to authorize the startup of helicopter flight operations. Pursuant to PUC Section 2166, in order to receive a permit from Caltrans, the following will be considered: (1) the site meets or exceeds the minimum heliport standards specified by Caltrans in its rules and regulations; (2) safe air traffic patterns have been established for the proposed heliport and all existing airports/heliports and approved airport/heliport sites in its vicinity; (3) safe "zones of approach" for the heliport have been engineered in conformity with the provisions of PUC Section 21403 (compliance with FAR Part 77); (4) the Caltrans may impose reasonable permit conditions that it deems necessary to ensure the purposes of PUC Section 21666; and (5) the advantages to the public in the selection of the site of a proposed new heliport (or heliport expansion) outweigh the disadvantages to the environment.

California Code of Regulations

Most state and federal regulations and requirements that apply to generators of hazardous waste are spelled out in CCR, Title 22, Division 4.5. Title 22 contains the detailed compliance requirements for hazardous waste generators, transporters, treatment, storage, and disposal facilities. Since California is a fully authorized state according to RCRA, most RCRA regulations, such as those contained in 40 Code of Federal Regulations (CFR) 260 et seq., have been duplicated and integrated into Title 22. However, since the California Department of Toxic Substances Control regulates hazardous waste more stringently than the U.S. Environmental Protection Agency, the integration of state and federal hazardous waste regulations that make up Title 22 do not contain as many exemptions or exclusions as RCRA. As with the California Health and Safety Code, Title 22 also regulates a wider range of waste types and waste management activities than do RCRA regulations in 40 CFR 260. To aid the regulated community, California compiled the hazardous materials, waste, and toxics-related regulations contained in CCR Titles 3, 8, 13, 17, 19, 22, 23, 24, and 27, into one consolidated CCR Title 26, "Toxics." However, the California hazardous waste regulations are still commonly referred to as Title 22.

California Hazardous Material Management Act

The California Hazardous Material Management Act requires that businesses handling or storing certain amounts of hazardous materials prepare a Hazardous Materials Business Plan, which includes an inventory of hazardous materials stored on site above specified quantities, an emergency response plan, and an employee training program. Businesses that use, store, or handle 55 gallons of liquid, 500 pounds of a solid, or 200 cubic feet of a compressed gas at standard temperature and pressure require Hazardous Materials Business Plans. Plans must be prepared prior to facility operation and are reviewed/updated biennially or within 30 days of a change.

California Hazardous Waste Control Law

California Hazardous Waste Control Law (HWCL). HWCL is the primary hazardous waste statute in the state. HWCL requires a hazardous waste generator, which stores or accumulates hazardous waste for periods greater than 90 days at an on-site facility or for periods greater than 144 hours at an off-site or transfer facility that treats or transports hazardous waste to obtain a permit to conduct such activities. HWCL implements RCRA as a "cradle-to-grave" waste management system in the state. HWCL specifies that generators have the primary duty to determine whether their wastes are hazardous and to ensure their proper management. HWCL also establishes criteria for the reuse and recycling of hazardous wastes used or reused as raw materials. HWCL exceeds federal requirements by mandating source reduction planning and a much broader requirement for permitting facilities that treat hazardous waste. It also regulates the number of types of wastes and waste management activities that are not covered under federal law with RCRA.

California Division of Occupational Safety and Health

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal/OSHA) is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle.

California Fire Code

The 2016 California Fire Code (Title 24, Part 9) is based on the 2015 International Fire Code and includes amendments from the State of California fully integrated into the code. The California Fire Code contains fire safety-related building standards referenced in other parts of Title 24 of the CCR, also known as the California Building Standards Code.

Regional

Riverside County Hazardous Waste Management Plan

The Riverside County Hazardous Waste Management Plan (CHWMP) identifies current and projected future hazardous waste generation and management needs throughout the County of Riverside (County). CHWMP also provides a framework for the development of facilities to manage hazardous wastes (i.e., facility siting criteria) and includes a Households Hazardous Waste Element that is designed to divert household hazardous wastes from County landfills. CHWMP addresses only those hazardous waste issues for which local governments have responsibilities, namely land use decisions. The County and cities are required to implement facility siting policies and criteria within local planning and permitting processes. Accordingly, the City of Riverside (City) implements applicable portions of CHWMP.

In accordance with provisions of the California State Aeronautics Act (PUC, Section 21670 et seq.), the Riverside County Airport Land Use Commission (ALUC) has been assigned lead responsibility for airport land use compatibility planning around each of the public-use and military airports in the County. The fundamental purpose of ALUC is to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses. The Project has been submitted to ALUC and has been assigned case number ZAP1181MA16.

March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan

On November 13, 2014, ALUC adopted the March ARB/Inland Port Airport Land Use Compatibility Plan, hereinafter referred to as the LUCP. The compatibility zones and associated criteria set forth in the LUCP provide noise and safety compatibility protection. The purpose of the LUCP is to promote compatibility between the March ARB and the land uses that surround the joint-use airport, to the extent such areas are not already devoted to incompatible uses. The LUCP regulates future development of new residential dwellings, commercial structures, and other noise- or risk-sensitive uses within the Airport Influence Area based on factors enumerated in the LUCP, including noise, overflight, safety, and airspace protection. As shown on Figure 4.6-1, the Project site is located in Zone D, Flight Corridor Buffer, in the LUCP (Mead & Hunt 2014). Zone D encompasses areas near the primary flight paths where aircraft noise may regularly be loud enough to be disruptive, although potential risk levels in this zone are low (Mead & Hunt 2014). The Project site is not located within a designated APZ I or APZ II, and instead lies outside of all APZs (March ARB 2005; Mead & Hunt 2014).

In accordance with ALUC, the Project will require two applications and two hearings before the commission. The first will be for the overall development proposal due to its proximity to March ARB. The second will be for the hospital helistop, as required by PUC Section 21670 et seq. The Project will require FAA's airspace determination letter prior to appearing before the ALUC. Therefore, the helistop ALUC application will necessarily take place in the future.

March ARB AICUZ

The March ARB AICUZ Study provided an extensive analysis of the effects of aircraft noise, accident potential, and compatible land use and development upon present and future neighbors of the March ARB. The AICUZ program is a means to protect public safety and health, while also protecting the U.S. Air Force's national defense mission, which includes training pilots. The Project site is located in Zone D, Flight Corridor Buffer, in the LUCP (Mead & Hunt 2014) (see Figure 4.6-1). Zone D encompasses areas of moderate to low noise and low accident potential risk within the flight corridor buffer.

452d Air Mobility Wing AICUZ Study

The 452d Air Mobility Wing AICUZ Study is an update to the 1998 March ARB AICUZ Study and presents the noise contours produced by aircraft operations at March ARB. The purpose of the 452d Air Mobility Wing AICUZ Study is to promote compatible land development in areas exposed to aircraft noise and accident potential. Recommendations (e.g., height control of structures near flight paths) from the study should be considered in development projects' planning processes to prevent incompatibilities that might compromise March ARB's ability to fulfill its mission requirements and assist the residents of the surrounding cities to avoid safety hazards.

Land use guidelines set forth by the U.S. Air Force AICUZ program reflect land use recommendations for clear zones, accident potential zones, and applicable noise zones. The guidelines recommend land uses that are compatible with airfields while allowing maximum beneficial use of adjacent properties. This study contains recommendations developed to assist local governments in determining land uses that are compatible with airport environs.

The Project site is located in Zone D, Flight Corridor Buffer, in the LUCP (Mead & Hunt 2014). Zone D encompasses areas of moderate to low noise and low accident potential risk within the flight corridor buffer. The Project site is not located within a designated APZ I or APZ II, and instead lies outside of all APZs (Mead & 2014; Hunt2014) (Figure 4.6-2).

According to the 452d Air Mobility Wing AICUZ Study, the Project site is located outside of the forecasted Community Noise Equivalent Level (CNEL) contour from operations associated with aircraft departing from and/or landing at the March ARB (March ARB 2005).

Local

City of Riverside General Plan 2025

The Public Safety Element of the *City of Riverside General Plan 2025* (General Plan 2025) (City of Riverside 2007) contains objectives and policies related to aircraft operations. The applicable objectives and policies of the City's General Plan 2025 aimed at minimizing impacts related to air traffic are listed below. The Project is consistent with these goals and policies.

Objective PS-4: Protect the community from hazards related to air and ground transportation.

Policy PS-4.1: Minimize the risk of potential hazards associated with aircraft operations at the Riverside Municipal Airport, March Air Reserve Base/March Inland Port and Flabob Airport through the adoption and implementation of the Airport Protection Overlay Zone and the Riverside County Airport Land Use Compatibility Plan.

Policy PS-4.2: When planning for development near airports, anticipate possible increases in airport activity and expansion of airport facilities and services and the effects these changes may have on public safety.

Policy PS-4.6: Ensure that development within airport influence areas is consistent with the Airport Protection Overlay

Zone development standards and the Riverside County Airport Land Use Compatibility Plan.

Policy PS-4.7: Ensure compatible land uses near March Air Reserve Base/March Inland Port through participation of staff and elected officials in the adoption of the March Joint Land Use Study and the Riverside County Airport Land Use Compatibility Plan.

Riverside Municipal Code

Section 9.48 of the Riverside Municipal Code requires that any person who uses or handles hazardous materials or mixtures containing hazardous materials in an amount equal to, or greater than (i) 500 pounds, (ii) 55 gallons, (iii) 200 cubic feet at standard room temperature and pressure for compressed gas, (iv) 10 pounds for organic peroxides, or (v) any known or suspected carcinogen, radioactive material, Class A poison, or Class A or Class B explosive, shall, during the month of January, prepare and submit a completed inventory form and file a hazardous materials business plan with the City's Fire Department.

Title 16 of the Riverside Municipal Code provides minimum standards to safeguard life or limb, health, property, and public welfare by regulating the design, construction, quality of materials, use and occupancy, location and maintenance of buildings, equipment, structures, and grading within the City. Furthermore, Section 16.32.98 discusses the prohibition of stored explosives with the exception of temporary storage for use in connection with approved blasting operations.

Title 17 of the Riverside Municipal Code sets forth rules and regulations that will further implement the goals and objectives of the General Plan 2025 in order to control evacuation, grading, and earthwork construction. In addition, Title 17 establishes the administrative procedures for grading plan approval, issuance of permits, inspections, and penalties for unauthorized grading activity.

4.6.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.), were used to determine the significance of impacts related to public airport safety hazards. Based on the IS (Appendix A) and Appendix G of the State CEQA Guidelines, impacts to safety hazards will be significant if the Project will:

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

4.6.4 Project Features That Will Reduce Impacts

The Project will include a helistop on the hospital building for the rapid transport of sick and/or injured patients to and from hospitals with specific medical capabilities. The primary user will be small emergency medical services (EMS) helicopters operated by regional commercial EMS operators. These companies currently operate twin-turbine Airbus Helicopters H135 and H145 helicopters. However, the helistop will be designed per FAA criteria with dimensions of 65 feet x 65 feet to serve the larger Sikorsky UH-60 Blackhawk helicopter for response to mass casualty events, especially if and when the hospital achieves trauma center status. Proposed flight paths will be to and from the southwest and to and from the northwest for noise-abatement reasons, and also to minimize potential conflicts with March ARB fixed-wing traffic. The following elements (incorporated as part of mitigation measure **MM-HAZ-4)** will be incorporated to ensure that the potential impacts of helicopter use at the Project site is reduced, as well as to ensure the safety of those at the Project site and surrounding area:

- To avoid increasing the risk of bird-aircraft strikes for March ARB or other aircraft transiting the vicinity of the Project site, the following elements will be incorporated into the overall Project:

  ***Project Design*:** The Project will incorporate passive bird exclusion designs into the structural design. Windows, ledges, roof edges, air vents, and other features should be designed to prevent roosting if possible, by incorporating angles of 45 degrees or more. For problem areas such as flat roofs where it is difficult to create slopes, the Project developers will install a physical barrier to perching such as bird spikes, bird netting, or bird wire. The Project operator will maintain these physical barriers by removing accumulated debris to ensure they continue to function. Installation of bird exclusion devices should be by an experienced specialist, and any installation must comply with the Migratory Bird Treaty Act, Endangered Species Act, California Endangered Species Act, and any other applicable federal, state, or local regulations.

  The Project developer and operator will ensure that stormwater drainage does not allow for ponding of water on site or adjacent to the site.

  Project Construction: During construction, all trash will be disposed of in enclosed bins. Additionally, feeding of birds by workers will be prohibited on the Project site.

  Project Landscaping: The Project will avoid the creation of large areas of turf grass or open water. When selecting landscaping trees, bushes, or other ornamental landscaping, the Project will avoid planting any that produce fruit. Bird perching on Project landscaping will be monitored by Project operators, and any landscaping that attracts substantial numbers of birds will be removed and replaced with an alternative plant species that does not attract birds.

- The take-off and landing patterns from the proposed helicopter operations will be designed to avoid conflicts with March ARB's flight operations.

4.6.5 Impact Analysis

Threshold HAZ-1: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

The Project site is located approximately 1.6 miles north of the March ARB within Zone D, Flight Corridor Buffer, of the LUCP (Mead & Hunt 2014). Zone D prohibits uses that will be hazards to flights, which include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations, and land use development that may cause the attraction of birds. Man-made features must be designed to avoid heightened attraction of birds. There are no limitations in Zone D on the number of dwelling units per acre that can be developed (Mead & Hunt 2014). The proposed hospital, medical office buildings, parking structures, senior housing facility, independent living/memory care, assisted living, and skilled nursing facility will not conflict with the uses allowed in Zone D. Although there are currently no tall objects proposed on any of the structures that will cause a hazard to flights, a helistop/helipad is proposed on the rooftop of the hospital. Additionally, there could be the potential for a wireless communication facility permitted on top of parking structures, as outlined in the Canyon Springs Healthcare Campus Specific Plan (Dudek 2017). Depending on the specific locations and top elevations (above mean sea level) for wireless communications antennae, per **MM-HAZ-2**, the Project applicant will submit plans to the FAA if the notification criteria in Part 77 of the FAR are met. However, it is unlikely that wireless communications antennae on either of the proposed parking structures will be tall enough to pose airspace obstruction-clearance issues for the proposed helistop, especially since the parking structures will not be located near the proposed helicopter flight path alignments.

Mitigation measure **MM-HAZ-3** will reduce the risk of bird-aircraft strikes for March ARB or other aircraft transiting the vicinity of the Project site. Additionally, FAR Part 77 establishes standards for determining obstructions to navigable airspace and the effects of such obstructions on the safe and efficient use of that airspace. Objects exceeding FAR Part 77 height limits require an FAA obstruction evaluation review. With regard to the Project, due to the varying site elevations and relative distances from the nearest runway, there is no one absolute height that will apply across the Project site. Regarding the proposed hospital building on Site C, which is the tallest building within the Project by at least 40 feet, based on the distance from the runway, FAA review will be required for any portion of the hospital structure exceeding 1,664 feet AMSL, which will correspond with a maximum building height on the hospital site of approximately 106.4 feet.

Because the Project proposes a maximum hospital building height of approximately 94 feet, which results in a top point elevation of approximately 1,652 feet AMSL, review by the FAA Obstruction Evaluation Service is not required. In the event Project construction or operation requires the use of cranes or other equipment that will exceed 1,676 feet AMSL at Site A, 1,669 feet AMSL at Site B, and/or 1,664 feet AMSL at the hospital, MOB 1, 2, or Parking Structure 2 areas of Site C, or 1,660 feet AMSL at the MOB 3, 4, 5 or Parking Structure 1 areas of Site C, mitigation measure **MM-HAZ-1** requires the applicant to notify the FAA.

Each airport has also established CNEL contours that reflect noise exposure in decibels (dB) to the surrounding area created by aircraft activity. March ARB has three noise contours: 65 dB CNEL, 60 dB CNEL, and 55 dB CNEL, with 65dB CNEL representing the highest noise exposure contour which is found closer to the airport runway. The LUCP identifies noise impact in Zone D to be Moderate to Low mostly within 55 CNEL contour. The Project site is located within Zone D, which is within or near the 55 CNEL contours. Noise-related impacts are addressed in Section 4.9, Noise, of the EIR.

The following additional restrictions apply to Zone D:

- Uses that attract very high concentrations of people in confined areas are discouraged.
- Major spectator-oriented sports stadium, amphitheaters, concert halls are discouraged.
- March ARB must be notified of any land use having an electromagnetic radiation component to assess whether a potential conflict with Air Base radio communications could result. Sources of electromagnetic radiation include microwave transmission in conjunction with a cellular tower, radio wave transmission in conjunction with remote equipment inclusive of irrigation controllers, and other similar electromagnetic radiation emissions.
- Deed notice is appropriate for new development.

The proposed helistop/helipad will consist of an approximately 65-foot by 65-foot touchdown and liftoff area on an elevated metal landing pad with associated gurney ramp, safety net, wind cone, lighting, and painted markings. Primary arrival/departure approaches will be to and from the southwest and to and from the northwest of the helipad. The helipad will be used to accommodate public service helicopters (as large as the Sikorsky Blackhawk, 64.8 feet in length) for community disaster preparedness, as well as EMS helicopters, which are significantly smaller helicopters that will make up the routine users. The number of landings will be dependent upon the number of and nature of medical emergencies requiring helicopter transport. Once the hospital opens and medical emergencies requiring helicopter transport begin to take place, the hospital will begin logging helicopter operations for ongoing reference. Initially, most flights will consist of local patients being transport *out* to hospitals with more intensive or specialized medical capabilities. For the purposes of this analysis, it is assumed

that the hospital will experience an average of 4 landings per month with non-trauma operations. If and when trauma status is achieved, there will be more incoming flights with patients on board so the activity levels are assumed to rise to an average of approximately 30 landings per month.

The Project will be reviewed by the ALUC for consistency with the LUCP, as required. The Project applicant will be required to submit a FAA Form 7460-1 to the FAA to ensure compliance with the FAA standards and airspace obstruction-clearance criteria per Part 77 of the FAA regulations. Additionally, the Project applicant will need to go through the March ARB, the ALUC, the Riverside City Council, and the Caltrans Division of Aeronautics for review and approval of the proposed rooftop helistop. Based on California's Public Utilities Code, the Project requires specific approval by the Riverside City Council before Caltrans' Division of Aeronautics can permit the helistop. Mitigation measures **MM-HAZ-1**, **MM-HAZ-2**, and **MM-HAZ-3** shall be incorporated so that all conditions of approval from the FAA, March ARB, the ALUC, Riverside City Council, and Caltrans Division of Aeronautics are included as part of the Project to ensure safety for patients, seniors, visitors, physicians, or staff residing or working on the Project site. As a result, impacts are considered **less than significant with mitigation incorporated.**

4.6.6 Mitigation Measures

State CEQA Guidelines Section 15126.4 requires EIRs to describe feasible measures that can minimize significant adverse impacts. The following mitigation measures have been evaluated for feasibility and are incorporated in order to reduce potentially significant impacts related to public airport proximity safety hazards for people working or residing at or near the Project site.

MM HAZ-1 A minimum of 45 days prior to submittal of an application for a building permit, the Project developer/applicant shall inform the City of Riverside Planning Division and Building and Safety Division if any Project-related vertical structures or construction equipment will exceed 1,664 feet above mean sea level (AMSL). Prior to construction, if it is determined that any Project-related vertical structures or construction equipment will exceed 1,664 AMSL, then at the beginning of construction, the Project developer/applicant shall submit a Federal Aviation Administration (FAA) Form 7460-1 to the FAA to ensure compliance with the FAA standards and air space obstruction-clearance. If FAA Form 7460-1 is required to be filed, the City shall not issue a building permit until the FAA issues a determination stating that the proposed construction will not be a hazard to air navigation.

MM-HAZ-2 The Project developer/applicant shall submit applicable plans and forms for the proposed helipad/helistop to the March Air Reserve Base (March ARB), Riverside County Airport Land Use Commission (ALUC), Riverside City

Council, and California Department of Transportation Division of Aeronautics for review and approval. All conditions of approval from FAA, March ARB, and Riverside County ALUC shall be adhered to by the Project.

MM-HAZ-3 The following additional March ARB-required risk-reduction Project design features shall be incorporated into Project design:

- **Reduce bird attractants at the Project site.** To avoid increasing the risk of bird-aircraft strikes for March ARB or other aircraft transiting the vicinity of the Project site, the following measures shall be taken:

  ***Project Design*:** When possible, the Project shall incorporate passive bird exclusion designs into the structural design. Windows, ledges, roof edges, air vents and other features shall be designed to prevent roosting if possible, by incorporating angles of 45 degrees or more. For problem areas such as flat roofs where it is difficult to create slopes, the Project developers shall install a physical barrier to perching such as bird spikes, bird netting, or bird wire. The Project operator shall maintain these physical barriers to remove accumulated debris and ensure they continue to function. Installation of bird exclusion devices shall be by an experienced specialist, and any installation shall comply with the Migratory Bird Treaty Act, Endangered Species Act, California Endangered Species Act, and any other applicable federal, state, or local regulations.

  The Project developer and operator shall ensure that stormwater drainage does not allow for ponding of water on site or adjacent to the Project site.

  Project Construction: During construction, all trash shall be disposed of in enclosed bins. Feeding of birds by workers on the Project site shall be prohibited. The prohibition of bird feeding shall be part of the construction personnel training directive as a requirement of daily working conditions. The construction contractor shall be responsible for monitoring and enforcing this requirement.

  Project Landscaping: The Project shall avoid the creation of large areas of turf grass or open water. When selecting landscaping trees, bushes, or other ornamental landscaping, the Project shall avoid planting any that produce fruit. Bird perching on Project landscaping shall be monitored by Project operators, and any landscaping that attracts substantial numbers of birds shall be removed and replaced with another variety.

- The take-off and landing patterns from the proposed helicopter operations shall be designed in a way to avoid conflicts with March ARB's flight operations.

- The helistop shall be designed per FAA criteria with dimensions of 65 feet x 65 feet to serve the larger Sikorsky UH-60 Blackhawk helicopter for response to mass casualty events, especially if and when the hospital achieves trauma center status.
- Proposed flight paths shall be to and from the southwest and to and from the northwest for noise-abatement reasons, as well as to minimize potential conflicts with March AIR/Inland Port fixed-wing traffic.

4.6.7 Environmental Impacts After Mitigation Is Incorporated

Following the implementation of mitigation measures **MM-HAZ-1**, **MM-HAZ-2**, and **MM-HAZ-3**, listed in Section 4.6.6, Project impacts related to public airport proximity safety hazards will be **less than significant**.

4.6.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

City of Riverside. 2007. *City of Riverside General Plan 2025*. November 2007. Accessed July 2016. http://www.riversideca.gov/planning/gp2025program/general-plan.asp.

Dudek. 2017. *Canyon Springs Healthcare Campus Specific Plan*.

FAA (Federal Aviation Administration). 2014. Notice Criteria Tool – Obstruction Evaluation/Airport Airspace Evaluation. Accessed July 10, 2016. https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm.

March ARB (Air Reserve Base). 2005. "Citizen's Brochure for the 452d Air Mobility Wing Air Installation Compatible Use Zone Study." August 2005. Accessed July 8, 2016. http://marchjpa.com/documents/docs_forms/aicuz_2005.pdf.

Mead & Hunt. 2014. *March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan*. Adopted by Riverside County Airport Land Use Commission November 13, 2014.

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4.7 HYDROLOGY AND WATER QUALITY

The focus of the following discussion and analysis is based on the Initial Study and Notice of Preparation (IS/NOP) (Appendix A) and comments received during the IS/NOP public comment period. This section:

- Describes the existing hydrology and water quality setting
- Identifies relevant regulatory requirements
- Evaluates potentially adverse impacts related to water quality, groundwater supplies, drainage patterns, runoff, and stormwater drainage systems
- Identifies mitigation measures related to implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project)

The IS concluded that potential impacts related to flood hazards, including riverine flooding, seiche, tsunami, or mudflow, were less than significant, so these issues will not be discussed further in this Draft Environmental Impact Report (EIR).

4.7.1 Setting

Topography and Drainage

The approximately 50.85-acre Project site consists of three non-contiguous previously graded areas within the Canyon Springs Business Park Specific Plan area in Riverside, California. Located approximately 0.2 miles east of Interstate 215 (I-215) and approximately 0.3 miles south of State Route 60, the Project site is relatively flat-lying with a slight decrease in elevation in the south, southwest, and west directions. The Project site is located within the Santa Ana Region (Region 8) of the California Regional Water Quality Control Board (RWQCB), located within the RWQCB Middle Santa Ana River Watershed Management Area and in the Santa Ana Hydrologic Unit (RWQCB 2016). The Santa Ana River is the receiving water for over 2,700 square miles, including portions of San Bernardino, Riverside, and Orange Counties. The Project site is within the Tequesquite Arroyo Watershed, which covers 19,029 acres consisting of parts of the City of Riverside, Moreno Valley, and unincorporated Riverside County land (Figure 4.7-1).

There are no on-site waterbodies or streams identified by the U.S. Geological Survey National Hydrography Dataset (USGS 2016). However, as discussed in Section 4.3 and shown in Figure 4.3-1, the Project site contains one unnamed, ephemeral drainage feature within the study area. The drainage flows through the northeast section of Site B and originates from an approximately 1.25-acre off-site area to the north consisting of a parking lot and the eastern side of an office building

(Appendix E). During storm events, surface runoff from the parking lot enters the drainage and follows on-site topography toward the south for approximately 253 linear feet before flows fan out and infiltrate at a dirt access road. South of the dirt access road, the drainage becomes a swale and directs flows toward an existing concrete inlet structure along the southern boundary of the Project site. Flows entering the inlet structure are discharged onto Gateway Drive and eventually flow into the City's underground storm drain system (Appendix E).

Stormwater on site and in surrounding areas is collected by drainage swales, inlets, and subsurface storm drains and delivered to two off-site basins located adjacent to the I-215 at the Eucalyptus Avenue interchange and Eucalyptus Avenue near Day Street. The smaller unnamed basin is a desilting basin located adjacent to I-215 at the Eucalyptus Avenue interchange. The larger of the two is the Eucalyptus Avenue Detention Basin, which is located immediately south of the Project site on Eucalyptus Avenue near Day Street. It has a storage capacity of 14.2 acre-feet of water and a maximum 100-year flow release of 160 cubic feet per second (cfs) to the Edgemont Channel. The Edgemont Channel conveys storm flows from the Eucalyptus Avenue Detention Basin to the south–southwest, then west under Old 215 Frontage Road and the I-215 freeway, as shown in green in Figure 4.7-1 (RCFCWCD 1991). From the I-215 freeway the drainage discharges into Sycamore Creek, an ephemeral creek that flows northwest through Sycamore Canyon Wilderness Park and then through Canyon Crest golf course, before meeting Tequesquite Arroyo. The arroyo routes water to the west and underground through the urban part of Riverside before discharging into Reach 3 of the Santa Ana River near Mount Rubidoux (Figure 4.7-1). The Santa Ana River flows for over 100 miles from the San Bernardino Mountains to the Pacific Ocean. Both the Eucalyptus Avenue Detention Basin and the Edgemont Channel are owned and operated by the Riverside County Flood Control and Water Conservation District (RCFCWCD 1991).

Flood Hazards

The Project site is neither within a Federal Emergency Management Agency (FEMA) 100-year flood hazard area nor a dam inundation area (City of Riverside 2012a). The 1% annual chance flood hazard (i.e., the 100-year flood zone) is confined to the Eucalyptus Avenue Detention Basin and the Edgemont Channel, which means the Project site is not located within Zone A of a Flood Insurance Rate Map (FIRM). The 0.2% annual chance flood hazard (i.e., the 500-year flood zone, or FIRM Zone X) extends on either side of the Edgemont Channel, including a small portion of the southwestern corner of the parking area behind the Surgical Center building (Appendix J). In addition, the Project site is not located within a dam inundation zone or a Department of Water Resources awareness floodplain (City of Riverside 2012a).

Project Site

City Boundary

River or Creek

Tequesquite Arroyo (Sycamore Creek) Watershed

CITY OF JURUPA VALLEY

Santa Ana River, Reach 3

Tequesquite Arroyo

City of Riverside Urban Storm Drain System

CITY OF RIVERSIDE

COUNTY OF RIVERSIDE

215

Sycamore Creek

CITY OF MORENO VALLEY

Eucalyptus Ave. Detention Basin

Edgemont Channel

COUNTY OF RIVERSIDE

COUNTY OF RIVERSIDE

N

0 0.5 1 Miles

SOURCE: County of Riverside 2016, ESRI ArcGIS Online: World Imagery

FIGURE 4.7-1

Regional Hydrology

DUDEK

Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan

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Groundwater Resources

Regionally, the Project site is within the 188,000-acre San Jacinto Groundwater Basin as designated by the Department of Water Resources (DWR 2006). The San Jacinto Groundwater Basin underlies San Jacinto, Perris, Moreno, and Menifee Valleys in western Riverside County. This basin is bounded by the San Jacinto Mountains on the east, the San Timoteo Badlands on the northeast, the Box Mountains on the north, the Santa Rosa Hills and Bell Mountain on the south, and unnamed hills on the west. The estimated groundwater storage capacity of the San Jacinto Basin is 3,070,000 acre-feet, with groundwater in storage of about 2,700,000 acre-feet. Estimates of extraction for the entire basin during 1984 through 1999 range from 60,361 to 100,137 acre-feet per year and average about 78,714 acre-feet per year (DWR 2006). The Project site is within the Eastern Municipal Water District (EMWD) service area, which relies on groundwater wells, imported water and recycled water to serve its customers (DWR 2016a). Imported water accounts for approximately 67%, local potable groundwater accounts for approximately 12%, desalted groundwater accounts for approximately 3%, and recycled water accounts for approximately 19% of overall water supply (Appendix M). There are no EMWD wells on or in close proximity to the Project site. The closest EMWD well is an observation (i.e., monitoring) well located at the intersection of Sunnymead Boulevard and Heacock Street, approximately 2 miles east of the Project site (DWR 2016b). The closest monitoring well (obtained from the Western Municipal Water District – Cooperative Well Program) is located at 6287 Day Street, approximately 0.1 miles northeast of the Project site (Appendix C).

According to Appendix C, on-site groundwater was encountered at depths of approximately 48 feet and 40 feet. Based on available groundwater data, a historic high groundwater of 5 feet below ground surface is estimated for the Project site. Groundwater levels in the Perris/Moreno Valley area show a rising trend since the 1990s. Excavations within the March Air Reserve Base, located approximately 1.5 miles to the south, have recently encountered (2013–2014) shallow groundwater (Appendix C). Based on Geotracker data, shallow groundwater flow in the site vicinity is estimated to be to the southwest. Therefore, groundwater levels on site are expected to be between 40 and 50 feet below ground surface but may rise closer to the ground surface if conditions are favorable (long periods of wet weather, increased recharge, decreased basin pumping, etc.).

Water Quality

Water quality is affected by sedimentation caused by erosion, runoff carrying contaminants, and direct discharge of pollutants (point-source pollution). As land is developed, the new impervious surfaces send an increased volume of runoff containing oils, heavy metals, pesticides, fertilizers, and other contaminants (non-point-source pollution) into adjacent watersheds.

Stormwater that accumulates on impervious surfaces, such as parking lots, rooftops, and streets, drains directly and indirectly to waters of the United States. The primary pollutants of concern in urban runoff are sediments, nutrients, heavy metals, organic compounds, trash and debris, oils, bacteria, and pesticides. Construction-related pollutants include sediments, concrete, paints and solvents, and hazardous materials associated with operation and maintenance of heavy equipment.

Under Section 303(d) of the Clean Water Act (CWA), the State Water Resources Control Board is required to develop a list of impaired waters. These are waters that are too polluted or otherwise degraded to meet water quality standards. The Santa Ana RWQCB is required to establish priority rankings and develop action plans, called total maximum daily loads (TMDLs), to improve the water quality of the listed waters. The list includes pollutants causing impairment to receiving waters or, in some cases, the condition leading to impairment. As discussed previously, surface flows from the Project site are discharged to Edgemont Channel, Sycamore Creek, and Tequesquite Arroyo before discharging into Reach 3 of the Santa Ana River near Mount Rubidoux. As shown in Table 4.7-1, the Santa Ana River is impaired with metals and pathogens. There are no approved TMDLs for these metals. Pathogen impairments are being addressed by a TMDL that was adopted by the Santa Ana RWQCB and approved by the U.S. Environmental Protection Agency (EPA) in 2007. This TMDL includes numeric targets (waste load allocations) for urban runoff for both fecal coliform and E. coli (Santa Ana RWQCB Order No. R8-2005-0001).

Table 4.7-1
Receiving Water Beneficial Uses and Clean Water Act Section 303(d)
Water Quality Impairments

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
Santa Ana River Reach 3	Metals and Pathogens	AGR, GWR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	7 miles from site
Santa Ana River Reach 2	Pathogens	GWR, AGR, REC1, REC2, RARE, MUN, WILD, WARM	19 miles from site
Santa Ana River Reach 1	N/A	REC1, REC2, WILD, WARM, MUN	36 miles from site
Tidal Prism-Santa Ana River	N/A	MUN, REC1, REC2, COMM, WILD, RARE, MAR	42 miles from site
Pacific Ocean	N/A	N/A	44 miles from site

Designated Beneficial Uses Definitions:
AGR – Agricultural Supply
GWR – Groundwater Recharge
MUN – Municipal and Domestic Supply

RARE – Preservation of Rare and Endangered Species
REC1 – Contact Water Recreation
REC2 – Noncontact Water Recreation
SPWN – Fish Spawning
WARM – Warm Freshwater Habitat
WILD – Wildlife Habitat
Source: Appendix D

Land Cover and Soils

Soil types and land cover on the Project site have important roles in determining the timing and magnitude of stormwater runoff because both influence the degree to which rainfall is translated into runoff (as opposed to being retained or infiltrated into the ground). The Project site is situated on a relatively flat-lying, slightly dissected land surface formed in very old alluvial fan sediments, which are depicted as early Pleistocene age (Appendix B). The site is graded and mantled with annual grasses; there are currently no impervious surfaces (i.e., pavement or structures).

The U.S. Department of Agriculture (USDA) soil survey and site-specific percolation tests both indicate that the on-site soils are naturally more conducive to runoff than infiltration/recharge. Seven of the eight test pits excavated had a percolation rate of 0.1 inches/hour or less; one test pit in the southwestern corner of the hospital, medical office buildings (MOBs), and parking structure site showed a percolation rate of 2.1 inches/hour (Appendix D). Based on review of the USDA soil survey, the surface soils that have developed on top of the underlying geology consist almost entirely of the Monserate sandy loam[1] and the Cieneba rocky sandy loam (USDA 2016). These soils belong to hydrologic soil groups C and D[2], and have moderate-to-high runoff ratings (USDA 2016).

4.7.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

Clean Water Act

The CWA (33 U.S.C. 1251 et seq.), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain

[1] Loam is soil composed of sand, silt, and clay in relatively even concentration (about 40%-40%–20% concentration, respectively). The term is often qualified to indicate a relative abundance of one constituent over others (e.g., a "sandy loam" is a loam, but where sand is more abundant than silt and gravel).

[2] Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long duration storms. Hydrologic group A has the lowest runoff potential, and hydrologic group D has the highest runoff potential.

the chemical, physical, and biological integrity of the Nation's waters." Key sections of the act are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives and to establish TMDLs for each pollutant/stressor. The water quality impairments relevant to the Project are shown in Table 4.7-1; the only TMDL applicable to the basin is for bacteria.
- Section 401 (Water Quality Certification) requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States, to obtain certification from the state that the discharge will comply with other provisions of the act. No federal approvals are necessary to permit the Project, and thus no CWA Section 401 certification will be required.
- Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program is administered by the State Water Resources Control Board (SWRCB) and the nine RWQCBs (including the Santa Ana RWQCB), which have several programs that implement individual and general permits related to construction activities, stormwater runoff quality, and various kinds of non-stormwater discharges.
- Section 404 establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is jointly administered by the U.S. Army Corps of Engineers and the EPA. The Project is not expected to require a permit under CWA Section 404.

Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level this includes the EPA and the U.S. Army Corps of Engineers. At the state level, with the exception of tribal lands, the California EPA and its sub-agencies, including the SWRCB, have been delegated primary responsibility for administering and enforcing the CWA in California.

Federal Antidegradation Policy

The federal antidegradation policy is designed to protect water quality and water resources. The policy directs states to adopt a statewide policy that includes the following primary provisions: (1) existing instream uses and the water quality necessary to protect those uses shall be maintained and protected; (2) where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or

social development; and (3) where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) is the principal federal law in the United States that ensures safe drinking water for the public. Pursuant to the SDWA, the EPA is required to set standards for drinking water quality and oversee all states, localities, and water suppliers who implement these standards. SDWA applies to every public water system in the United States. There are currently more than 160,000 public water systems providing water to almost all Americans. The SDWA does not cover private wells. The SDWA requires the EPA to establish National Primary Drinking Water Regulations for contaminants that may cause adverse public health effects. The regulations include both mandatory levels and non-enforceable health goals (maximum contaminant level goals) for each included contaminant. In California, the SWRCB Division of Drinking Water has the primary enforcement authority (primacy) to enforce the federal SDWA and is responsible for the regulatory oversight of about 8,000 public water systems throughout the state.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (codified in the California Water Code, Section 13000 et seq.) is the primary water quality control law for California. Whereas the CWA applies to all waters of the United States, the Porter-Cologne Act applies to waters of the state, which includes isolated wetlands and groundwater in addition to federal waters. It is implemented by the SWRCB and the nine RWQCBs. In addition to other regulatory responsibilities, the RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the state[3] could cause pollution or nuisance, including impacts to public health and the environment.

The act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. California Water Code Section 13260 subdivision (a) requires that any person discharging waste or proposing to discharge waste, other than to a community sewer system, that could affect the quality of the waters of the state, to file a Report of Waste Discharge with the applicable RWQCB. For discharges directly to surface water (waters of the United States), an NPDES permit is required, which is issued under both state and federal law; for other types of discharges, such as waste discharges to land (e.g.,

[3] "Waters of the state" are defined in the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050(e)).

spoils disposal and storage), erosion from soil disturbance, or discharges to waters of the state (such as groundwater and isolated wetlands), waste discharge requirements (WDRs) are required and are issued exclusively under state law. WDRs typically require many of the same best management practices (BMPs) and pollution control technologies as required by NPDES-derived permits.

Basin Planning

The California legislature has assigned the primary responsibility to administer and enforce statutes for the protection and enhancement of water quality, including the Porter-Cologne Act and portions of the CWA, to the SWRCB and its nine RWQCBs. The SWRCB provides state-level coordination of the water quality control program by establishing statewide policies and plans for implementation of state and federal regulations. The nine RWQCBs throughout California adopt and implement Basin Plans that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. The Santa Ana RWQCB is responsible for the protection of the beneficial uses of waters within the watershed of the Santa Ana River, including the Project area.

The *Water Quality Control Plan for the Santa Ana River Basin* (Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code, Sections 13240–13247). The Santa Ana RWQCB Basin Plan must conform to the policies set forth in the Porter-Cologne Act as established by the SWRCB in its state water policy. The Porter-Cologne Act also provides the RWQCBs with authority to include within their basin plan water discharge prohibitions applicable to particular conditions, areas, or types of waste. The *Water Quality Control Plan for the Santa Ana River Basin* is continually being update to include amendments related to implementation of TMDLs, revisions of programs and policies within the Santa Ana RWQCB region, and changes to beneficial use designations and associate water quality objectives. Table 4.7-1 shows the beneficial uses and impairments for the Project's receiving waters, and Table 4.7-2 shows select numeric water quality objectives for the Santa Ana River. For all receiving waters other than Reach 3 of the Santa Ana River, numeric objectives have not been established and thus narrative objectives apply.

Table 4.7-2
Water Quality Objectives for the Project's Receiving Waters (mg/L)

Receiving Waters	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand
Santa Ana River Reach 3	700	350	110	140	10	150	30
Santa Ana River Reach 2	—	—	—	—	—	—	—
Santa Ana River Reach 1	—	—	—	—	—	—	—

Table 4.7-2
Water Quality Objectives for the Project's Receiving Waters (mg/L)

Receiving Waters	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand
Tidal Prism-Santa Ana River	—	—	—	—	—	—	—
Pacific Ocean	—	—	—	—	—	—	—

Source: RWQCB 2016
Notes: mg/L = milligrams per liter; Dashes in the table represent that numeric objectives have not been established, and thus narrative objectives apply to these waterways.

NPDES and WDR Permits

The NPDES and WDR programs regulate construction, municipal, and industrial stormwater and non-stormwater discharges under the requirements of the CWA and the Porter-Cologne Water Quality Control Act. The construction stormwater program is administered by the SWRCB, while the municipal stormwater program and other WDRs are administered by the Santa Ana RWQCB. Table 4.7-3 lists the water quality-related permits that will apply to the Project, each of which is further described below.

Table 4.7-3
State and Regional Water Quality-Related Permits and Approvals

Program/Activity	Order Number/ NPDES Number	Permit Name	Affected Area
Construction stormwater program	2009-0009-DWQ/ CAS000002, as amended	NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit)	Statewide
Municipal stormwater program	Santa Ana RWQCB Order No. R8-2010-0033/ CAS618033	Waste Discharge Requirements for the Riverside County Flood Control and Water Conservation District, the County of Riverside, and the Incorporated Cities of Riverside County within the San Ana Region (MS4 Permit for Santa Ana Region)	Santa Ana region within Riverside County
Non-potable uses of recycled water	SWRCB Order No. 2014-0090-DWQ	General Waste Discharge Requirements for Recycled Water Use	Statewide
Non-stormwater discharge to land	SWRCB Order No. 2003-0003-DWQ	Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (WDR for Discharge to Land)	Statewide
Non-stormwater discharge to surface water	Santa Ana RWQCB Order No. R8-2015-0004 / CAG998001)	General Waste Discharge Requirements for Discharges to Surface Water that Pose an Insignificant (De-Minimus) Threat to Water Quality	Santa Ana region

Notes: NPDES = National Pollutant Discharge Elimination System; MS4 = municipal separate storm sewer system; WDR = Waste Discharge Requirement

Construction General Permit (SWRCB Order 2009-0009-DWQ, as amended)

For stormwater discharges associated with construction activity in the State of California, the SWRCB has adopted the General Permit for Storm Water Discharges associated with Construction and Land Disturbance Activities (Construction General Permit) to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects in which construction activity disturbs 1 acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires the development and implementation of a stormwater pollution prevention plan (SWPPP), which will include and specify water quality BMPs designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Permit, and the SWPPP must be prepared and implemented by qualified individuals as defined by the SWRCB.

According to Project plans, the area of soil disturbance is expected to be 50.85 acres, and therefore, the Project will require coverage under the Construction General Permit.

Riverside County Municipal Separate Storm Sewer System Permit (Santa Ana RWQCB Order No. R8-2010-0033/CAS618033)

Within the purview of the Municipal Separate Storm Sewer System (MS4) permit requirements, the municipalities (permittees) of Riverside County have jurisdiction over and/or maintenance responsibility for stormwater conveyance systems that they own. The 2014 Drainage Area Management Plan was developed by the permittees in response to the requirements of the MS4 permit. It contains model programs and guidance for complying with the MS4 permit requirements. The permittees, which are the Riverside County Flood Control and Water Conservation District (RCFCWCD), the County of Riverside, and the incorporated cities of Riverside County within the Santa Ana Region (including the City of Riverside), developed a water quality management plan (WQMP) guidance document that defines activities covered under the MS4 permit and describes how developers are to comply with its requirements. General Plan policies and Municipal Code provisions have been adopted and/or updated to meet MS4 permit requirements and establish necessary legal authority. This combination of programs, policies, and legal authority is used to ensure that pollutant loads resulting from urbanization are properly controlled and managed.

The Project is required to develop a WQMP to demonstrate its compliance with the MS4 permit and show that the proposed combination of water quality BMPs and low impact development (LID) features adequately meets the required design capture volume and other performance criteria. The preliminary WQMP is included as Appendix D of this EIR.

General Waste Discharge Requirements for Discharges to Surface Water that Pose an Insignificant (De-Minimus) Threat to Water Quality (Santa Ana RWQCB Order No. R8-2015-0004/CAG998001)

This general order (de-minimus permit) applies to projects that discharge to surface waters where the discharge has an insignificant threat to water quality. These are typically low-volume discharges with minimal pollutant concentrations such as well water discharges, small temporary dewatering projects, and hydrostatic testing discharges of clear water. To receive coverage under this general permit, the discharger must submit a Notice of Intent to the RWQCB and describe the activity with sufficient detail to demonstrate that discharge will comply with the discharge prohibitions, effluent limitations, and receiving water limitations outlined in the order. The Project will only require coverage under this order for discharges to surface water that are not already covered under the Construction General Permit (SWPPP) and/or MS4 permit (WQMP).

The Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (SWRCB Order No. 2003-0003-DWQ)

This general order applies to projects that discharge to land where the discharge has a low threat to water quality (SWRCB 2003). These are typically low-volume discharges with minimal pollutant concentrations such as well water discharges, small temporary dewatering projects, and hydrostatic testing discharges of clear water. The primary difference between this permit and the permits under the NPDES program is the destination of the water. This permit regulates discharges to land, and the previous sections discuss discharges to storm drains or receiving waters. For instance, if a dewatering discharge will be piped to an infiltration basin during construction, this permit could apply.

Local

Riverside Municipal Code

The Riverside Municipal Code (City of Riverside 1998) contains several provisions regulating the discharge of stormwater and changes in hydrology. For example, Title 17 of the Municipal Code governs grading activities in the City. Pursuant to the provisions of Title 17, the Project will require a grading permit. To obtain a permit, applicants must supply a grading plan, interim erosion control plan, preliminary soils report, payment of review fee, and applicable California Department of Fish and Wildlife forms. The Grading Code also requires that applicants document their compliance with new development BMPs required by the County Drainage Area Management Plan (described previously under the description of the County MS4 Permit). If applicable (i.e., if land disturbance exceeds 1 acre), applicants must also demonstrate compliance with the Construction General Permit described previously.

In addition, Title 14 of the Riverside Municipal Code, Public Utilities, Chapter 14.12, regulates discharges into the City's sewer and storm drain systems and implements the City's requirements

under the MS4 permit. Among other things, the chapter prohibits discharges to the City's sewer and storm drain systems that contain pollutants or that would impair the operation of those systems. The City requires that pollutants of concern be treated by a California Stormwater Quality Association-approved treatment BMP with medium to high removal rates. Additionally, the City's enforcement authority to declare violations, apply penalties, and impose stop-work orders, monitoring requirements, and other enforcement mechanisms, is provided in Chapter 14.12. The City requires that discharge of industrial wastewater[4] into the City's sewer be pre-treated on site prior to discharge to the sewer system and authorizes issuance of industrial user permits.

City of Riverside General Plan 2025

The Open Space and Conservation Element of the *City of Riverside General Plan 2025* (General Plan 2025) (City of Riverside 2012b) includes the following policies related to hydrology. The following City's General Plan 2025 policies are applicable to the Project.

Objective OS-10: Preserve the quantity and quality of all water resources throughout Riverside.

Policy OS-10.2: Coordinate plans, regulations, and programs with those of other public and private entities, which affect the consumption and quality of water resources within Riverside.

Policy OS-10.4: Develop a recommended native, low-water use, and drought-tolerant plant species list for use with open space and park development. Include this list in the landscape standards for private development.

Policy OS-10.6: Continue to enforce RWQCB regulations regarding urban runoff.

Policy OS-10.7: Work with the RWQCB in the establishment and enforcement of urban runoff water quality standards.

Policy OS-10.9: Evaluate development projects for compliance with NPDES requirements, and require new development to landscape a percentage of the site to filter pollutant loads in stormwater runoff and provide groundwater percolation zones.

[4] Industrial wastewater refers to all water containing wastes of the community, excluding domestic wastewater, and includes all wastewater from any producing, manufacturing, processing, institutional, governmental, commercial, restaurant, service, agricultural, or other operation.

4.7.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the State California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), were used to determine the significance of impacts related to hydrology and water quality. Based on the IS/NOP (Appendix A) and Appendix G of the State CEQA Guidelines, impacts to hydrology and water quality will be significant if the Project results in any of the following. The Project's potential to exceed other thresholds not listed below related to water quality, 100-year flood hazard areas, and flooding due to failure of a dam or levee were analyzed as part of the IS/NOP (Appendix A), and it was determined that the Project will not result in a significant impact under any of these thresholds. Therefore, these thresholds are not discussed further in the EIR.

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

4.7.4 Project Features That Will Reduce Impacts

The Project design includes the following water quality improvements/BMPs in accordance with RCFCWCD criteria and preferred treatment hierarchy required by the Riverside County MS4 permit to improve overall site permeability and reduce off-site drainage flow. Project design features relevant to hydrology and water quality, as listed in Section 2.5.3 of this EIR, include the following:

- Curbs and gutters will collect runoff and convey to bioretention units and/or detention basins and comply with Riverside Airport Land Use Commission requirements.
- Parking lots will be designed to minimum required pavement width, according to City guidelines.

- Vegetated bioswales will be used to the maximum extent possible to achieve filtration and natural treatment of the stormwater runoff from rooftops.
- Where bioswales cannot be used to treat runoff, stormwater runoff from proposed structure roofs and paved areas will be conveyed to bioretention units and/or detention basins (in compliance with Riverside Airport Land Use Commission) to provide treatment before being discharged into the underground storm drain system.
- Stormwater drainage from loading dock areas will be collected and treated prior to discharge off site.
- On-site soils within landscaped areas will be scarified.
- The City's Water Efficient Landscaping and Irrigation Ordinance (Chapter 19.570) will be adhered to for landscaped areas. Additional native trees and large shrubs will be planted where needed. New trees will be planted according to the proposed Canyon Springs Healthcare Campus Specific Plan design guidelines for the area required per tree. The landscaping will meet the City's approved landscape materials list as outlined in the Specific Plan.
- Drought-tolerant landscaping will also be required to ensure minimal irrigation water use, thus helping to conserve water resources.
- Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Rain shutoff devices to prevent irrigation during and after precipitation will be included in the design. The irrigation system will include control mechanisms to allow staff to adjust water supplies to areas based on need.
- Stormwater conveyance system inlets will include language indicating that water flows to the local water resource.
- Trash receptacles will be provided on site with signage.
- Fire sprinklers will be designed to discharge into the sanitary sewer.
- Bioswales, bioretention units and/or detention basins, parking lots, and trash pickup will be maintained as part of the ongoing landscaping maintenance costs.
- Design buildings to be water efficient. Install water-efficient fixtures and appliances (e.g., EPA WaterSense labeled products).
- Provide education about water conservation and available programs and incentives to the building operators to distribute to employees.

Furthermore, in compliance with the NPDES, the applicant will prepare a SWPPP that specifies BMPs to be implemented during Project construction to prevent pollutants from contacting

stormwater and control erosion and sedimentation. The SWPPP will be prepared and submitted to the RWQCB for review and approval prior to the start of construction.

Finally, the hazardous materials precautions and BMPs included in the Project design, as discussed in Section 4.6, will likewise minimize the potential for release of fuels and other hazardous materials to the storm drain system. The BMPs include total enclosure and/or secondary containment of all trash and areas that store or transport hazardous materials, provision of hazardous materials spill kits in the event of accidental release, the preparation of a hazardous materials business plan for each phase of the Project, and a spill prevention control and countermeasures plan for petroleum products in storage tanks.

4.7.5 Impact Analysis

Threshold HYD-1: Would the project violate any water quality standards or waste discharge requirements?

Construction

Construction activities such as site clearing and grading, excavation, and trenching associated with the Project are expected to result in land disturbance of up to 50.85 acres in incremental steps as phased construction of the area proceeds; for purposes of this analysis, however, it has been assumed that all construction will occur in a single phase. An improperly managed construction site can result in temporary turbidity increases in receiving waters due to suspended soil particles and sediment in stormwater runoff, increases in dust and wind erosion, fluid spills or leaks from heavy equipment and machinery, and/or introduction of other pollutants into local waterways. Pollutants typically present on construction sites include petroleum products and heavy metals from equipment, and products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Construction activities could result in water quality degradation if runoff entering receiving waters contains pollutants in sufficient quantities to exceed water quality objectives defined in the Basin Plan or TMDLs established under CWA Section 303(d). The only TMDL applicable to the Project site relates to bacteria, which is not a pollutant typically generated by construction activities. Impacts from construction-related activities will generally be short term and of limited duration in any one location.

Because implementation of the Project will collectively require construction activities resulting in a land disturbance of more than 1 acre, the Project applicant is required to obtain coverage under the Construction General Permit (SWRCB Order 2009-0009-DWQ, as amended; SWRCB 2010), which pertains to pollution from grading and Project construction. Coverage under the Construction General Permit requires a qualified individual (as defined by the SWRCB) to prepare a SWPPP to address the potential for construction-related activities to contribute to pollutants within the Project's receiving waterways. The SWPPP must describe the type, location, and function of stormwater BMPs to be implemented, and must demonstrate that the

combination of BMPs selected are adequate to meet the discharge prohibitions, effluent standards, and receiving water limitations contained in the Construction General Permit.

The following list includes examples of construction water quality BMPs that are standard for most construction sites subject to the Construction General Permit:

- Silt fences and/or fiber rolls installed along limits of work and/or the project construction site
- Stockpile containment and exposed soil stabilization structures (e.g., visqueen, fiber rolls, gravel bags, and/or hydroseed)
- Runoff control devices (e.g., fiber rolls, gravel bag barriers/chevrons) used during construction phases conducted during the rainy season
- Wind erosion (dust) controls
- Tracking controls at the site entrance, including regular street sweeping and tire washes for equipment
- Prevention of fluid leaks (inspections and drip pans) from construction vehicles
- Materials pollution management
- Proper waste/trash management
- Regular inspections and maintenance of BMPs

These BMPs will be refined and/or added to as necessary by a qualified SWPPP professional to meet the performance standards in the Construction General Permit.

To obtain coverage under the Construction General Permit, the Project applicant must submit to the SWRCB a Notice of Intent and associated permit registration documents, including a SWPPP and site plan, and must obtain a Waste Discharge Identification Number. As a condition of grading permit approval, the Project applicant is required to also provide the Notice of Intent and Waste Discharge Identification Number to the City, and must include the water quality BMPs on construction plans and drawings. In addition, all earthwork, grading, trenching, backfilling, and compaction operations must be conducted in accordance with Riverside Municipal Code, Title 17 (Grading) of the Municipal Code, and applicable General Plan policies.

The BMPs required for coverage under the Construction General Permit and the erosion control provisions contained in City ordinances will require measures to prevent construction-related contaminants from reaching impaired surface waters and contributing to water quality impacts within the Edgemont Channel and downstream receiving waters, including Reach 3 of the Santa Ana River. For these reasons, water quality impacts resulting from construction-related activities and ground disturbances will be **less than significant**, and no mitigation measures are required.

Post-Construction

The increase in impervious area created by the Project, as well as on-site activities and uses, could alter the types and levels of pollutants that could be present in Project site runoff associated with Project operation. Runoff from building rooftops, walkways, parking lots, and landscaped areas can contain non-point-source pollutants such as oil, grease, heavy metals, pesticides, herbicides, fertilizers, and sediment. Concentrations of pollutants carried in urban runoff are extremely variable, depending on factors such as the following:

- Volume of runoff reaching the storm drains
- Time since the last rainfall
- Relative mix of land uses and densities
- Degree to which street and parking area cleaning occurs

Under existing conditions, stormwater that is not infiltrated moves as sheet flow toward the nearest storm drain or detention basin, and if rainfall is sufficiently intense and/or long lasting, may begin to pond in various depressions on site. The Phase I Environmental Site Assessment found no environmental concerns associated past uses and conditions of the site (Appendix C). Significant runoff from the site during intense and/or long-lasting rain events is unlikely to contain elevated pollutant loads, other than possibly sediment or elevated turbidity.

Under proposed conditions, the surface soils and weeds that are now exposed to stormwater runoff will be stripped and replaced with engineered fills that meet geotechnical specifications, prepared soils that meet landscape needs, and most of the site will be developed with structures and parking lots. The site will become about 66% impervious due to 1,464,831 square feet (33.6 acres) of buildings, pedestrian paths, parking lots, and loading/unloading zones (Appendix D). The remainder will consist of landscaping and bioretention areas. The stormwater drainage system will consist of roof downspouts, drain pipes, curb gutters, and other features that will collect stormwater runoff and convey it to stormwater BMPs such as permeable pavers and bioretention features.

The MS4 Permit requires the Project applicant to incorporate source control measures, LID controls, and treatment control measures into the Project's design to reduce potential impacts to water quality, which are summarized in Section 4.7.4. Appendix D includes detailed calculations that size each bioretention feature according to the volume of stormwater runoff in each drainage management area (DMA) that will be produced in a design storm event (i.e., the 85th percentile, 24-hour rain event, which is 0.63 inches). There are six DMAs for the Project, each corresponding to a discrete construction phase/area (Figure 4.7-2). Each drainage area is described as follows, including the treatment control BMPs that address stormwater quality:

- **DMA 1 (Site A):** This DMA will utilize bioretention areas in the landscaping surrounding the parking lot and senior housing areas, with additional bioretention areas

proposed to store the Hydrologic Condition of Concern (HCOC) volume.[5] Stormwater from the building will be conveyed via roof drains and outlet to the parking lots where it will sheet flow into the bioretention areas. Runoff from the parking and drive aisles will sheet flow and enter into the bioretention areas via curb cuts.

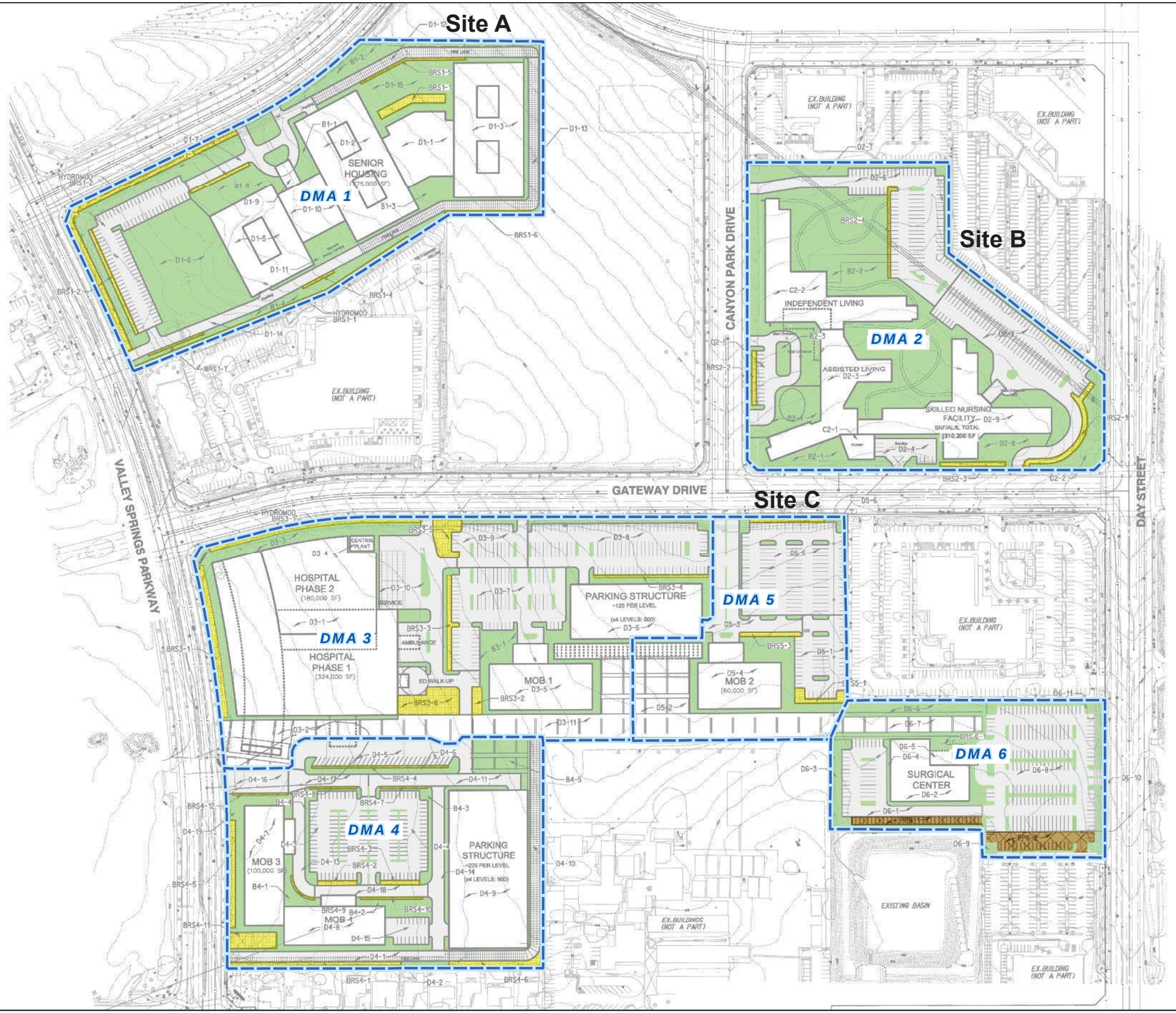
- **DMA 2 (Site B):** This DMA will utilize bioretention areas in the central landscaped area as well as the perimeter of the parking lot. Stormwater from the building will be conveyed via roof drains and outlet to the parking lots where it will sheet flow into the bioretention areas. Runoff from the parking and drive aisles will sheet flow and enter into the bioretention areas via curb cuts.
- **DMA 3 (Site C):** This DMA will utilize bioretention areas in the landscaping surrounding the hospital, with additional bioretention areas proposed to store the HCOC volume. Stormwater from the building will be conveyed via roof drains and outlet to the parking lots where it will sheet flow into the bioretention areas. Runoff from the parking and drive aisles will sheet flow and enter into the bioretention areas via curb cuts.
- **DMA 4 (MOBs 3 and 4, parking structure, and surface parking):** This DMA will utilize bioretention areas along the perimeter of the MOBs, with additional bioretention areas proposed to store the HCOC volume. Stormwater from the building will be conveyed via roof drains and outlet to the parking lots where it will sheet flow into the bioretention areas. Runoff from the parking and drive aisles will sheet flow and enter into the bioretention areas via curb cuts.
- **DMA 5 (MOB 2 and surface parking):** This DMA will also utilize bioretention areas along the perimeter of the parking lot, with additional bioretention areas proposed to store the HCOC volume. Stormwater from the building will be conveyed via roof drains and outlet to the parking lots where it will sheet flow into the bioretention areas. Runoff from the parking and drive aisles will sheet flow and enter into the bioretention areas via curb cuts.
- **DMA 6 (MOB 5 and surface parking):** This DMA will utilize two areas of permeable pavers in the parking lot where runoff will sheet flow and infiltrate. Any additional runoff will be stored in the proposed bioretention swale. All stormwater will sheet flow across the parking lot and into the proposed permeable pavers.

[5] A Hydrologic Condition of Concern (HCOC) is a combination of upland hydrologic conditions and stream biological and physical conditions that presents a condition of concern for physical and/or biological degradation of streams. Mitigation for HCOCs consists of ensuring the volume of runoff in a 2-year 24-hour storm does not increase by more than 5%.

Drainage Management Areas

Water Quality Features

- Bio-Retention Areas
- Permeable Pavers
- Proposed Landscape



0 120 240 Feet

SOURCE: Rick Engineering Company, 2016

FIGURE 4.7-2

Drainage Management Areas and Water Quality Features

DUDEK

Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan

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The preliminarily approved WQMP (Appendix D) also describes source control features to prevent pollutants from entering stormwater runoff in the first place. In addition to those already listed in Section 4.7.4, these include connection of boiler drain lines to the sanitary sewer (i.e., no discharge to the storm drain system), use of secondary containment for rooftop equipment that may have condensate or leaks (e.g., heating, ventilation, and air conditioning), use of sediment sumps for all drainage sumps, and proper roofing or containment of all trash/refuse areas.

Since the City's Public Works Department will condition the Project to implement the structural and non-structural BMPs outlined above and in the preliminarily approved WQMP (Appendix D), including any required revisions in the Final WQMP, and since the Project is required to prepare a SWPPP, the potential impacts associated with violations of water quality standards or WDRs will be **less than significant** for all phases, and no mitigation measures are required.

Threshold HYD-2: Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

The Project will be serviced by the EMWD, which derives its supplies from a mix of groundwater, imported water, desalination (salinity management program), and recycled water. However, based on the Water Supply Assessment conducted for the Project by EMWD, groundwater is not being proposed to serve the Project (Appendix M). New developments, including this Project, will be supplied with imported water: (1) treated imported water directly from The Metropolitan Water District of Southern California (Metropolitan); (2) untreated imported water from Metropolitan subsequently treated by EMWD; or (3) untreated imported water treated by EMWD and recharged into the basin for later withdrawal (Appendix M). This means that the Project's 215 acre-feet per year water demand will not be derived from groundwater sources, and thus, there will be no impact on the local groundwater level or aquifer depletion.

Groundwater management is in EMWD's purview, and service connection fees paid by the applicant will be used, at least in part, to support EMWD's groundwater management programs and regulatory obligations to avoid groundwater overdraft and other undesirable effects on the groundwater basin. To meet the needs of the growing population, EMWD developed a plan to supply water using imported water, local groundwater, and recycled water (EMWD 2016). In addition to supplying more water, EMWD encourages efficient water use through rebates for

water-saving devices, water-efficient requirements for new development, a water budget-based tiered rate structure, education, and other conservation practices.

With regard to interference with groundwater recharge, the Project will include a substantial increase in impervious surface on the site. However, the existing soils on site are not conducive to groundwater recharge, as shown by percolation testing (Appendix D). The preliminary WQMP has included bioretention features which will allow some infiltration of runoff water in design storm events. The San Jacinto Groundwater Basin is 293 square miles in size and has 3,070,000 acre-feet of groundwater storage capacity (DWR 2006). Considering that the site is not a major recharge area, the Project will have a negligible effect on groundwater recharge.

For these reasons, the Project will not substantially deplete groundwater supplies or interfere with groundwater recharge, and will have a negligible effect on groundwater recharge. Therefore, impacts will be **less than significant**, and no mitigation measures are required.

Threshold HYD-3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site?

The Project will not have any direct effects on a stream or river as none occur on site. The Project site is relatively flat-lying, with ground slopes limited to an average of less than 2%. As this will not substantially change with the Project, there will be little to no change in general drainage patterns across the site. General sheet flow conditions will be maintained, and the site will be designed with bioretention features and permeable pavement to ensure runoff from regular rain events are retained on site. The discussion above (under Threshold HYD-1) indicates how the Project will avoid erosion or siltation from low-volume, high-frequency rain events, including the water quality BMPs and LID practices that will be used to capture and infiltrate the runoff.

The analysis and conclusions under Threshold HYD-1 is equally relevant and applicable to this criterion. Since the City's Public Works Department will condition the Project to implement the structural and non-structural BMPs outlined above and in the preliminary WQMP (Appendix D), including any required revisions in the Final WQMP, and since the Project is required to prepare a SWPPP, the potential impacts associated with substantial erosion or siltation on or off site will be **less than significant** for all phases, and no mitigation measures are required.

Threshold HYD-4: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?

As indicated under Threshold HYD-3, the Project will not have any direct effects on a stream or river as none occur on site, and there will be little to no change in general drainage pattern across the site. However, the increase in impervious areas created could increase the volume and rate of stormwater runoff during high intensity storms, such as those with a 2-year or higher recurrence interval. As indicated in the preliminary WQMP, the time of concentration will be 8% to 25% sooner, and the runoff volume will be approximately 86% higher compared to existing conditions for a 2-year, 24-hour rain event (Appendix D). This is considered to be a "hydrologic condition of concern" under the Riverside County MS4 permit and the RCFCWCD WQMP Template. The volumes of water for which BMPs have been designed in DMAs 2, 3, and 4 were increased to capture this amount, thereby mitigating the increase in runoff attributable to the 2-year 24-hour storm event for the whole site (including DMAs 1, 5, and 6). Therefore, the Project design (additional LID BMPs) adequately addresses this potential hydrologic condition of concern.

For higher intensity storm events, such as the 10-year or 100-year year storm events, the Project will likewise increase the rate, volume, and arrival time of runoff due to development. There are two off-site detention basins adjacent to the Project (described in Section 4.7.1, Setting), which are available to capture flood flows associated with a 100-year storm. One is a desilting basin, and the other is a flood control basin operated by RCFCWCD. FEMA 100-year flood maps indicate the RCFCWCD is operating as intended, since the 100-year flood zone is confined to within the basin. Without measures to capture the Project-related increase in volume and flow during peak rain and flood events, the increase in flow could be conveyed to downstream receiving waters and off-site detention basins, possibly exacerbating flooding issues off site. When sizing regional flood control facilities, flood control districts often plan for future growth by sizing the basin according to the runoff predicted under future developed conditions. However, inadequate information exists regarding the hydrologic modeling assumptions used to size the off-site basins, so it is unknown whether the basins will be large enough to capture the Project-related increase to flood flows. Therefore, this analysis assumes that off-site basins were sized based on pre-developed conditions on the Project site.

Consequently, the Project will include detention facilities, in addition to the water quality BMPs described above, to ensure the Project does not increase peak flows relative to pre-Project conditions. Appendix J estimated the Project-related increase in the 100-year, 3-hour storm event, as it is the storm scenario that typically yields the largest volume requirements. Preliminary calculations for the pre- and post-Project peak flows for the 100-year, 3-hour

storm event are shown in Table 4.7-4. The post-Project increase in discharge rate as a result of impervious surfaces for the 100-year, 3-hour storm event ranges between 7% and 19%, depending on the drainage area. The post-Project increase in discharge volume as a result of impervious surfaces for the 100-year, 3-hour storm event ranges between 23% and 60%, depending on the drainage area.

Table 4.7-4
Required Storage Volume to Maintain Pre-Project Conditions
100-Year, 3-Hour Storm Event (Preliminary)

Basin No.	Pre-Project Discharge Rate (cfs)	Post-Project Discharge Rate (cfs)/Percent Increase	Pre-Project Discharge Volume (acre-feet)	Post-Project Discharge Volume (acre-feet)/Percent Increase	Required Storage Volume (acre-feet)
100	14.29	16.03 / +12%	0.89	1.14 / +28%	0.25
200	16.91	18.04 / +7%	1.08	1.33 / +23%	0.25
300	30.31	36.05 / +19%	1.85	2.96 / +60%	1.11
400	5.69	6.67 / +17%	0.34	0.54 / +59%	0.20
500	6.85	7.60 / +11%	0.39	0.59 / +51%	0.20

Note: cfs = cubic feet per second
Source: Appendix J.

According to Appendix J, the required storage volume will be accomplished through installation of underground storage facilities that will be designed to tie into off-site storm drain facilities, including the two off-site basins described above. Though these are preliminary calculations, and the final design may necessitate refinements to determine exact storage requirements, Appendix J provides information sufficient to determine the Project can be built in a manner that will not increase the rate or amount of surface runoff in a manner that will result in flooding or erosion on or off site. Integration of on-site detention basins into the Project design will ensure no net increase in the rate or volume of runoff received by the off-site flood control facilities. With these design features and required compliance with City of Riverside Municipal Code Chapter 14.12, Project impacts will be **less than significant**, and no mitigation measures are required.

Threshold HYD-5: Would the project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

As indicated in the discussion of the Threshold HYD-4 above, the Project will include the detention facilities necessary to prevent any increases in the rate or volume of stormwater runoff leaving the site. Furthermore, there are no additional sources of polluted runoff not already addressed above (see Threshold HYD-1). Therefore, the Project's impacts on the

capacity of existing or planned stormwater drainage systems or additional sources of polluted runoff will be **less than significant**, and no mitigation measures are required.

4.7.6 Mitigation Measures

Impacts related to hydrology and water quality were found to be **less than significant** through compliance with existing regulations or as a result of Project design features. Therefore, no mitigation measures are necessary.

4.7.7 Environmental Impacts After Mitigation Is Incorporated

Since there will be no significant impacts requiring mitigation, residual impacts related to hydrology and water quality will be **less than significant**.

4.7.8 References

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4.8 LAND USE AND PLANNING

The focus of the following discussion and analysis is based on the Initial Study and Notice of Preparation (NOP) (Appendix A) and comments received during the NOP public comment period. This section:

- Describes the existing land use and planning setting
- Identifies relevant regulatory requirements
- Evaluates potentially adverse impacts related to land use and planning
- Identifies mitigation measures related to implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project)

The focus of the following analysis per the Initial Study and NOP (Appendix A) is related to the Project's potential conflicts with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the General Plan, Specific Plan, and/or Zoning Code). The Initial Study concluded that potential impacts related to the Project physically dividing an established community and the Project's potential conflicts with an applicable habitat conservation plan or natural community conservation plan were less than significant; therefore, these impacts are not discussed in the Draft Environmental Impact Report (EIR).

4.8.1 Setting

Existing Land Uses

The Project is located within the Sycamore Canyon/Canyon Springs Neighborhood in the eastern portion of the City of Riverside. The 50.85-acre Project site consists of three separate, non-contiguous, previously graded and currently vacant areas, located approximately 0.2 mile east of Interstate 215 (I-215) and approximately 0.3 mile south of State Route 60 (SR-60).

The Project site has a *City of Riverside General Plan 2025* (General Plan 2025) Land Use Designation of C – Commercial (see Chapter 2, Figure 2-6). Site A and Site B currently have a Zoning Designation of O SP – Office and Specific Plan (Canyon Springs Business Park) Overlay Zones. Site C currently has a zoning designation of CR SP – Commercial Retail and Specific Plan (Canyon Spring Business Park) Overlay Zones and O SP – Office and Specific Plan (Canyon Springs Business Park) Overlay Zones (see Chapter 2, Figure 2-7).

The Canyon Spring Business Park Specific Plan (CSBPSP) also has land use designations for the Project site. Site A is within Area 8 of the CSBPSP, which is designated for Corporate Office

use. Site B is within Area 9 of the CSBPSP, which is designated for Professional Office use. Site C is within Area 7 and Area 10 of the CSBPSP. Area 7 is designated for Support Commercial uses, and Area 10 is designated for Medical Campus uses. See Chapter 2, Figure 2-3.

Surrounding Land Uses

Generally, land uses immediately adjacent to the Project site include medical office buildings (MOBs), office buildings, governmental offices, single-family residences, a school, and vacant parcels (see Figure 2-5). Other uses north of the Project site (north of Corporate Centre Place and Campus Parkway) include commercial retail uses (e.g., Walmart, Target, PetSmart). These uses are within the City of Riverside and within the Canyon Springs Business Park Specific Plan. As shown in Figures 2-5 and 2-6, the area north of the Project site is designated for Commercial use in the General Plan and is zoned CR SP - Commercial Retail and Specific Plan (Canyon Springs Business Park) Overlay Zones. West of the Project site (west of Valley Springs Parkway) are commercial uses, including a big-box retail (Sam's Club) and a bank. These uses are also within the City of Riverside General Plan and the CSBPSP. As shown in Figures 2-5 and 2-6, the area west of the Project site is designated for Commercial use in the General Plan and is zoned CR SP - Commercial Retail and Specific Plan (Canyon Springs Business Park) Overlay Zones. Land uses located south of the Project site (south of Eucalyptus Avenue) include a mix of residences, commercial uses, and vacant, undeveloped parcels. The area south of Eucalyptus Avenue is within the City of Moreno Valley and is designated for Commercial and Residential/Office use. North of Eucalyptus Avenue and south of the Project site are 10 single-family residences and Edgemont Elementary School. These uses are within the City of Moreno Valley and are located on parcels designated for Office Commercial and Public uses by the City of Moreno Valley. Land uses east of the Project site (east of Day Street) include commercial retail uses (e.g., Costco, WinCo Foods) (Figure 2-5, Existing Uses). This area is within the City of Moreno Valley and is designated for Commercial use.

Proposed Project

The 50.85-acre Project site is currently located within the CSBPSP. Specifically**,** the Project site encompasses all of Planning Area 7 and portions of Planning Areas 8, 9, and 10 of the CSBPSP. (See Figure 2-6, Zoning, and Figure 2-7, Canyon Springs Business Park Specific Plan Planning Areas.) The CSBPSP is proposed to be amended to remove the Project site from the specific plan area and create a new *Canyon Springs Healthcare Campus Specific Plan* (Specific Plan). The General Plan and zoning designations of the Project site would be changed to Canyon Springs Healthcare Campus Specific Plan.

The overall Project site is broken up into three smaller sites within the new Specific Plan as described below.

Site A: This is a 10.45-acre site located at the southeast corner of Valley Springs Parkway and Corporate Center Place, currently within Planning Area 8. The site is comprised of four Assessor's Parcel Numbers (APNs) (291-440-047, 291-450-051, 291-450-052, and 291-450-053). The site is proposed to be developed as a senior housing facility with an approximately 375,000-square-foot, three-story, 234-unit senior "age-restricted" multifamily housing facility. The site is bounded by Corporate Center place and Campus Parkway to the north, Valley Springs Parkway to the west, vacant office zoned land to the east, and Riverside County Assessor office buildings and vacant office zoned land to the south (Figure 2-3, Site Plan).

Site B: This is a 10.27-acre site located at the northeast corner of Gateway Drive and Canyon Park Drive, currently within Planning Area 9. The site is comprised of four APNs (291-440-042, 291-440-043, 291-440-044, and 291-440-045). The site is proposed to be developed as an independent living/memory care, assisted living, and skilled nursing facility. The site is bounded by two multistory office buildings to the north, Canyon Park Drive to the west, Day Street to the east, and Gateway Drive to the south. A 100-foot-wide Metropolitan Water District water pipeline easement diagonally traverses this site (Figure 2-3, Site Plan).

Site C: This is a 30.13-acre site located at the southeast corner of Valley Springs Parkway and Gateway Drive, currently within Planning Areas 7 and 10. The site is comprised of 14 APNs (291-450-055, 291-450-056, 291-450-057, 291-090-038, 291-090-039, 291-090-040, 291-090-041, 291-450-054, 291-440-050, 291-440-049, 291-440-048, 291-440-018, 291-440-033, and 291-440-036). The site is proposed to be developed with a hospital, five MOBs, a central energy plant, and two parking structures, as well as associated landscaping and infrastructure improvements. The site is bounded by Gateway Drive to the north, Valley Springs Parkway to the west, Day Street and a Riverside Medical Clinic building to the east, and the City of Moreno Valley limit, south of which are 10 single-family homes and Edgemont Elementary School, a Riverside County Flood Control detention basin, and a MOB to the south fronting Eucalyptus Avenue (Figure 2-3, Site Plan).

The applicant may proceed with approval and development of MOB 5 site, located on Site C, under the existing Canyon Springs Business Park Specific Plan, but such development will occur contemporaneously or following certification of the EIR and approval of the proposed Specific Plan. In the event that an application for MOB 5 is submitted in advance of the certification of the EIR and approval of the proposed Specific Plan, the application shall be reviewed for consistency with both the existing CSBPSP and the proposed Specific Plan, with the most restrictive standard from each Specific Plan applied to the application. Further, all impacts resulting from any construction of MOB 5 will be included within the scope of this EIR.

Construction Components and Phasing

The Project consists of a site master plan that has been developed to include both short-term and long-range planning goals that cover construction over a 10-year period. The Specific Plan would

include future development over five phases (Figure 2-8, Project Phasing), as described below. The current Project phasing for the future development is provided to the best of the applicant's knowledge as a reasonably possible scenario. Future Project phasing could overlap, be out of sequence, or be concurrent depending on market conditions. A worst-case scenario assuming construction of all phases concurrently will be assumed in the environmental analyses.

Phase I – Approximately 15 Months

Phase I of the Project would be constructed in approximately 15 months and would consist of the following development:

- Senior Housing Facility—Construction of an approximately 375,000-square-foot, three-story, 234-unit senior "age-restricted" multifamily housing facility. The proposed senior housing facility would be approximately 53 feet high.
- Construction will also include 98 surface parking spaces and 192 underground parking spaces below the senior housing facility, as well as associated landscaping and infrastructure improvements.
- Independent Living/Memory Care, Assisted Living, and Skilled Nursing Facility—Construction of an approximately 310,200-square-foot, 3-story, 290-bed/267-unit facility. The proposed facility would be approximately 40 feet high.
- Construction will include 268 surface parking spaces, as well as associated landscaping, and infrastructure improvements.

Phase II – Approximately 40 Months

Phase II of the Project would be constructed in approximately 40 months and would consist of the following development:

- Phase 1 Hospital—Construction of an approximately 324,000-square-foot, 5-story plus penthouse (penthouse would not be occupied; penthouse to house elevator equipment), approximately 180-bed facility, as well as associated landscaping and infrastructure improvements. The proposed hospital would be approximately 94 feet high.
- Central Energy Plant—Construction of a two-level, approximately 22,000-square-foot central energy plant, as well as associated landscaping and infrastructure improvements. The proposed central plant (e.g., boilers, chillers, emergency generators, exchangers, transformers, switches) would be approximately 34 feet high.
- MOB 4—Construction of an approximately 70,000-square-foot, 4-story, MOB 4 with retail (e.g., pharmacy, retail incidental to medical services/office), as well as associated

landscaping and infrastructure improvements. The proposed MOB 4 would be approximately 52 feet high.

- Construction of a 4-level, approximately 70,550-square-foot, approximately 900-space unenclosed parking structure located east of MOB 4. The proposed parking structure would be approximately 40 feet high. The parking structure construction may be phased.

Phase III – Approximately 15 Months

Phase III of the Project would be constructed in approximately 15 months and would consist of the following development:

- MOB 3—Construction of an approximately 100,000-square-foot, 4-story MOB 3 with retail (e.g., pharmacy, retail incidental to medical services/office), as well as associated landscaping and infrastructure improvements. The proposed MOB 3 would be approximately 52 feet high.
- MOB 5—Construction of an approximately 40,000-square-foot, 2-story MOB 5, as well as associated landscaping and infrastructure improvements. The proposed MOB 5 would be approximately 34 feet high.

Phase IV – Approximately 32 Months

Phase IV of the Project would be constructed in approximately 32 months and would consist of the following development:

- MOB 1—Construction of an approximately 100,000-square-foot, 4-story MOB 1 with retail (e.g., pharmacy, retail incidental to medical services/office), as well as associated landscaping and infrastructure improvements. The proposed MOB 1 would be approximately 52 feet high.
- MOB 2—Construction of an approximately 60,000-square-foot, 3-story MOB 2 with retail (e.g., pharmacy, retail incidental to medical services/office), as well as associated landscaping and infrastructure improvements. The proposed MOB 2 would be approximately 40 feet high.
- Parking Structure for MOB 1 and MOB 2—Construction of a 4-level, approximately 41,850-square-foot, approximately 500-space unenclosed parking structure located north of MOB 1 and MOB 2. The proposed parking structure would be approximately 40 feet high.

Phase V – Approximately 28 Months

Phase V of the Project would be constructed in approximately 28 months and would consist of the following development:

- Phase 2 Hospital—Construction of an approximately 180,000-square-foot, 5-story hospital addition with approximately 100 beds, to take the campus-wide total to approximately 280 beds, as well as associated landscaping and infrastructure improvements. The proposed hospital would be approximately 94 feet high. A helipad/helistop is also proposed to be located on top of the hospital when the need arises.

Table 4.8-1 provides an outline of the Project components on each site.

Table 4.8-1
Summary of Project Components

Site	Description	Area (square feet)	Units/Beds
A	Senior housing	375,000	234 units
B	Independent living facility	107,500	49 one-bedroom units 23 two-bedroom units
B	Assisted living facility	93,300	75 units
B	Skilled nursing facility	109,400	120 units
C	Hospital Phase 1	324,000	180 beds
C	Hospital Phase 2	180,000	100 beds
C	MOB 1	100,000	N/A
C	MOB 2	60,000	N/A
C	MOB 3	100,000	N/A
C	MOB 4	70,000	N/A
C	MOB 5	40,000	N/A

Construction of ancillary services could occur as part of any of the above phases. Ancillary services could include on-site retail such as coffee shops, deli, lunch rooms, mobile car wash services, valet parking, golf cart transport for the elderly or infirm patients, flower and gift shop, pharmacy, and medical retail (medical supplies); personal services such as barber shop, beauty salon, spa, tailor, dry cleaner, and self-service laundry; and restaurants (sit-down, quick-serve, and take-out).

Additionally, the Canyon Springs Healthcare Campus's 94-foot tall hospital would have an approximately 65-foot by 65-foot (4,225-square-foot) rooftop helistop to accommodate emergency medical service (EMS) and trauma helicopters for rapid patient transport to and from other facilities with different medical specialties or capabilities.

The Project site is already improved with street frontage, curb and gutter, sidewalks, parkway landscaping, and utilities stubbed to the property line, and is rough graded.

Land Use Applications

A variety of entitlements would be required for the Project. These entitlements are described in detail in Section 2.6 of this EIR and include a General Plan Amendment, Specific Plan, Specific Plan Amendment, and Rezone approval for the City of Riverside, as well as permits from other regulatory agencies such as the Santa Ana Regional Water Quality Control Board, the South Coast Air Quality Management District, and the Federal Aviation Administration.

4.8.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

There are no federal regulations applicable to the Project.

State

California Government Code Section 65450

Section 65450 et seq. of the California Government Code authorizes cities to prepare, adopt, and administer specific plans for portions of their jurisdictions, as a means of implementing a city's General Plan. All specific plans must comply with Sections 65450–65457 of the Government Code. The *Canyon Springs Healthcare Campus Specific Plan* complies with all requirements mandated by state law.

California Constitution, Article XI, Section 7

Article XI, Section 7, of the California State Constitution gives cities and counties the authority to regulate land use. California State Planning and Land Use Law (Government Code Section 65000 et seq.) sets forth minimum standards for the regulation of land use at the city and county level.

Office of Statewide Health Planning and Development

The Office of Statewide Health Planning and Development's Facilities Development Division would review and approve the plans and specifications of the proposed hospital building, MOBs, and independent living, assisted living, and skilled nursing facility, to the extent required by applicable law, to ensure compliance with the provisions of the California Building Code, Title 24, California Code of Regulations.

Local

City of Riverside General Plan 2025

The City's General Plan 2025 was adopted in November 2007 and considers the continued growth of the City beyond the year 2025. The Project site is designated Commercial (C) in the General Plan 2025. Most of the objectives and policies relevant to the Project are contained within the General Plan 2025's Land Use and Urban Design Element, Circulation and Community Mobility Element, Public Safety Element, Noise Element, Air Quality Element, and Historic Preservation Element, as described below.

Land Use and Urban Design Element

The Land Use and Urban Design Element contain objectives and policies to preserve and enhance City-wide and neighborhood-specific character. This element of the General Plan 2025 describes present and planned land uses and their relationship to the City's visionary goals.

Circulation and Community Mobility Element

The Circulation and Community Mobility Element contains objectives and policies focused on serving the transportation needs of the community and encouraging the effective use of alternative modes of transportation. The major principles underlying this element of the General Plan are focusing future development near existing transportation corridors; ensuring land uses are supported by an efficient local roadway network; embracing innovative solutions to congestion on freeways and regional arterials; supporting alternative modes of transportation such as walking, biking, and transit; and ensuring that transportation options are maximized for all community members as necessary components of an effective and safe circulation system for the City.

Public Safety Element

The Public Safety Element identifies public safety issues and needs anticipated to be of ongoing concern to the City during the planning period. This element describes the major hazards that might affect the City, as well as the resources available to respond when an accident or emergency occurs. The element sets forth objectives and policies to address all foreseeable public safety concerns. The overall purpose of this element is to ensure that the City takes all necessary proactive measures to reduce the risk of hazards and adequately, expediently, and efficiently respond to immediate safety threats.

Noise Element

The Noise Element examines noise sources in the City with a view toward identifying and appraising the potential for noise conflicts and problems and identifies ways to reduce existing and potential noise impacts. In particular, the Noise Element contains policies and programs to achieve and maintain noise levels compatible with various types of land uses. The element addresses noise that affects the community at large, rather than noise associated with site-specific conditions.

Air Quality Element

The Air Quality Element is a planning tool the City uses to protect the public's health and welfare. While the State of California does not require General Plans to include Air Quality Elements, the City recognizes the importance of air quality not only to public health and safety, but also to the City's economic well-being and its image in the region.

Historic Preservation Element

The purpose of the Historic Preservation Element is to provide guidance in developing and implementing activities that ensure that the identification, designation, and protection of cultural resources are part of the City's community planning, development, and permitting processes. This element also defines the City's role in encouraging private-sector activities that support historic preservation goals.

City of Riverside Municipal Code

Title 19 – Zoning Code

Title 19 of the City's Municipal Code contains the Zoning Code for the City, and also includes regulations for site planning and development. As stated in Section 4.8.1, Site A and Site B are zoned O SP – Office and Specific Plan (CSBPSP) Overlay Zone, and Site C is split-zoned O SP – Office and Specific Plan (Canyon Springs Business Park Specific Plan) Overlay Zone and CR SP – Commercial Retail and Specific Plan (CSBPSP) Overlay Zone. Section 19.110, Commercial and Office Zones (O CR, CG, and CRC) of the City of Riverside Municipal Code (City of Riverside 2010), establishes the purpose of each zone and identified permitted land uses and development standards. According to the Municipal Code, the Office Zone (O) is intended to allow for the location of offices for administrative, business and professional activities that involve a relatively low volume of direct customer contact, and is also intend to allow limited commercial uses that support the office uses and their employees. (City of Riverside Municipal Code Section 19.110.010(A)). The Commercial Retail Zone (CR) is intended for a broad range of indoor-oriented retail sales and services, and office uses as stand-alone businesses or commercial centers/office developments (City of Riverside Municipal Code Section 19.110.010(B)). The Project site is located in the Sycamore Canyon/Canyon Springs

neighborhood, and according to the City of Riverside, existing uses in the neighborhood consist of light industrial businesses and office complexes (City of Riverside 2016). With the adoption of the Specific Plan, the existing underlying zones that encompass the healthcare campus sites will be rescinded to accommodate the boundaries of the Specific Plan.

The zoning of the Project site would be changed to Canyon Springs Healthcare Campus Specific Plan. The permitted uses and development standards for the Project site would be established by the Specific Plan upon Project approval. Chapter 19.820 of the City's Municipal Code sets forth requirements for specific plans and specific plan amendments. The Project is subject to this chapter of the Municipal Code, since it would involve a specific plan amendment to remove the Project site from the boundaries of the CSBPSP, as well as approval of a new specific plan that would establish land use regulations for the Project site (the proposed Specific Plan). As stated in Section 19.820.020 of the Municipal Code, specific plan and specific plan amendment applications must be processed in accordance with the City's discretionary permit processing provisions. Section 19.820.040(A) describes the relationship between specific plans other adopted regulations. Specific plans are allowed to either supplement or supersede all land use regulations applicable to the subject property, including all previously adopted ordinances, standards, and guidelines. In the event of an inconsistency between a specific plan and the Zoning Code, the specific plan prevails. Section 19.820.040(B) sets forth the required contents of specific plans. The proposed Specific Plan and the proposed amendment to the CSBPSP would be required to comply with Chapter 19.820 of the City's Municipal Code.

Title 7 – Noise Control

Title 7 of the City's Municipal Code contains the City's Noise Control Code. The Project would be subject to the applicable provisions of this code during construction and operation. The Noise Control Code sets forth regulations that control and prohibit unnecessary, excessive, and/or annoying noise in the City. Compliance with the Noise Control Code minimizes noise levels in the City and reduces the effects of noise, thereby providing a safer and healthier living environment. (See Section 4.9, Noise, in this EIR for more details on the Noise Control Code and its applicability to the Project.)

Title 16 – Building and Construction

Title 16 of the City's Municipal Code sets forth regulations for design, construction, quality of materials, use and occupancy, location and maintenance of buildings, equipment, structures, and grading for development within the City. This title also covers requirements for electrical work, plumbing, heating, cooling, and other equipment specifically regulated in the City. Title 16 provides minimum standards for the safety of buildings and building construction within the City, in order to protect life and property. The Project would be required to meet all applicable provisions of Title 16.

Title 17 – Grading Code

Title 17 of the City's Municipal Code sets forth regulations for grading projects. Compliance with these regulations helps minimize erosion, dust, water runoff, effects to natural landforms, and construction equipment emissions. The Project would be required to meet the applicable provisions of Title 17.

Title 18 – Subdivision Code

Title 18 sets forth regulations for the design of subdivisions. Provisions include lot size requirements, street capacity requirements, pedestrian and vehicular safety requirements, and site access requirements to ensure adequate access to each building site. Title 18 also contains provisions that help preserve the natural assets of the City, with the purpose of preventing indiscriminate clearing of property and destruction of vegetation and other desirable landscape features.

Title 20 – Cultural Resources

Title 20 of the Municipal Code provides guidelines for preserving, protecting, restoring, and rehabilitating historical and cultural resources within the City in order to maintain and encourage appreciation of its history and culture, improve the quality of the City's built environment, maintain the character and identity of its communities, and enhance the local economy through historic preservation.

Citywide Design and Sign Guidelines

The Citywide Design and Sign Guidelines were set forth to reinforce the aesthetics of the City and to promote quality, well-designed development projects that help enhance existing neighborhoods and that improve overall quality of life within the City. The Project will be reviewed by Design Review to ensure consistency with the City's standards for the design of development projects.

City of Riverside Canyon Springs Business Park Specific Plan

The Project site is currently within the boundaries of the CSBPSP. Upon project approval, the Project site would be removed from the boundaries of the CSBPSP via a Specific Plan Amendment.

City of Riverside Canyon Springs Healthcare Campus Specific Plan

Upon project approval, the Project site would become a distinct specific plan area, separate from and adjacent to the existing CSBPSP area. The Project site would be within the proposed Specific Plan and would be zoned and designated as Canyon Springs Healthcare Campus Specific Plan in the City's General Plan and on the City's zoning map. The proposed Specific

Plan would provide standards and regulations for the development of senior housing, independent living and assisted living, a skilled nursing facility, a hospital, medical office buildings, and parking structures.

Western Riverside Multiple Species Habitat Conservation Plan

The biological goal of the Multiple Species Habitat Conservation Plan (MSHCP) is to conserve certain plant, bird, mammal, and amphibian species and their habitats, as well as to maintain biological diversity while allowing for future economic growth within a rapidly urbanizing region. The City adopted the MSHCP on September 23, 2003 (City of Riverside 2003), and the federal and state wildlife agencies approved permits to implement the MSHCP on June 22, 2004. Discussion of compliance with the MSHCP is provided in Section 4.3, Biological Resources, of this EIR.

4.8.3 Thresholds of Significance

Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) provides guidance for evaluating whether a project may result in significant impacts. Based on Appendix G and the Initial Study prepared for the Project, the Project could have a significant impact on land use and planning if it would:

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

4.8.4 Project Features That Will Reduce Impacts

A specific plan is being prepared for the Project to provide a roadmap to guide future development over a 10-year period and identify design and development standards for the expansion of medical and medical support uses in a manner that is compatible with existing uses and future needs. Implementation of the *Canyon Springs Healthcare Campus Specific Plan* would streamline the entitlement process and provide a comprehensive set of guidelines that would ensure the quality and compatibility of future development on the hospital campus.

4.8.5 Impact Analysis

Threshold LU-1: Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Project-Level and Program-Level Elements

The Specific Plan will be divided into five phases (Phases I, II, III, IV, and V). The Specific Plan will provide a roadmap to guide future development over a 10-year period by identifying development standards and design guidelines for the expansion of medical and medical support uses in a manner that is compatible with existing uses and future needs. The five proposed phases may be constructed in any order. Additionally, two or more phases could be constructed concurrently.

Under state law, specific plans provide detailed land use and infrastructure plans and policies for a certain geographic area, and must be consistent with a community's General Plan. In order to be consistent with the City's General Plan 2025, the Project includes a General Plan Amendment to designate the *Canyon Springs Healthcare Campus Specific Plan* area as the "Canyon Springs Healthcare Campus Specific Plan" and replace the current land use designation (see Chapter 2, Figure 2-6, General Plan). The Project also includes a rezone to designate the Canyon Springs Healthcare Campus Specific Plan area as the "Canyon Springs Healthcare Campus Specific Plan" and revise the current City Zoning Map (see Chapter 2, Figure 2-7, Zoning). Adoption of the proposed "Canyon Springs Healthcare Campus Specific Plan" land use designation and zoning amendments would allow for implementation of the Specific Plan and associated development standards. Table 4.8-2 identifies the Project's consistency with the City's General Plan 2025.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Land Use and Urban Design Element			
Objective LU-8	Emphasize smart growth principles through all steps of the land development process.	The *Canyon Springs Healthcare Campus Specific Plan* incorporates Smart Growth principles. The Project will implement the following transportation demand management (TDM) measures/recommendations: • Bicycle parking and universal access should be provided • Local transportation management and roadway improvements • On-site amenities such as cafeterias, restaurants, automated teller machines, and other services that would reduce the need for additional trips (City of Riverside 2007, Chapter 19.880). The Specific Plan also contains provisions for pedestrian pathways and bicycle paths. The Specific Plan requires pedestrian pathways and bicycle paths that provide connections between buildings and from parking areas to the buildings they serve as well as from transit stops. The Specific Plan requires walkways to be planned and built across the Plan Area to accommodate pedestrian connections from adjacent properties to buildings and parking areas within the Plan Area. Furthermore, pedestrian walkways are required to be provided along entrance drives to connect buildings and parking areas to an overall pedestrian system. In addition, elements for providing shade and comfort, such as bench areas, pergolas, arcades, and park areas, are required to be included within the pedestrian circulation system in the Plan Area.	The Project will be consistent with this objective.
Objective LU-9	Provide for continuing growth within the General Plan Area, with land uses and intensities appropriately designated to meet the needs of anticipated growth and to achieve the community's objectives.	The Project will allow for implementation of the *Canyon Springs Healthcare Campus Specific Plan*, which provides a roadmap to guide future development of the healthcare campus over a 10-year period and identifies design and development standards for the construction of medical and medical support uses in a manner that is compatible with existing uses and future needs.	The Project will be consistent with this objective.
Policy LU-9.2	Evaluate proposed amendments to the Land Use Policy Map to consider the effect such amendments will have on the City's ability to achieve its objectives.	The Project includes a General Plan Amendment and rezone to designate the site as "Canyon Springs Healthcare Campus Specific Plan." This table evaluates the Project's consistency with the City's pertinent goals and objectives.	The Project will be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Policy LU-9.4	Promote future patterns of urban development and land use that reduce infrastructure construction costs and make better use of existing and planned public facilities when considering amendments to the Land Use Policy Map.	The Project includes a General Plan Amendment and rezone to designate the site as "Canyon Springs Healthcare Campus Specific Plan." The Project will increase intensity on-site and allow for better use of the existing infrastructure that is currently in place.	The Project will be consistent with this policy.
Policy LU-9.7	Protect residentially designated areas from encroachment by incompatible uses and from the effects of incompatible uses in adjacent areas. Uses adjacent to planned residential areas should be compatible with the planned residential uses and should employ appropriate site design, landscaping and building design to buffer the non-residential uses.	The Specific Plan contains development standards and design guidelines pertaining to mass and scale of new building and compatibility with adjacent land uses and structures. Design Guideline 8.1(e) states that the mass and scale of new buildings should be sensitive to existing adjacent structures within the CSBPSP and the residences and Edgemont Elementary School in the City of Moreno Valley. Design measures to accomplish compatible mass and scale include transitioning from the height of adjacent buildings to the tallest element of the new building(s) on site; stepping back the upper portions of the taller buildings on site; architectural reveals and details; and incorporating human scale elements such a pedestrian-scale doors, windows, and building materials on the ground floor. Where a stepped approach is not possible due to the type of building (e.g., parking structures), adequate setbacks, screening; and generous plantings shall be provided to soften the transition between the Specific Plan Area and adjacent uses outside of the Specific Plan Area. Single-family residences are located immediately to the south of the proposed Site C. More specifically, the Project includes construction of MOB 3 (100,000 square feet, 52 feet high), MOB 4 (70,550 square feet, 4 stories high), and Parking Structure 1 (approximately 900 spaces, 40 feet high) on a currently vacant parcel located immediately north of 10 single-family residences and west of Edgemont Elementary School. The residences (and the elementary school) are located on parcels designated for Office Commercial (OC) and Public (P) uses by the City of Moreno Valley and are located within the jurisdictional boundaries of the City of Moreno Valley. According to Section 9.04.020 of the City of Moreno Valley Municipal Code, the primary purpose of the OC District to provide for the establishment of business, corporate, and administrative office and commercial services which are supportive to	The Project is not located adjacent to residentially designated areas and therefore, this policy is not applicable.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
		major business development (City of Moreno Valley 2017). Therefore, while the residences are located adjacent to Site C, they are not designated or planned for residential use. A residentially designated area is located south of Edgemont Elementary School and Eucalyptus Avenue, but it is not located adjacent to the Specific Plan boundary. The area currently supports single-family residences but has been designated R20 by the City of Moreno Valley. The R20 residential district is intended to support multifamily residential uses (as well as mobile home parks) at a maximum allowable density of 15 dwelling units per net acre. Furthermore, according to Table 9.03.040-7 Residential Site Development Standards, of the City of Moreno Valley's Municipal Code, the maximum allowable height in the R20 district is 50 feet, which is similar to the maximum building height of structures proposed on Site C. The Specific Plan includes a number of development standards and design guidelines to assist in the screening of buildings and parking structures on the Project site, including the implementation of building setbacks and installation of landscaping along the southern boundary of Site C.	
Objective LU-10	Provide for appropriate timing of development in accordance with the future land uses designated in this Land Use Element.	The Project will allow for implementation of the Specific Plan, which provides a roadmap to guide future development of the healthcare campus over a 10-year period and identifies design and development standards for the expansion of medical and medical support uses in a manner that is compatible with existing uses and future needs.	The Project will be consistent with this objective.
Policy LU-10.4	Require development projects to be timed and phased so that projects are not occupied prior to the provision of necessary urban services.	The Project will allow for implementation of the Specific Plan, which guides future development of the site in a manner that is compatible with existing uses and future needs, and phased in accordance with available public facilities and utilities. Further, the Project site is served by utilities and other urban services to meet the needs of the Project, and the Project is intended to help serve an existing shortage of medical services within the local area.	The Project would be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Objective LU-28	Preserve and enhance the quality and character of Riverside by ensuring compliance with all relevant codes and regulations.	The Project will allow for implementation of the Specific Plan, which contains development standards including, but not limited to, height, floor-area-ratio, setbacks that have been established through consideration of the quality and character of on-site and surrounding land uses.	The Project will be consistent with this objective.
Objective LU-30	Establish Riverside's neighborhoods as the fundamental building blocks of the overall community, utilizing Neighborhood and Specific Plans to provide a more detailed design and policy direction for development projects located in particular neighborhoods.	The Project site is located within the Sycamore Canyon /Canyon Springs Neighborhood. Based on a review of aerial photography, existing uses in the neighborhood include light industrial, office complexes, big-box retail and commercial retail development, surface parking lots, restaurants, medical offices, and vacant pads. The Project will allow for implementation of the Specific Plan, which includes detailed design and policy direction, such as specific development standards and design guidelines.	The Project will be consistent with this objective.
Policy LU-30.3	Ensure that the distinct character of each of Riverside's neighborhoods is respected and reflected in all new development, especially infill development.	The Sycamore Canyon/Canyon Springs Neighborhood includes light industrial uses, office complexes, big-box retail and commercial retail development, surface parking lots, restaurants, medical offices, and vacant pads. The Project will involve construction and operation of a senior housing facility, independent living and assisted living, a skilled nursing facility, a hospital, medical office buildings, and parking structures.	The Project will be consistent with this policy.
Policy LU-30.8	Develop/amend Neighborhood Plans with the participation of residents and property owners of the affected area and with the involvement of other community organizations or interest groups the City finds to be affected by the Neighborhood Plan.	The Project will allow for implementation of the Specific Plan. The applicant has worked with the surrounding community members during preparation of the Specific Plan. Public hearings will be held by the City in accordance with the requirements of CEQA. Separately, the Project applicant has conducted outreach meetings for community members to inform the surrounding community of the Project and to obtain comments and input on the Project.	The Project will be consistent with this policy.
Policy LU-30.9	Interpret, apply or impose the development restrictions, conditions, and/or standards of an approved Specific Plan in addition to those found in this General Plan.	The Project will implement the Specific Plan, which includes development standards and design guidelines for the 50.85-acre site. The Project will also be consistent with regulations and policies of the City's General Plan 2025, as demonstrated in this table.	The Project will be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Circulation and Community Mobility Element			
Objective CCM-2	Build and maintain a transportation system that combines a mix of transportation modes and transportation system management techniques, and that is designed to meet the needs of Riverside's residents and businesses, while minimizing the transportation system's impacts on air quality, the environment and adjacent development.	TDM is a strategy designed to reduce single-occupancy vehicle trips during peak hours. TDM seeks to shift commuters to transportation modes other than cars and encourages ride-sharing and carpooling programs. The Specific Plan incorporates TDM features, including the following: • Ride-sharing reward programs; • Preferential parking for carpool vehicles; • Bicycle parking and shower facilities for employees; • Local transportation management and roadway improvements; and • On-site amenities such as cafeterias, restaurants, automated teller machines, and other services that would eliminate the need for additional off-campus trips.	The Project will be consistent with this objective.
Policy CCM-2.3	Maintain LOS D or better on Arterial Streets wherever possible. At key locations, such as City Arterials that are used by regional freeway bypass traffic and at heavily traveled freeway interchanges, allow LOS E at peak hours as the acceptable standard on a case-by-case basis.	The site is bordered by Day Street to the east, Valley Springs Parkway and Corporate Centre Place to the west, Campus Parkway to the north, and Eucalyptus Avenue to the south. According to the Traffic Impact Analysis prepared for the Project (Appendix L), under Existing Plus Project Conditions, the Project is anticipated to cause the intersection of Valley Springs Parkway/Eucalyptus Avenue to change from an acceptable Level of Service (LOS) B to unacceptable LOS F during the PM peak hour without mitigation, but will operate at an acceptable LOS C with mitigation. In addition, the Project will result in or contribute to degraded and unacceptable intersection operations during Opening year (2016) and General Plan Buildout Conditions without mitigation, but with mitigation all City arterial intersections will operate at an acceptable LOS under such scenarios. Implementation of **MM-TRAF-1** through **MM-TRAF-12** are proposed to address the Project's transportation/traffic impacts. See Section 4.11, Transportation/Traffic for additional detail.	The Project will be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Policy CCM-2.8	Design street improvements considering the effect on aesthetic character and livability of residential neighborhoods, along with traffic engineering criteria.	The Project does not include street improvements. However, mitigation measures will require the construction of street improvements in accordance with City criteria and standards, including measures listed in Policy CCM-2.3. These street improvements are identified as mitigation measures and discussed further in Section 4.11, Transportation/Traffic.	The Project will be consistent with this policy.
Objective CCM-9	Promote and support an efficient public multi-modal transportation network that connects activity centers in Riverside to each other and to the region.	Riverside Transit Agency (RTA) bus Route 16 runs along Day Street and Eucalyptus Avenue. A bus stop is located on the corner of Day Street and Gateway Drive, in close proximity to Site B and MOB 5 site. Another bus stop along Route 16 is located near the corner of Day Street and Eucalyptus Avenue, near the MOB 5 site. Stops near the proposed Canyon Springs Healthcare Campus allow connection to other activity centers in Riverside. Additionally, the circulation plan for the proposed Specific Plan would include a new bus stop along northbound Valley Springs Parkway, south of the intersection with Gateway Drive.	The Project will be consistent with this objective.
Policy CCM-9.1	Encourage increased use of public transportation and multi-modal transportation as means of reducing roadway congestion, air pollution and non-point source water pollution, through such techniques as directing new growth along transportation corridors.	See responses to Objective LU-8 and Objective CCM-9. The Project site is located near numerous existing bus routes, and development of the proposed Specific Plan would involve a new bus stop adjacent to the Project site. Additionally, the Project will include bicycle parking; on-site amenities that would reduce the need for trips to and from the site; pedestrian pathways throughout the site providing connections between buildings and nearby transit stops; and pedestrian-oriented amenities such as benches, pergolas, and arcades, to encourage pedestrian travel throughout the site. These aspects of the Project will encourage residents and visitors of the Project to use public transportation and non-vehicular transportation modes for traveling within the site and/or for traveling to and from the site.	The Project will be consistent with this policy.
Policy CCM-9.5	Incorporate facilities for transit and other alternative modes of transportation, such as park and ride lots and bus turnouts, in the design of future developments.	Bus services is currently provided in the Project area. RTA Bus Route 16 operates along Day Street on the eastern perimeter of the Project site, and unshaded bus stops are located at Campus Parkway, Gateway Drive, and Eucalyptus Avenue. A two-person bench is provided at the Campus Parkway stop, and a bus turnout is provided at the Eucalyptus Avenue stop.	The Project will be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
		The scale and location of the Project would not trigger a need for new park-and-ride lots. Existing park-and-ride facilities are located off SR-60 at Townsgate./Moreno Valley Mall (located 0.4 mile northeast of the Project site) and at Pigeon Pass Road (1 mile northeast of the Project site) (Caltrans 2016). The Specific Plan contains guidelines to facilitate connectivity between adjacent transit and Project buildings and parking. RTA has reviewed and commented on the Specific Plan and identified the need for an additional bus facility at the southeast corner of the intersection of Valley Springs Parkway and Gateway Drive. The bus stop is incorporated as a Project design feature.	
Policy CCM-9.6	Enhance and encourage the provision of attractive and appropriate transit amenities, including shaded bus stops, to facilitate the use of public transportation, through the development process by incorporating the necessary design features as appropriate.	As discussed above in response to policy CCM-9.5, the Specific Plan contains design guidelines to facilitate connectivity between adjacent transit and Project buildings and parking. RTA has reviewed and commented on the Specific Plan and identified the need for an additional bus facility at the southeast corner of the intersection of Valley Springs Parkway and Gateway Drive. The bus stop is incorporated as a Project design feature.	The Project will be consistent with this policy.
Objective CCM-10	Provide an extensive and regionally linked public bicycle, pedestrian and equestrian trails system.	The Project site is currently accessible for bicycles and pedestrians. Specifically, sidewalks are currently provided around the perimeter of the site and along Day Street, Eucalyptus Avenue, Valley Springs Parkway, Gateway Drive, Corporate Center Place, and Campus Parkway. Eucalyptus Avenue is a designated bike route (bike route signage is posted along the roadway). As outlined in Chapter 5, Circulation, of the Specific Plan, the Project would be designed to encourage pedestrian activity to and from the campus, as well as internally between campus buildings. Internal sidewalks would be maintained and/or constructed as needed to provide pedestrian access in and around the campus. Separation of pedestrians from vehicular and bicycle traffic would be accomplished through several elements on site, such as the installation of sidewalks and incorporation of pedestrian walking paths within landscape buffers.	The Project will be consistent with this objective.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Policy CCM-10.2	Incorporate bicycle and pedestrian trails and bicycle racks in future development projects.	The Project will add bike racks to all future improvements made as part of all phases of the Specific Plan.	The Project will be consistent with this policy.
Policy CCM-10.6	Encourage pedestrian travel through the creation of sidewalks and street crossings.	The Project includes pedestrian walk paths that would provide connections between buildings, between parking areas and the buildings they serve, and from transit stops. The campus would therefore be designed to accommodate pedestrian activity across the campus and between buildings.	The Project will be consistent with this policy.
Public Safety Element			
Objective PS-1	Minimize the potential damage to existing and new structures and loss of life that may result from geologic and seismic hazards.	The Project will build new facilities designed to meet seismic retrofit requirements as required by Senate Bill 1953. A feasibility-level Geotechnical Investigation prepared for the Project (Appendix B) indicated that active or potentially active faults with the potential for surface fault rupture are not known to cross or project toward the Project site. Incorporation of seismic design parameters identified in the Geotechnical Investigation (Appendix B) would minimize potential damage to new structures caused by geologic or seismic events.	The Project will be consistent with this objective.
Policy PS-1.1	Ensure that all new development in the City abides by the most recently adopted City and State seismic and geotechnical requirements.	See response to Objective PS-1. The facilities that would be constructed at the Project site would be designed to meet seismic and geotechnical requirements. The new facilities would be subject to review and plan approval by the City, prior to and during construction. The City's Building and Safety Department would review project plans to ensure compliance with the latest seismic and geotechnical design provisions of the state and the City.	The Project will be consistent with this policy.
Objective PS-3	Minimize risks associated with the storage, transport and disposal of hazardous materials.	The Project will prepare and submit a *Hazardous Materials and Waste Management Plan* prior to certificate of occupancy for Phases I, II, III, IV, and V. All chemicals shall be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (22 CCR, Division 4.5). Also, in accordance with 40 CFR, Part 112, prior to certificate of occupancy issuance for all phases, Canyon Springs Marketplace Corporation, and/or future tenants will update their specific *Spill Prevention Control and Countermeasures Plan*.	The Project will be consistent with this objective.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Policy PS-3.1	Ensure that hazardous materials used in business and industry are handled properly.	See response to Objective PS-3. During operation of the Project, a *Hazardous Materials and Waste Management Plan* and *Spill Prevention Control and Countermeasures Plans* will be in place. Compliance with these plans will ensure that hazardous materials used in the businesses that would be operating on site would be handled properly.	The Project will be consistent with this policy.
Policy PS-3.5	Encourage sewer service to minimize groundwater contamination.	The Project will utilize the existing sewer connections for the site.	The Project will be consistent with this policy.
Objective PS-5	Provide safe pedestrian and bicyclist environments Citywide.	The Project will ensure safety through the separation of pedestrian routes from vehicular and bicycle traffic through the installation of sidewalks and walking paths within the Canyon Springs Healthcare Campus.	The Project will be consistent with this objective.
Policy PS-5.4	Require that new development provide adequate safety lighting in pedestrian areas and parking lots.	The Project will allow for implementation of the Specific Plan, which includes development standards and design guidelines relative to safety and lighting. In addition and as stated in Chapter 2, Project Description (see Table 2-2), a condition of Project approval would require compliance with the "Standard Lighting Condition" of City projects which reads as follows: An exterior lighting plan shall be submitted for Planning Division staff review and approval. A photometric study with manufacturer's cut sheets of all exterior lighting on buildings, in landscaped areas, and in parking lots shall be submitted with the study. All on-site lighting shall provide a minimum intensity of one-foot candle and a maximum of ten-foot candles at ground level throughout the areas serving the public and used for parking, with a ratio of average light to minimum light of four to one (4:1). Light poles shall not exceed 20 feet in height, including the height of any concrete or other base material. Light poles shall not exceed 14 feet in height, including the height of any concrete or other base material, within 50 feet of residential zones. Light sources shall be shielded to minimize off-site glare, shall not direct light skyward and shall be directed away from adjacent properties and public rights-of-ways. If lights are proposed to be mounted on buildings, down-lights shall be utilized. See Chapter 2, Project Description, for additional detail.	The Project will be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Noise Element			
Objective N-1	Minimize noise levels from point sources throughout the community and, wherever possible, mitigate the effects of noise to provide a safe and healthful environment.	Urban Crossroads prepared a Noise Impact Analysis (Appendix K) for the Project, which addressed existing and potential future noise levels generated by the Project. The noise impact analysis also analyzed potential impacts to proposed uses resulting from future vehicle noise from I-215, SR-60, Valley Springs Parkway, Day Street, Eucalyptus Avenue, and Gateway Drive. According to the Noise Impact Analysis, short-term construction impacts are exempt, as stated in Municipal Code Section 7.35.020. Project operation would cause a potentially significant increase in ambient noise levels in the Project vicinity. However, **MM-NOI-1** would require construction of a perimeter wall in specified areas for the Project, which would reduce the operational noise levels at adjacent sensitive receiver locations to below a level of significance. This measure would also address potential effects of operating the proposed helipad.	The Project will be consistent with this objective.
Policy N-1.2	Require the inclusion of noise-reducing design features in development consistent with standards in Figure N–10 (Noise/Land Use Compatibility Criteria), Title 24 California Code of Regulations and Title 7 of the Municipal Code.	The Project would comply with the City of Riverside's Municipal Code, Section 7.35, for construction activities. Prior to construction, a traffic control plan would be prepared and would include provisions for coordinating with local school hours to minimize noise from construction. The proposed Specific Plan design guidelines direct emergency vehicle access away from residential land uses to also limit noise impacts. Implementation of **MM-NOI-1** would help reduce the operational noise of the Project at nearby receivers.	The Project will be consistent with this policy.
Policy N-1.3	Enforce the City of Riverside Noise Control Code to ensure that stationary noise and noise emanating from construction activities, private developments/residences and special events are minimized.	The Project would comply with the City of Riverside's Municipal Code, Section 7.35, for construction activities.	The Project will be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Objective N-4	Minimize ground transportation-related noise impacts.	A Noise Impact Analysis was prepared for the Project and addressed transportation-related noise generated by the Project. According to the TIA (Appendix L) and the Noise Impact Analysis (Appendix K) prepared for the Project, traffic generated by the Project would influence traffic noise levels in surrounding off-site areas; however, the Project's contributions to roadway noise levels at adjacent sensitive land uses will be less than significant for Existing, Year 2016, and General Plan Buildout conditions.	The Project will be consistent with this objective.
Policy N-4.1	Ensure that noise impacts generated by vehicular sources are minimized through the use of noise reduction features (e.g., earthen berms, landscaped walls, lowered streets, improved technology).	See response to Objective N-4. Per **MM-NOI-1,** a perimeter wall would be constructed in specified areas for the Project.	The Project will be consistent with this policy.
		Air Quality Element	
Objective AQ-1	Adopt land use policies that site polluting facilities away from sensitive receptors and vice versa; improve job-housing balance; reduce vehicle miles traveled and length of work trips; and improve the flow of traffic.	The Project would help the City achieve this objective through implementation of TDM measures that would help reduce vehicle miles traveled. See response to Objective LU-8 for a discussion of TDM measures.	The Project will be consistent with this objective.
Policy AQ-1.3	Separate, buffer and protect sensitive receptors from significant sources of pollution to the greatest extent possible.	The closest off-site sensitive receptors to the Project site are single-family residences located adjacent to the south boundary of the Project site, north of Eucalyptus Avenue. The air quality analysis for construction impacts found that air quality emissions would not exceed the Localized Significance Thresholds for carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter less than or equal to 10 microns in diameter (PM_{10}), or particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$) at off-site sensitive receptors (Appendix H-1). Also, the air quality analysis for long-term operational impacts determined that Project operational emissions would not exceed the South Coast Air Quality Management District's (SCAQMD's) Localized Significance Thresholds for any criteria pollutant at the nearest sensitive receptor.	The Project will be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Policy AQ-1.20	Create the maximum possible opportunities for bicycles as an alternative work transportation mode.	The Project will help the City achieve this objective by providing development on a site that is accessible by a bicycle route (i.e., Eucalyptus Avenue). In addition, bicycle parking would be provided on the Canyon Springs Healthcare Campus.	The Project will be consistent with this policy.
Objective AQ-2	Reduce air pollution by reducing emissions from mobile sources.	The Project will implement several TDM measures, which would reduce vehicle miles traveled. See response to Objective LU-8 for a list of TDM measures. In addition, the Project will help provide medical services to an area that is currently underserved, which requires area residents to drive longer distances to access such services currently. By providing additional medical services in this area, local area residents will not have to travel such long distances to access necessary care, which will result in a reduction of vehicle miles traveled and a corresponding reduction in emissions from mobile sources.	The Project will be consistent with this objective.
Policy AQ-2.7	Use incentives, regulations and Transportation Demand Management in cooperation with surrounding jurisdictions to eliminate vehicle trips that would otherwise be made.	See responses to Objective LU-8 and Objective AQ-2. The Project will incorporate TDM practices such as bicycle parking, pedestrian pathways, and pedestrian connections to nearby transit stops. While the Project would not directly involve cooperation with surrounding jurisdictions to eliminate vehicle trips, its implementation would provide convenient medical services to both the City and the surrounding jurisdictions, thereby alleviating the need for residents of the City and of surrounding jurisdictions to travel in order to obtain medical care. Further, the Project will not preclude the City from coordinating with other jurisdictions to reduce vehicular trips.	The Project will be consistent with this policy.
Objective AQ-3	Prevent and reduce pollution from stationary sources, including point sources (such as power plants and refinery boilers) and area sources (including small emission sources such as residential water heaters and architectural coatings).	The Project will result in pollution from point sources, such as boilers and emergency generators, and area sources due to space heating, water heating, and landscaping. As stated in Section 2.5.2, a 2-level, approximately 22,000-square-foot central energy plant comprised of boilers, chillers, emergency generators, exchangers, transformers, switches, etc. will be constructed adjacent to the hospital during Phase II. As detailed in the Air Quality Impact Analysis (Appendix H-1) and the Greenhouse Gas Analysis (Appendix H-3) prepared for the Project, **MM-AQ-2** includes the implementation of measures	The Project will be consistent with this objective.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
		to reduce pollution from stationary sources such as the central energy plant. Measures include, but are not limited to: • Increase in insulation such that heat transfer and thermal bridging is minimized; • Use of energy-efficient space heating and cooling equipment; • Application of paint and surface color palette that emphasizes light and off-white colors that reflect heat away from buildings; and • Installation of Energy Star-qualified energy-efficient appliances, heating and cooling systems, office equipment, and/or lighting products.	
Policy AQ-3.4	Require projects to mitigate, to the extent feasible, anticipated emissions which exceed AQMP Guidelines.	According to the Air Quality Impact Analysis (Appendix H-1) and Greenhouse Gas Analysis (Appendix H-3) prepared for the Project, Project construction would exceed the thresholds of significance established by the SCAQMD for emissions of NO_x, and therefore**, MM-AQ-1** would be implemented to reduce impacts associated with construction emissions of NO_x to a less than significant level. During operations, the Project would exceed the numerical thresholds of significance established by the SCAQMD for emissions of volatile organic compounds (VOCs), NO_x, and CO. **MM-AQ-2** through **MM-AQ-6** would be applied to reduce these effects to the maximum extent feasible. However, even after mitigation, a potentially significant effect was still identified in association with operational emissions. There are no feasible mitigation measures beyond those that have been set forth in this EIR that are within the control of the Project applicant or the City of Riverside that would reduce these emissions to levels that are less than significant. As such, the Project will mitigate potential air emissions to the extent feasible.	The Project will be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Policy AQ-3.7	Require use of pollution control measures for stationary and area sources through the use of best available control activities, fuel/material substitution, cleaner fuel alternatives, product reformulation, change in work practices, and of control measures identified in the latest AQMP.	See response to Objective AQ-3. Per **MM-AQ-2**, the Project will be required to be designed to achieve 5% efficiency beyond the 2016 California Building Code Title 24 requirements. Energy consumption may be reduced through a variety of pollution control measures. Examples include increased insulation, limiting air leakage, use of energy-efficient space heating and cooling, and installation of Energy Star-qualified energy-efficient appliances.	The Project will be consistent with this policy.
Objective AQ-4	Reduce particulate matter, as defined by the Environmental Protection Agency (EPA), as either airborne photochemical precipitates or windborne dust.	As described in Policy AQ-3.4, Project construction emissions of particulate matter would not exceed SCAQMD maximum daily thresholds. Standard regulatory requirements/best available control measures including watering of all disturbed unpaved roads and disturbed areas at least three times a day; requiring that traffic speeds on unpaved roads and Project site areas are 15 miles per hour or less; and stopping all clearing, earth-moving, or excavation activities when winds exceed 25 miles per hour would be incorporated into Project construction plans and specifications to limit fugitive dust emissions.	The Project will be consistent with this objective.
Policy AQ-4.2	Reduce particulate matter from agriculture (e.g., require use of clean non-diesel equipment and particulate traps), construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way and off-road vehicles to the extent possible, as provided in SCAQMD Rule 403.	See response to Objective AQ-4; the Project includes standard regulatory requirements/best available control measures to reduce impacts from particulate matter.	The Project will be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Objective AQ-5	Increase energy efficiency and conservation in an effort to reduce air pollution.	**MM-AQ-2** requires the Project to be designed to achieve 5% efficiency beyond the 2016 California Building Code Title 24 requirements. Examples of energy-efficient features that may be incorporated into the Project to achieve the required efficiencies are provided in **MM-AQ-2** and are listed below. Compliance with **MM-AQ-2** would reduce impacts related to GHG emissions. • Increase in insulation such that heat transfer and thermal bridging is minimized; • Use of energy-efficient space heating and cooling equipment; • Installation of automatic devices to turn off lights when they are not needed; • Design of buildings with "cool roofs" using products certified by the Cool Roof Rating Council, and/or exposed roof surfaces using light and off-white colors; • Design of buildings to accommodate photovoltaic solar electricity systems or the installation of photovoltaic solar electricity systems; • Installation of Energy Star-qualified energy-efficient appliances, heating and cooling systems, office equipment, and/or lighting products.	The Project will be consistent with this objective.
Policy AQ-5.1	Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.	During both construction and operation of all phases, the Project will comply with all state and local statutes or regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act as amended and the City of Riverside Municipal Code, Title 6, Health and Sanitation. There are no federal regulations or statutes related to solid waste that apply to the Project. As noted above, during construction all wastes will be recycled to the maximum extent possible, and per **MM-UTL-2**, the Project shall prepare a recycling plan addressing how its construction waste will be recycled. All non-hazardous solid waste generated from the Project site once the Project is operational (such as plastic and glass bottles and jars, paper, newspaper, metal containers, and cardboard) will be recycled, with a goal of 75%, in compliance with the Integrated Waste Management Act. Incorporation of **MM-UTL-3** requires that the City approve recycling plans on the building plans for the Project, ensuring that proper space for recycling efforts has been allowed on the site.	The Project will be consistent with this policy.

Table 4.8-2
Project's Consistency with City of Riverside General Plan 2025

Goal/Policy	Goal/Recommendation	Proposed Project	Proposed Project Consistency/ Inconsistency
Policy AQ-5.6	Support the use of automated equipment for conditioned facilities to control heating and air conditioning.	The heating and air conditioning systems to be installed in support of Project buildings will be energy efficient.	The Project will be consistent with this policy.
		Historic Preservation Element	
Objective HP-5	To ensure compatibility between new development and existing cultural resources.	According to the Cultural Resources Inventory and Paleontological Sensitivity Study prepared for the Project (Appendix I), the Project as currently planned presents no potential to impact cultural resources. Furthermore, the study states that a review of Native American Heritage Commission and Eastern Information Center records did not indicate the presence of archaeological or built environment resources within the Project area (Appendix I). Lastly, based on inspection of subsurface exposures and the disturbed nature of the site, the study concluded that intact subsurface deposits are unlikely to be present. Additionally, mitigation is provided to ensure that cultural resources are protected, in the unlikely event that they are encountered during ground-disturbing construction activities. **MM-CUL-2** requires archaeological and Native American Tribal monitoring, and **MM-CUL-4** requires cultural sensitivity training so that construction personnel are aware of the protocols that apply in the event that unanticipated resources are discovered.	The Project will be consistent with this objective.
Policy HP-5.1	The City shall use its design and plot plan review processes to encourage new construction to be compatible in scale and character with cultural resources and historic districts.	The Project will allow for implementation of the Specific Plan, which includes development standards and design guidelines that consider the existing character of the Sycamore Canyon /Canyon Springs neighborhood. Based on a review of aerial photography, existing uses in the neighborhood include light industrial uses, office complexes, big-box retail and commercial retail development, surface parking lots, restaurants, medical offices, and vacant pads. An elementary school and single-family residences are located immediately south of Site C. Refer to response to Objective HP-5 regarding the cultural resource sensitivity of the Project site. According to Figure LU-5, Historic Fabric, of the City's General Plan, the Project site is not located within a designated historic district or a potential historic district.	The Project will be consistent with this policy.

To ensure consistency between the Specific Plan and the City's General Plan 2025, the General Plan will be amended concurrently with the adoption of the Specific Plan to incorporate and recognize that the "Canyon Springs Healthcare Campus Specific Plan" land use designation replaces the commercial zoning and "Canyon Springs Business Park Specific Plan" designations for that area. The Project is consistent with General Plan 2025 Goal LU-30 and associated policies that provide for the use of "Area Plans, Community Plans, or Specific Plans" as part of the General Plan 2025 to address detailed design, land use, and policy direction for a particular area within the City. Therefore, with implementation of the Specific Plan and the amendment to the General Plan 2025, the Project would be consistent, and impacts are considered less than significant. No mitigation is required.

Encroachment Permits

The Riverside County Flood Control and Water Conservation District (RCFCWCD) submitted an NOP comment letter dated March 28, 2016 (Appendix A), stating that the Project is adjacent to the RCFCWCD's Canyon Springs Basin and that any work that involves or affects RCFCWCD's rights-of-way, easement, or facilities will require an encroachment permit from RCFCWCD. Similarly, the Department of Water Resources (DWR) submitted an NOP comment letter dated April 19, 2016 (Appendix A), stating that the Project overlies the DWR right-of-way for the Santa Ana Pipeline and will require an encroachment permit or agreement from DWR. As such, the applicant's contractor would be required to obtain all necessary encroachment permits prior to construction and would also be required to comply with all applicable encroachment permit guidelines and any permit conditions. Upon obtaining the required permits and complying with the stipulations of the permits, the Project would comply with the land use adjacency regulations associated with RCFCWCD and DWR rights-of-way, easement, or facilities. Impacts are considered **less than significant**. No mitigation is required.

Municipal Code Consistency

To ensure consistency between the Specific Plan and the City of Riverside Municipal Code, Title 19, Zoning Code, the Zoning Map will be amended concurrent with adoption of Specific Plan to include a Canyon Springs Healthcare Campus Specific Plan zone to replace the existing CR SP – Commercial Retail and Specific Plan (CSBPSP) Overlay Zones and O SP – Office and Specific Plan (*Canyon Springs Business Park Specific Plan*) Overlay Zones. The existing zoning designations are shown on Figure 2-7 in Chapter 2. The Specific Plan also complies with Chapter 19.820, Specific Plan/Specific Plan Amendments, of the City of Riverside Zoning Code; all other applicable ordinances of the City of Riverside would be adopted by resolution in accordance with the provisions of the Municipal Code. Therefore, the Project is consistent with the City of Riverside Municipal Code, and impacts are considered **less than significant**.

Where land use regulations and/or design standards of the City of Riverside Zoning Code are inconsistent with the Specific Plan, the standards and regulations of the Specific Plan shall prevail. Any issue not specifically covered in the Specific Plan would be subject to the City of Riverside

Zoning Code. Interpretations may be made by the Community Development Director or referred to the Planning Commission if not specifically covered in the City's existing regulations.

As demonstrated above, the Project will be consistent with the applicable plans, policies, and regulations related to land use upon adoption of the proposed amendments to the General Plan 2025 and Zoning Map; therefore, impacts are considered **less than significant with mitigation** identified in Section 4.2, Air Quality; Section 4.4, Cultural Resources; Section 4.9, Noise; Section 4.11, Transportation/Traffic; and Section 4.12, Utilities and Service Systems. No further mitigation is required.

Threshold LU-2: Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

The Project is subject to compliance with the Western Riverside MSHCP because the City of Riverside is a Permittee to the MSHCP. There are no riparian/riverine or vernal pool habitats present, and the Project site is not adjacent to any conservation areas; therefore, the Project is not subject to the requirements as defined in Sections 6.1.2 and 6.1.4 of the MSHCP, respectively. The Project site is not located within any Narrow Endemic Plant Species Survey Areas as defined in Section 6.1.3 of the MSHCP; therefore, the Project is not subject to any habitat assessment or survey requirements for Narrow Endemic Plant Species Survey Areas species of the MSHCP. The Project site is not located within a Criteria Area Species Survey Area as defined in Section 6.3.2 of the MSHCP; therefore, the Project is not subject to any habitat assessment or survey requirements for Criteria Area Species Survey Area species. The Project site is located within an additional survey area as defined in Section 6.3.2 of the MSHCP for burrowing owls (*Athene cunicularia*); therefore, a habitat assessment was conducted, as discussed in Section 4.3.5 of this EIR, and focused burrow surveys would be conducted (see **MM-BIO-2**) prior to commencement of construction. The Project would participate in the MSHCP through the payment of the Local Development Mitigation Fee at the time building permits are issued, pursuant to the provisions of Chapter 16.72 of the Riverside Municipal Code. Further and in regards to nesting birds, the entire Project site provides suitable habitat for nesting birds. Direct impacts to migratory birds must be avoided in accordance with the Migratory Bird Treaty Act and Fish and Game Code, and as such, **MM-BIO-3** (implement a pre-activity nesting bird survey if construction activities are scheduled to occur during the avian nesting season) would be incorporated as part of implementing the Project.

Therefore, with the implementation of applicable mitigation measures, and as discussed above, the Project would not conflict with the MSCHP. Impacts would be **less than significant with mitigation** identified in Section 4.3, Biological Resources. No further mitigation is required.

4.8.6 Mitigation Measures

The State CEQA Guidelines (14 CCR 15126.4) require EIRs to describe feasible measures that can minimize significant adverse impacts. As described in Table 4.8-2, impacts related to

conflicts with applicable land use policies adopted for the purpose of avoiding or mitigating environmental effects would be less than significant with the implementation of mitigation related to air quality (**MM-AQ-1** through **MM-AQ-6**), cultural resources (**MM-CUL-2** and **MM-CUL-4**), noise (**MM-NOI-1**), transportation/traffic (**MM-TRAF-1** through **MM-TRAF-13**), and utilities and service systems (**MM-UTL-2** and **MM-UTL-3**). Impacts related to conflicts with applicable conservation plans have been found to be less than significant with the implementation of mitigation related to biological resources (see **MM-BIO-2** and **MM-BIO-3** in Section 4.3). No land use-specific mitigation measures are necessary.

4.8.7 Environmental Impacts After Mitigation Is Incorporated

With adoption of the proposed General Plan 2025 and Zoning Code amendments, implementation of the Project would not conflict with an adopted plan, policy, or regulation established to avoid environmental effects. As described above, the Project would not result in any significant land use-specific impacts with the implementation of mitigation measures related to air quality, biological resources, cultural resources, noise, transportation/traffic, and utilities and service systems. Impacts after mitigation would be less than significant.

4.8.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

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4.9 NOISE

The focus of the following discussion and analysis is based on the Initial Study and Notice of Preparation (IS/NOP) (Appendix A) and comments received during the NOP public comment period. This section:

- Describes the existing noise setting
- Identifies relevant regulatory requirements
- Evaluates potentially adverse impacts related to noise
- Identifies mitigation measures (MMs) related to implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project)

The focus of the following analysis per the IS/NOP (Appendix A) is related to the potential impacts related to the exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels; whether the Project will result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project; and whether the Project will result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. The IS found the Project to have less than significant or no impacts related to being located within an airport land use plan or, within 2 miles of a public airport or public use airport, or within the vicinity of a private airstrip such that the Project will expose people residing or working in the Project area to excessive noise levels. Therefore, noise impacts associated with airport operations are not addressed further in this Draft Environmental Impact Report (EIR). However, the potential noise impacts resulting from the use of helicopters at the Project site are analyzed in this section as part of overall Project operational impacts, as the use of helicopters is part of future hospital operations.

4.9.1 Setting

The Project site is located in an urbanized environment and is subject to typical urban noises, such as noise generated by traffic, heavy machinery, and day-to-day outdoor activities. The predominant noise sources at the site include traffic noise associated with the adjacent roadways including Eucalyptus Avenue, Valley Springs Parkway, Corporate Centre Place, Campus Parkway, Gateway Drive, Canyon Park Drive, and Day Street. “Transportation noise” typically refers to noise from automobile use, trucking, airport operations, and rail operations. “Stationary noise” typically refers to noise from sources such as hospital operations; heating, ventilation, and air conditioning (HVAC) systems, and compressors; and landscape maintenance equipment. Regardless of the type

of noise, the noise levels are highest near the source and decrease with distance. The results of site-specific ambient noise measurements are discussed later in this section.

Noise Characteristics

Sound may be described in terms of level or amplitude (measured in decibels (dB)), frequency or pitch (measured in hertz (Hz) or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the amplitude of sound is the decibel. Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against low and very high frequencies in a manner approximating the sensitivity of the human ear. Table 4.9-1 provides examples of A-weighted noise levels from common sounds (reproduced from *City of Riverside General Plan 2025*, Noise Element, Table N-2, 2007).

Table 4.9-1
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
—	110	Rock band
Jet flyover at 300 meters (1,000 feet)	105	
	100	
Gas lawn mower at 1 meter (3 feet)	95	
	90	
	85	Food blender at 1 meter (3 feet)
Diesel truck at 15 meters (50 feet), at 80 kph (50 mph)	80	Garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime	75	
Gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area	65	Normal speech at 1 meter (3 feet)
Heavy traffic at 90 meters (300 feet)	60	
	55	Large business office
Quiet urban during daytime	50	Dishwasher in next room
	45	
Quiet urban area during nighttime	40	Theater, large conference room (background)
Quiet suburban area during nighttime	35	
	30	Library
Quiet rural area during night time	25	Bedroom at night, concert hall (background)
	20	
	15	Broadcast/recording studio
	10	
	5	
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: City of Riverside 2007
Notes: kph = kilometers per hour; mph = miles per hour

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech interference, sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and local agencies have established criteria to protect public health and safety, to prevent disruption of certain human activities, and to minimize annoyance.

Several descriptors of noise (noise metrics) exist to help predict average community reactions to the adverse effects of environmental noise, including traffic-generated noise, on a community. These descriptors include the equivalent noise level over a given period (L_{eq}), the day–night average noise level (L_{dn}), and the community noise equivalent level (CNEL). Each of these descriptors uses units of dBA.

L_{eq} is a sound energy level averaged over a specified time period (usually 1 hour). L_{eq} is a single numerical value that represents the amount of variable sound energy received by a receptor during a time interval. For example, a 1-hour L_{eq} measurement would represent the average amount of energy contained in all the noise that occurred in that 1 hour. L_{eq} is an effective noise descriptor because of its ability to assess the total time-varying effects of noise on sensitive receptors. L_{max} is the greatest sound level measured during a designated time interval or event. Another common sound level metric is the statistical or percentile level. The percentile noise descriptors are the noise levels equaled or exceeded during 50%, 25%, 8%, and 2% of a stated time. Sound levels associated with the L_2 and L_8 typically describe transient or short-term events, while levels associated with the L_{50} describe the steady state (or median) noise conditions. The City of Riverside (City) relies on the percentile noise levels to describe the stationary source noise level limits. While the L_{50} describes the mean noise levels occurring 50% of the time, the L_{eq} accounts for the total energy (average) observed for the entire hour. Therefore, the L_{eq} noise descriptor is generally 1–2 dBA higher than the L_{50} noise level.

Unlike the L_{eq} metric, L_{dn} and CNEL metrics always represent 24-hour periods, usually on an annualized basis. L_{dn} and CNEL also differ from L_{eq} because they apply a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when speech and sleep disturbance is of more concern). "Time weighted" refers to the fact that L_{dn} and CNEL penalize noise that occurs during certain sensitive periods. In the case of CNEL, noise occurring during the daytime (7:00 a.m.–7:00 p.m.) receives no penalty. Noise during the evening (7:00 p.m.–10:00 p.m.) is penalized by adding 5 dB, while nighttime (10:00 p.m.–7:00 a.m.) noise is penalized by adding 10 dB. L_{dn} differs from CNEL in that the daytime period is defined as 7:00 a.m.–10:00 p.m., thus eliminating the evening period. L_{dn} and CNEL are the predominant criteria used to measure roadway noise affecting residential receptors. These two metrics generally differ from one another by no more than 0.5 to 1 dB.

Vibration Characteristics

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as blasting, pile driving, and heavy earth-moving equipment.

Several different methods are used to quantify vibration, including the peak particle velocity (PPV) and the root mean square amplitude (RMS). The PPV is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The RMS amplitude is most frequently used to describe the effect of vibration on the human body and is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration. With reference to vibration levels measured using these means, the following discussion addresses the nature of vibration impacts on buildings and humans.

High levels of vibration may cause physical personal injury or damage to buildings. However, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high levels of vibration can damage fragile buildings or interfere with equipment that is highly sensitive to vibration (e.g., electron microscopes). Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would be considered noise- and vibration-sensitive and may warrant unique measures for protection from intruding noise. Sensitive receptors near the Project site include the following:

- Residences located approximately 11 feet south of the Project site; and
- A school (Edgemont Elementary School) located approximately 11 feet south of the Project site.

Note that the above-referenced 11-foot distance represents a proposed linear landscaping and walkway feature to be located along the southern property boundary, thus creating a setback between the closest Project buildings and the property boundary for the adjacent noise-sensitive uses to the south. The 11-foot distance represents the property line for the noise-sensitive uses, at which a residential rear yard or school exterior play area may exist.

The above sensitive receptors represent the nearest residences and school with the potential to be impacted by the Project. In addition to the off-site receptors listed above, the multifamily residential community located southeast of the Project site (the apartment complex on the south side of Eucalyptus Avenue and east side of Day Street) is also considered a sensitive receptor. Additional sensitive receptors are located farther from the Project site in the surrounding community and will be less impacted by noise and vibration levels than the above-listed sensitive receptors.

Existing Noise Conditions

Currently, the Project site does not generate noise as the site is currently vacant and undeveloped. The ambient noise environment encompassing the Project site is strongly influenced by traffic noise associated with adjacent roadways including Eucalyptus Avenue, Valley Springs Parkway, Corporate Centre Place, Campus Parkway, Gateway Drive, Canyon Park Drive, and Day Street.

Existing stationary noise sources near the Project site include loading docks north of Corporate Centre Place at the existing Walmart store; the loading dock and trash compactor located north of Campus Parkway at the existing Target store; three fast food restaurants with drive-thru speakerphones along the eastern right-of-way of Day Street: Panda Express and Baker's drive-thru restaurants located north of Gateway Drive and Portillo's Hot Dogs drive-thru restaurant, located south of Gateway Drive. The existing traffic noise along the adjacent roadways and existing stationary noise sources near the Project site are included in the ambient noise level measurement results presented in Table 4.9-2.

To assess the existing noise level environment, Urban Crossroads conducted nine, 24-hour noise level measurements (L1–L9) at represented sensitive receptor locations in the Project study area from January 22, 2014, through January 23, 2014. The receptor locations were selected to describe and document the existing noise environment within the Project study area (Figure 4.9-1). Each of the measurement locations is described below.

Location **L1** was approximately 212 feet south of the Project site and represented the off-site unmitigated exterior noise levels south of Eucalyptus Avenue from Edgemont Elementary School in the City of Moreno Valley.

Location **L2** was at an existing single-family residence along Eucalyptus Avenue immediately south of the hospital, medical office buildings (MOBs), and parking structure site (Site C) in the City of Moreno Valley, and represented the unmitigated noise levels for residences along Eucalyptus Avenue.

Location **L3** was at the northwest boundary of Edgemont Elementary School and represented the unmitigated noise levels at Edgemont Elementary School in the City of Moreno Valley.

Location **L4** was at the southeast corner of Valley Springs Parkway and Corporate Centre Place and represented the unmitigated noise levels at the future location of the parking lot for the senior housing facility site (Site A), in the City of Riverside.

Location **L5** was approximately 225 feet north of the planned senior housing facility site (Site A) and represented the off-site unmitigated exterior noise levels at the southern corner of Corporate Center Place and Campus Parkway, in the City of Riverside.

Location **L6** represented the unmitigated noise levels at the property line between the proposed senior housing facility site (Site A) and the existing County Clerk's office building.

Location **L7** represented the existing unmitigated noise levels along Canyon Park Drive at the future independent living, assisted living, and skilled nursing facility site (Site B), in the City of Riverside.

Location **L8** represented the existing unmitigated noise levels at the southwestern portion of the future independent living, assisted living, and skilled nursing facility site (Site B), in the City of Riverside.

Location **L9** represented the existing unmitigated noise levels at the southeastern portion of the future independent living, assisted living, and skilled nursing facility site (Site B), in the City of Riverside.

The background ambient noise levels in the Project study area are dominated by transportation-related noise associated with the arterial roadway network. This includes the auto and heavy truck activities near the noise level measurement locations. Secondary background ambient noise is also included in the noise level measurements from existing stationary noise sources such as commercial loading docks and drive-thru speakerphones in the Project study area; however, these impacts are generally overshadowed by the nearby vehicular traffic noise levels. Table 4.9-2 provides the 24-hour noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Table 4.9-2 also includes the 24-hour existing noise level measurements which presents the worst-case existing unmitigated ambient noise conditions.

Table 4.9-2
24-Hour Ambient Noise Level Measurements

Receptors[1]	Jurisdiction	Distance from Project Site (Feet)	Description	Hourly Noise Level (dBA L_{eq})[2]		CNEL
				Daytime[3]	*Nighttime*[4]	
L1	City of Moreno Valley	212	Located south of Edgemont Elementary School across Eucalyptus Avenue, in a vacant lot.	69.4	66.4	73.5
L2	City of Moreno Valley	0	Located adjacent to existing single-family residential homes along the southern boundary of the proposed MOB 3 and MOB 4.	52.0	53.7	60.0
L3	City of Moreno Valley	0	Located at the northern property line of the Edgemont Elementary School, east of the proposed hospital.	50.7	55.9	61.8
L4	City of Riverside	0	Located at the southeast corner of Valley Springs Parkway and Corporate Centre Place, at the future location of the senior housing site (Site A) parking lot.	58.2	55.8	62.9
L5	City of Riverside	225	Located north of the future senior housing development at the southern corner of Corporate Centre Place and Campus Parkway.	59.6	55.9	63.4
L6	City of Riverside	0	Located at the northern property line of the Riverside County Clerk's office building.	54.5	57.5	63.7
L7	City of Riverside	0	Located along Canyon Park Drive at the future location of the independent living facility (Site B).	52.0	48.4	56.2
L8	City of Riverside	0	Located north of Gateway Drive at the future location of the assisted living building (Site B).	63.5	57.2	65.7
L9	City of Riverside	0	Located at the northwestern corner of Day Street and Gateway Drive within the Project site, east of the proposed skilled nursing facility (Site B).	63.5	58.2	66.3

Notes: dBA = A-weighted decibel scale; L_{eq} = equivalent continuous sound level (time-averaged sound level); CNEL = community noise equivalent level; MOB = medical office building

1 Refer to Figure 4.9-1.

2 Energy (logarithmic) average hourly levels. The long-term 24-hour measurement printouts are included in Appendix 5.2 of Appendix K.

3 "Daytime" for measurements taken in the City of Riverside represents 7:00 a.m. to 10:00 p.m., and 8:00 a.m. to 10:00 p.m. for measurements taken in the City of Moreno Valley.

4 "Nighttime" for measurements taken in the City of Riverside represents 10:00 p.m. to 7:00 a.m., and 10:01 p.m. to 7:59 a.m. for measurements taken in the City of Moreno Valley.

The noise measurements were made using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in slow mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. The sound level meter meets the current American National Standards Institute (ANSI) standard for a Type 2 (General Use) sound level meter.

4.9.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

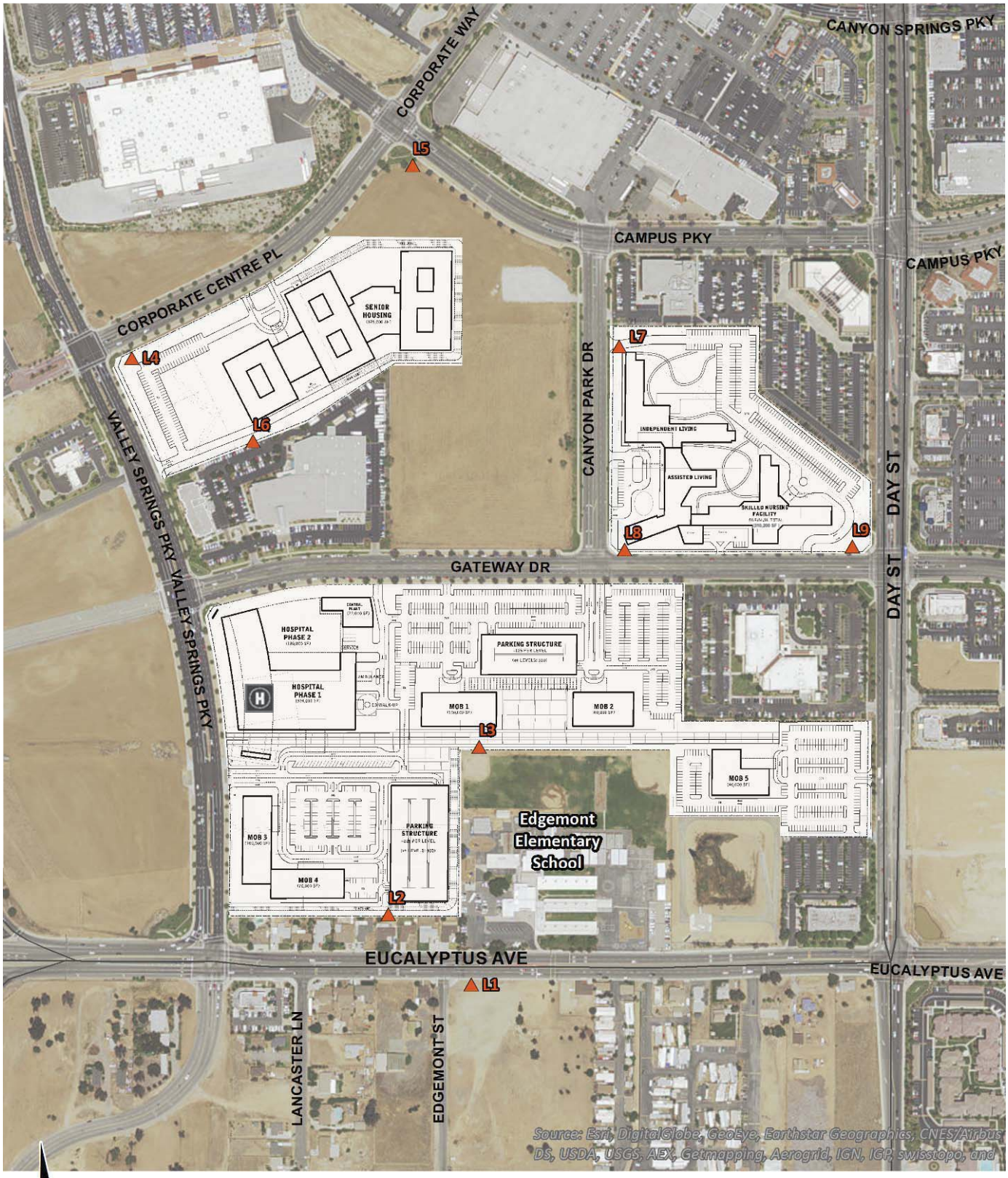
The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce;
- Assisting state and local abatement efforts; and
- Promoting noise education and research.

The Federal Office of Noise Abatement and Control was initially tasked with implementing the Noise Control Act. However, the Office of Noise Abatement and Control has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration prohibits exposure of workers to excessive sound levels. The U.S. Department of Transportation assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA) and Federal Highway Administration. Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or, alternately, that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

The Project will comply with the appropriate Occupational Safety and Health Administration regulations relative to worker exposure to noise during Project construction and operation.



SOURCE: Urban Crossroads, 2017

FIGURE 4.9-1
Noise Measurement Locations

DUDEK

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State

California General Plan Guidelines

The California General Plan Guidelines, published by the Governor's Office of Planning and Research, provide guidance for the acceptability of specific land use types within areas of specific noise exposure. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. Governor's Office of Planning and Research guidelines are advisory in nature. Local jurisdictions, including the City of Riverside, have the responsibility to set specific noise standards based on local conditions. Please refer to the discussion below, under City of Riverside Noise Element, for the compatibility guidelines adopted by the City of Riverside.

California Code of Regulations Title 24

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation. State regulations governing noise levels generated by individual motor vehicles and occupational noise control are not applicable to planning efforts, nor are these areas typically subject to California Environmental Quality Act (CEQA) analysis. State noise regulations and policies applicable to the Project include Title 24 requirements and noise exposure limits for various land use categories.

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for residential buildings (California Code of Regulations Title 24, Part 2, Chapter 12, Section 1207.11.2). Title 24 establishes standards for interior room noise attributable to outside noise sources. Title 24 also specifies that acoustical studies should be prepared whenever a residential building or structure is to be located in areas with exterior noise levels 60 dB L_{dn} or greater. The acoustical analysis must show that the building has been designed to limit intruding noise to an interior level not exceeding 45 dB L_{dn} for any habitable room. It should be noted that this condition addresses the existing environment and interior noise levels which could be associated with the existing environment. This discussion is included for informational purposes, and the effects are not considered to be an environmental impact of the Project under CEQA.

Vibration Standards

CEQA states that the potential for any excessive groundborne noise and vibration levels must be analyzed; however, it does not define the term "excessive" vibration. The construction-related vibration standards provided by the U.S. Department of Transportation FTA are used in this

analysis to assess the potential vibration impacts due to Project construction. The FTA identifies guidelines for maximum-acceptable vibration criteria for different types of land uses. These guidelines allow 80 VdB for residential uses and buildings where people normally sleep.

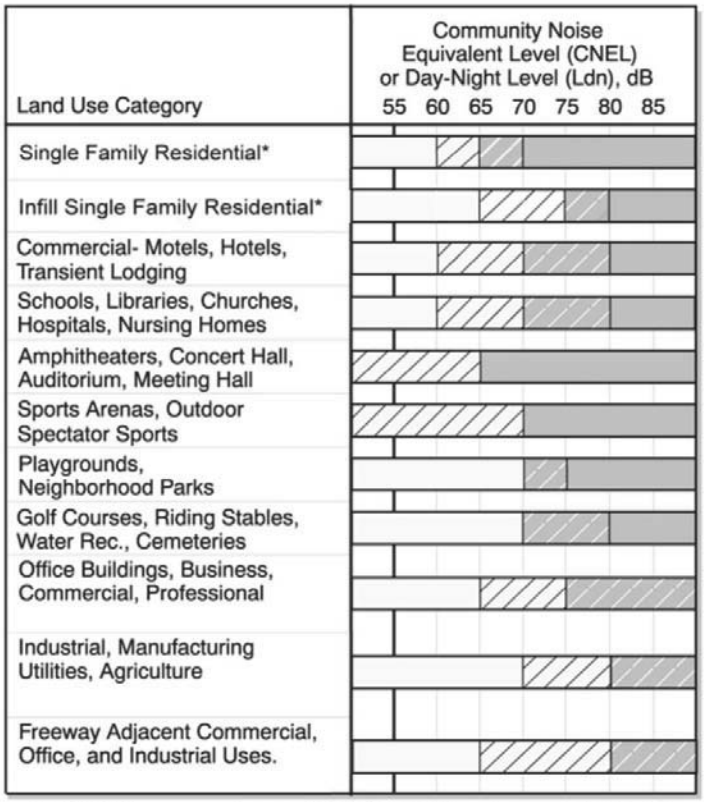
Construction activity can result in varying degrees of groundborne vibration, depending on the equipment and methods used, distance to the affected structures, and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration. Occasionally, large bulldozers and loaded trucks can cause perceptible vibration levels at close proximity. While not enforceable regulations within the City of Riverside, the FTA guidelines of 80 VdB for sensitive land uses provide the basis for determining the relative significance of potential Project-related vibration impacts.

Local

City of Riverside General Plan 2025 – Noise Element

In compliance with California Government Code Section 65302, the *City of Riverside General Plan 2025* Noise Element identifies noise and land use compatibility criteria that identifies "Normally Acceptable," "Conditionally Acceptable," "Normally Unacceptable," and "Conditionally Unacceptable" noise exposure ranges for various land uses, as shown in Table 4.9-3, Noise/Land Use Compatibility Criteria (Figure N-10 of General Plan 2025). Based on the City of Riverside adopted Noise/Land Use Noise Compatibility Criteria, the City considers a CNEL greater than 75 dBA to be normally unacceptable for commercial uses, a CNEL greater than 70 dBA to be normally unacceptable for hospital operations, and a CNEL greater than 65 dBA to be normally unacceptable for single-family residential uses. These standards are primarily used for planning purposes such as determining a project's compatibility with a proposed site with regard to existing and future acoustical impacts upon a project site sourced from the surrounding environment. In other words, the noise impacts from existing surrounding land uses to a proposed project. Definitions of the noise compatibility ranges are provided below.

Table 4.9-3
Noise/Land Use Compatibility Criteria



Nature of the noise environment where the CNEL or Ldn level is:

Below 55 dB
Relatively quiet suburban or urban areas, no arterial streets within 1 block, no freeways within 1/4 mile.

55-65 dB
Most somewhat noisy urban areas, near but not directly adjacent to high volumes of traffic.

65-75 dB
Very noisy urban areas near arterials, freeways or airports.

75+ dB
Extremely noisy urban areas adjacent to freeways or under airport traffic patterns. Hearing damage with constant exposure outdoors.

Normally Acceptable

Specific land use is satifactory, based on the assumption that any building is of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable

New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Normally Unacceptable

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in design.

Conditionally Unacceptable

New construction or development should generally not be undertaken, unless it can be demonstrated that noise reduction requirements can be employed to reduce noise impacts to an acceptable level. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

The Community Noise Equivalent Level (CNEL) and Day-Night Noise Level (Ldn) are measures of the 24-hour noise environment. They represent the constant A-weighted noise level that would be measured if all the sound energy received over the day were averaged. In order to account for the greater sensitivity of people to noise at night, the CNEL weighting includes a 5-decibel penalty on noise between 7:00 p.m. and 10:00 p.m. and a 10-decibel penalty on noise between 10:00 p.m. and 7:00 a.m. of the next day. The Ldn includes only the 10-decibel weighting for late-night noise events. For practical purposes, the two measures are equivalent for typical urban noise environments.

* For properties located within airport influence areas, acceptable noise limits for single family residential uses are established by the Riverside County Airport Land Use Compatibility Plan.

SOURCE: STATE DEPARTMENT OF HEALTH, AS MODIFIED BY THE CITY OF RIVERSIDE

Source: City of Riverside 2007a

The "Normally Acceptable" range is defined as specific land use is satisfactory, based on the assumption that any building is of normal conventional construction, without any special noise insulation requirements.

The "Conditionally Acceptable" range is defined as new construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

The "Normally Unacceptable" range is defined as new construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in design.

The "Conditionally Unacceptable" range is defined as new construction or development should generally not be undertaken, unless it can be demonstrated that noise-reduction requirements can be employed to reduce noise impacts to an acceptable level. If new construction or development does proceed, a detailed analysis of noise-reduction requirements must be made and needed noise insulation features included in the design.

The *City of Riverside General Plan 2025* Noise Element examines noise sources in the City by identifying and appraising the potential for noise conflicts and ways to reduce existing and potential impacts to sensitive receptors. In particular, the Noise Element contains policies and programs to achieve and maintain noise levels compatible with various types of land uses. The Noise Element addresses noise that affects the community at large, rather than noise associated with site-specific conditions. However, the programs in the Noise Element do address effective strategies to reduce and limit community exposure to loud noise sources. The following selected objectives and policies related to noise standards for construction-related, point source, and transportation-related sources will be applied to the Project (City of Riverside 2007a):

Objective N-1: Minimize noise levels from point sources throughout the community and, wherever possible, mitigate the effects of noise to provide a safe and healthful environment.

Policy N-1.2: Require the inclusion of noise-reducing design features in development consistent with standards in [Table 4.9-3, Noise/Land Use Compatibility Criteria], Title 24 California Code of Regulations and Title 7 of the Municipal Code.

Policy N-1.3: Enforce the City of Riverside Noise Control Code to ensure that stationary noise and noise emanating from construction activities, private developments/residences and special events are minimized.

Policy N-1.4: Incorporate noise considerations into the site plan review process, particularly with regard to parking and loading areas, ingress/egress points, and refuse collection areas.

Policy N-1.5: Avoid locating noise-sensitive land uses in existing and anticipated noise-impacted areas.

Policy N-1.7: Evaluate noise impacts from roadway improvement projects by using the City's Acoustical Assessment Procedure.

Policy N-1.8: Continue to consider noise concerns in evaluating all proposed development decisions and roadway projects.

Objective N-4: Minimize ground transportation-related noise impacts.

Policy N-4.1: Ensure that noise impacts generated by vehicular sources are minimized through the use of noise reduction features (i.e., earthen berms, landscaped walls, lowered streets, improved technology).

Policy N-4.5: Use speed limit controls on local streets as appropriate to minimize vehicle traffic noise.

Policy CCM-2.9: Design all street improvement projects in a comprehensive fashion to include consideration of street trees, pedestrian walkways, bicycle lanes, equestrian pathways, signing, lighting, noise, and air quality wherever any of these factors are applicable.

The City has established maximum noise levels for receiving uses that include the contribution from roadway traffic noise. However, the City does not have a specific noise criterion for evaluating off-site noise impacts to residences or noise-sensitive areas from Project-related traffic, where the overall noise exposure will remain within acceptable levels. In other words, what increase (expressed in dBA) in traffic noise levels will be considered a "significant" impact? Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern changes in sound levels of 1 dB when exposed to steady, single-frequency signals in the mid-frequency range. Outside such controlled conditions, the trained ear can detect changes of 2 dB in normal environmental noise. The average healthy ear can barely perceive noise level changes of 3 dB. A change of 5 dB is readily perceptible, and a change of 10 dB is perceived as twice as loud or half as loud. As noted in the City's *Final General Plan 2025 Program EIR* (City of Riverside 2007b), noise analysis methodology is accurate only to the

nearest whole decibel, and most people only notice a change in the noise environment when the difference in noise levels is around 3 dB. An increase or decrease in noise level of at least 5 dB is required before any noticeable change in community response will be expected. Therefore, a clearly perceptible increase (+5 dB) in noise exposure of sensitive receptors could be considered significant (City of Riverside 2007b). For the purposes of this noise analysis, impacts are considered significant when they cause an increase of 5 dB from existing noise levels or exceed the 65 dBA CNEL noise threshold at properties zoned or developed for residential uses (65 dBA CNEL is the upper limit of "conditionally acceptable" for residential properties).

Riverside Municipal Code Title 7, Noise Control

Title 7 of the Riverside Municipal Code, described below, establishes noise performance criteria to guard against exposure of residential and other noise-sensitive uses to loud industrial-related noise. The City has determined that certain noise levels are detrimental to public health, safety, and welfare and are, therefore, contrary to public interest. In order to control unnecessary, excessive and/or annoying noise in the City, minimize noise levels, and mitigate the effects of noise so as to provide a safe and healthy living environment (Title 7, Section 7.05.010), Title 7, Noise Control, of the Riverside Municipal Code, provides general regulations with regard to noise that is produced in the City (City of Riverside 2007c).

Noise impacts projected onto adjacent properties from the Project are regulated by Sections 7.25.010 and 7.35.010 of the Riverside Municipal Code. These sections provide general regulations with regard to noise that is produced and projected onto surrounding land uses. These limits are applicable to noise generated as a result of the Project's temporary construction and ongoing operational activities.

The maximum noise levels that can be emitted from the Project site upon the nearest point of neighboring land uses (per the Riverside Municipal Code) are shown in Table 4.9-4 (City of Riverside Municipal Code Exterior Nuisance Sound Level Limits).

Table 4.9-4
City of Riverside Municipal Code Exterior Nuisance Sound Level Limits

Land Use Category	Time Period	Noise Level
Residential	Night (10 p.m. to 7 a.m.) Day (7 a.m.. to 10 p.m.)	45 dBA 55 dBA
Office/commercial	Any time	65 dBA
Industrial	Any time	70 dBA
Community support	Any time	60 dBA
Public recreation facility	Any time	65 dBA
Nonurban	Any time	70 dBA

Source: City of Riverside 2007c.

Section 7.25.010 of the Riverside Municipal Code also provides criteria that apply to any exceedance of the limits present in Table 4.9-4, above. These criteria are primarily used for the purposes of code enforcement, but are provided here to outline the parameters by which a noise exceedance will be evaluated. The applicable criteria state:

A. Unless a variance has been granted as provided in this chapter, it shall be unlawful for any person to cause or allow the creation of any noise which exceeds the following:

   1. The exterior noise standard of the applicable land use category, up to 5 decibels, for a cumulative period of more than 30 minutes in any hour; or

   2. The exterior noise standard of the applicable land use category, plus 5 decibels, for a cumulative period of more than 15 minutes in any hour; or

   3. The exterior noise standard of the applicable land use category, plus 10 decibels, for a cumulative period of more than 5 minutes in any hour; or

   4. The exterior noise standard of the applicable land use category, plus 15 decibels, for the cumulative period of more than 1 minute in any hour; or

   5. The exterior noise standard for the applicable land use category, plus 20 decibels or the maximum measured ambient noise level, for any period of time.

B. If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category, as appropriate, to encompass the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

C. If possible, the ambient noise level shall be measured at the same location along the property line with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, then the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance that the offending noise is inaudible. If the measurement location is on the boundary between two different districts, the noise shall be the arithmetic mean of the two districts.

Chapter 7.35 of the Riverside Municipal Code provides general noise regulations. Section 7.35.010(B), in part, states the following:

B. It is unlawful for any person to make, continue, or cause to be made or continued any disturbing, excessive or offensive noise which causes discomfort or annoyance to

reasonable persons of normal sensitivity. The following acts, among others, are declared to be disturbing, excessive, and offensive noises in violation of this section:

4. Loading and Unloading: Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects, or permitting these activities between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential property line or at any time exceeds the maximum permitted noise level for the underlying land use category.

5. Construction: Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, grading or demolition work between the hours of 7:00 p.m. and 7:00 a.m. on week days and between 5:00 p.m. and 8:00 a.m. on Saturdays or at any time on Sunday or federal holidays.

Exemptions to the regulations in Title 7 of the Riverside Municipal Code are identified in Section 7.35.020. Included among the exempted activities are:

E. Right-Of-Way Construction. The provisions of this Title shall not apply to any work performed in the City right-of-ways when, in the opinion of the Public Works Director or his designee, such work will create traffic congestion and/or hazardous or unsafe conditions.

F. Public Health, Welfare and Safety Activities. The provisions of this Title shall not apply to construction maintenance and repair operations conducted by public agencies and/or utility companies or their contractors which are deemed necessary to serve the best interests of the public and to protect the public health, welfare and safety, including but not limited to, trash collection, street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, vacuuming catch basins, repairing of damaged poles, removal of abandoned vehicles, repairing of water hydrants and mains, gas lines, oil lines, sewers, storm drains, roads, sidewalks, etc.

G. Noise sources associated with construction, repair, remodeling, or grading of any real property; provided a permit has been obtained from the City as required; and provided said activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 5:00 p.m. and 8:00 a.m. on Saturdays, or at any time on Sunday or a federal holiday.

4.9.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.), were used to determine the significance of impacts related to noise. Based on the IS (Appendix A) and Appendix G of the State CEQA Guidelines, impacts from noise will be significant if the Project will:

- Result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- Result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.
- Result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.

4.9.4 Project Features That Will Reduce Impacts

The primary Project feature designed to reduce impacts upon the noise environment of adjacent residential and school uses is a ground-level 8-foot-high solid wall along portions of the southern property boundary of the Project site.

4.9.5 Impacts Analysis

The analysis provided in this section is based upon Urban Crossroads' Noise Impact Analysis, dated June 2017 (Appendix K).

Threshold NOI-1: Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Short-Term Construction Noise Impacts

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project.

To analyze noise impacts originating from the construction of the Project, noise from construction activities are typically evaluated against standards established under a City's

Municipal Code. The Municipal Code noise standards for construction are described below to determine the potential noise impacts at the nearby receiver locations.

The City of Riverside Municipal Code, Section 7.35.010 (B) (5), states that construction activities are limited to the hours of 7:00 a.m. to 7:00 p.m. on weekdays and 8:00 a.m. to 5:00 p.m. on Saturdays, with no activities allowed on Sundays or federal holiday (City of Riverside 2007c). Further, Riverside Municipal Code Section 7.35.20 (Exemptions) defines an exemption addressing construction activities (G): "Noise sources associated with construction, repair, remodeling, or grading of any real property; provided a permit has been obtained from the City as required; and provided said activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 5:00 p.m. and 8:00 a.m. on Saturdays, or at any time on Sunday or a federal holiday." Project construction will be limited to the hours of 7:00 a.m. to 7:00 p.m. on weekdays and 8:00 a.m. to 5:00 p.m. on Saturdays, with no activities allowed on Sundays or federal holidays (City of Riverside 2007c). Impacts during construction will be **less than significant**. No mitigation is required.

Long-Term Operational Noise Impacts

This section analyzes the potential stationary-source operational noise impacts at nearby receiver locations resulting from operation of the Project. Table 4.9-5 provides a summary of the applicable operational noise standards for reference in the following discussion. Figure 4.9-2 identifies the representative receiver locations and noise source locations used to assess the operational noise levels.

Table 4.9-5
Operational Noise Standards

Time Period	Condition	Municipal Code Section[1]	Exterior Noise Level Standards (dBA)[2]			
			L_{50} (30 mins.)	L_{25} (15 mins.)	L_{8} (5 mins.)	L_{2} (1 min.)
Daytime	Base Exterior Residential Noise Level Standards	7.25.010 (A)	55	60	65	70
	Lowest Measured Ambient Noise Levels[3]	n/a	48.5	51.3	55.2	58.9
	Ambient Exceedance Adjustment[4]	7.25.010 (B)	0	0	0	0
	Project Daytime Exterior Noise Level Criteria[5]	7.25.010 (B)	55	60	65	70
Nighttime	Base Exterior Residential Noise Level Standards	7.25.010 (A)	45	50	55	60
	Lowest Measured Ambient Noise Levels[3]	n/a	46.7	48.0	50.2	54.0

Table 4.9-5
Operational Noise Standards

Time Period	Condition	Municipal Code Section[1]	Exterior Noise Level Standards (dBA)[2]			
			L_{50} (30 mins.)	L_{25} (15 mins.)	L_8 (5 mins.)	L_2 (1 min.)
	Ambient Exceedance Adjustment[4]	7.25.010 (B)	+5	0	0	0
	Project Nighttime Exterior Noise Level Criteria[5]	7.25.010 (B)	50	50	55	60

Notes:
Daytime = 7:00 a.m. to 10:00 p.m.; Nighttime = 10:00 p.m. to 7:00 a.m.; L_{50} = the noise levels equaled or exceeded during 50% of the time; L_{25} = the noise levels equaled or exceeded during 25% of the time; L_8 = the noise levels equaled or exceeded during 8% of the time; L_2 = the noise levels equaled or exceeded during 2% of the time; min(s) = minutes; L_{max} = greatest sound level measured during a designated time interval or event

1 Source: City of Riverside 2007c (Riverside Municipal Code, Chapter 7.25 (Appendix 3.1)).

2 The percent noise level is the level exceeded "n" percent of the time during the measurement period. L_{25} is the noise level exceeded 25% of the time.

3 Lowest ambient noise levels collected in the City of Riverside at measurement location L7, shown on Figure 4.9-1. See Table 4.9-2.

4 Section 7.25.010(B): "If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level."

5 Combined base noise level standards and adjustments per the City of Riverside Municipal Code.

Reference Noise Levels

To estimate the potential stationary-source noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the Project. This section provides a detailed description of the reference noise level measurements shown on Table 4.9-6 used to estimate the stationary-source noise impacts. The reference noise levels presented on Table 4.9-6 are shown at a normalized reference distance of 50 feet for comparison at a uniform distance. It is important to note that the following projected noise levels assume the worst-case noise environment with parking structure and parking lot vehicle movements, mechanical equipment (rooftop heating, ventilation and air conditioning(HVAC)), emergency backup generators (central energy plant), helicopter activities, and other ancillary uses all operating simultaneously. In reality, these noise level impacts will vary throughout the day.

Table 4.9-6
Reference Noise Level Measurements

Noise Source	Distance From Source (Feet)	Noise Source Height (Feet)	Hourly Activity (Minutes)[1]		Reference Noise Levels (dBA) @ Reference Distance		Reference Noise Levels (dBA) @ 50 Feet	
			Day	*Night*	L_{eq} *(Energy Avg.)*	L_{50} *(30 minutes)*	L_{eq} *(Energy Avg.)*	L_{50} *(30 minutes)*
Parking Structure Vehicle Movement[2]	20	5	60	60	65.9	62.5	59.9	56.5
Parking Lot Vehicle Movement[3]	20	5	60	60	62.9	54.5	56.9	48.5
Rooftop Air Conditioning Unit[4]	5	25	39	28	77.2	74.4	57.2	54.4
Emergency Generator[5]	50	10	30	30	72.0	72.0	72.0	72.0
Typical Helicopter Activities[6]	200	15	30	30	70.5	70.5	82.5	82.5
Trauma Helicopter Activities[7]	400	15	5	5	81.7	81.7	99.8	99.8

Notes:

Day = 7:00 a.m. to 10:00 p.m.; Night = 10:00 p.m. to 7:00 a.m.; dBA = A-weighted decibel scale; L_{eq} = equivalent continuous sound level (time-averaged sound level). L_{50} = the noise levels equaled or exceeded during 50% of the time; L_{25} = the noise levels equaled or exceeded during 25% of the time; L_8 = the noise levels equaled or exceeded during 8% of the time; L_2 = the noise levels equaled or exceeded during 2% of the time; min(s) = minutes; L_{max} = greatest sound level measured during a designated time interval or event

1 Duration (minutes within the hour) of noise activity during peak hourly conditions.

2 As measured by Urban Crossroads Inc. during peak activity at the EV Free Church of Fullerton three-story parking garage on Sunday, September 15, 2013.

3 As measured by Urban Crossroads Inc. during peak activity at the Water of Life Church overflow parking lot on Sunday, September 15, 2013.

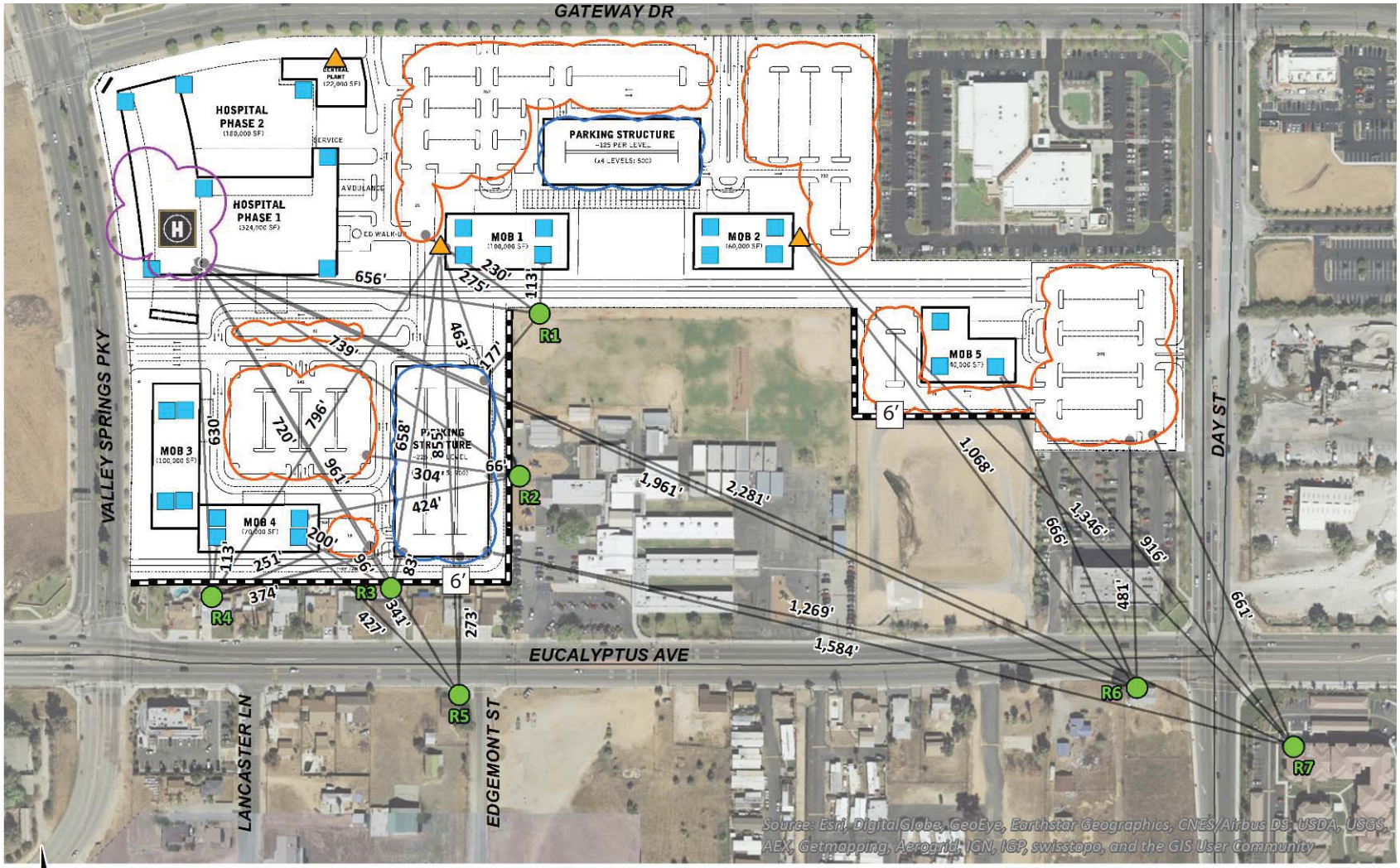
4 As measured by Urban Crossroads Inc. on July 27, 2015, at the Santee Walmart located at 170 Town Center Parkway.

5 Worst-case emergency generator reference noise level based on a 1000 kilowatt Caterpillar XQ1000 generator.

6 Source: Highest reference noise level for a helicopter provided in the examination of the low frequency limit for helicopter noise data in the Federal Aviation Administration Aviation Environmental Design Tool and INM, Noise-Con 2010.

7 Source: UH-60A Blackhawk helicopter data provided by the Operational Noise Data for UH-60A and CH-47C Army Helicopters prepared by the United States Army Corps of Engineers, August 1982.

Emergency vehicle-related noise sources (e.g., sirens, horns), are exempt from the California Vehicle Code. California Vehicle Code Sections 21055 and 27007 exempt drivers of emergency vehicles and sound amplification equipment of emergency vehicles, respectively. Section 21055 states that emergency vehicles driven in response to an emergency, or while engaged in rescue operations, with the sirens used when reasonably necessary are considered exempt from California Vehicle Code regulations. Further, Section 27007 indicates that sound amplification systems which can be heard outside the vehicle from 50 or more feet are prohibited, unless that system is being operated to request assistance or warn of a hazardous situation. The exemption for emergency vehicle sirens is explicit when it states this section does not apply to authorized emergency vehicles or vehicles operated by gas, electric, communications, or water utilities (California Vehicle Code, Section 27007).



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LEGEND:

- Roof-Top Air Conditioning Unit
- Emergency Generator
- Emergency Helicopter Activities
- Parking Lot Vehicle Movement
- Parking Structure Vehicle Movement
- Receiver Locations
- Distance from receiver to center of noise source (in feet)
- 6′ Recommended Noise Barrier Height (in feet)
- Recommended Noise Barrier

SOURCE: Urban Crossroads, 2017

DUDEK

FIGURE 4.9-2

Operational Noise Source Locations

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Parking Structure Vehicle Movement

Noise generated by a parking structure results from vehicular movement, including tire squeal on the sealed parking surfaces, and is heavily dependent upon the number of vehicles using the structure across a given period of time. Since parking structures similar to the scale proposed for the Project are currently limited within the City of Riverside, parking structure sound level measurements were performed at a representative parking structure in Fullerton. Specifically, reference noise level measurements were collected at the Evangelical Free Church of Fullerton on Sunday, September 15, 2013. The Evangelical Free Church of Fullerton provides a three-level parking structure to accommodate peak Sunday worship services. Parking in the structure is controlled with volunteer traffic control guides to manage the flow of cars. The noise levels observed at the Evangelical Free Church of Fullerton were used to represent those at the Project parking structures. The parking structure short-term noise level measurements indicate that the parking structure vehicle movement generates a noise level of 59.9 dBA L_{eq} at a uniform reference distance of 50 feet. Parking structure vehicle movement within the Project site is expected to operate for 60 minutes during typical hourly daytime and nighttime conditions.

Parking Lot Vehicle Movement

Noise generated by a surface parking lot results from vehicular movement, as well as engine start-up and door slams, and is heavily dependent upon the number of vehicles using the parking lot across a given period of time. To estimate the potential noise level impacts associated with proposed parking lots within the Project site, reference noise level measurements were taken during peak worship services on Sunday, September 15, 2013, in Lot A of the Water of Life Church. The projected noise levels from the parking lots within the Project site are expected to reflect the noise levels observed at Lot A of the Water of Life Church. The reference noise level measurement taken at Lot A measured 56.9 dBA L_{eq} when normalized at 50 feet during peak conditions. Parking lot vehicle movement within the Project site is expected to operate for 60 minutes during typical hourly daytime and nighttime conditions.

Rooftop HVAC Equipment

For large commercial developments, including hospital and healthcare campuses, exterior mechanical equipment such as heating, ventilation, and air conditioning (HVAC) units represent a major source of sound generation. In order to assess the impacts created by the rooftop mechanical ventilation equipment at the Project site, reference noise levels measurements were taken at the Santee Walmart on July 27, 2015. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe a single mechanical rooftop HVAC unit on the roof of an existing Walmart store. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. The reference noise level noise level at a uniform

distance of 50 feet from the unit was measured at 57.2 dBA L_{eq}. The operating conditions of the reference noise level measurement reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. The rooftop HVAC was observed to operate the most during the daytime hours, for a total of 39 minutes per hour, and during the nighttime hours for 28 minutes per hour. For the purposes of this noise analysis, the rooftop HVAC is located at the roof elevation of each building as part of the Project. The noise attenuation provided by a parapet wall is not included in this reference noise level measurement.

Emergency Backup Generators

The Project includes the use of six backup emergency generators for the hospital, MOBs 1 and 2, and senior housing buildings, as follows:

- Hospital Phase 1 Building – two 1,000-kilowatt (kW) generators in the Central Plant;
- Hospital Phase 2 Building – one 1,000 kW generator in the Central Plant;
- Medical Office Building 1 – one 750 kW generator at the west building façade;
- Medical Office Building 2 – one 500 kW generator at the east building façade; and
- Senior Housing Building – one 100 kW generator at the southwest building façade.

To present the worst-case Project-related operational noise levels, a reference noise level for a CAT XQ1000 1,000 kW generator is used in this analysis for all generator locations. Since this analysis uses the highest kW generator at all locations, it may conservatively overstate the operational noise levels. Caterpillar Inc. provides the noise level in L_{eq} for a CAT XQ1000 generator at a reference distance of 50 feet of 72.0 dBA L_{eq} and a noise source height of 10 feet (Caterpillar Inc. 2010).

Helicopter Activities

The proposed helicopter activities at the Project site are anticipated to occur under two conditions: typical activity and trauma activity, at a single helipad, located on the roof of the Hospital Phase 1 building. Further, published reference noise levels were obtained to describe each type of helicopter activity. Each type of helicopter activity is expected to rely on any combination of helicopter types as described below.

It is important to recognize that this analysis provides a level of review adequate to satisfy CEQA for the potential noise levels associated with the emergency helicopter activities. Detailed helicopter analysis will be required to identify noise abatement measures, if any, to fully satisfy the noise compatibility study requirements of the FAA, Riverside County Airport Land Use Commission,

March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, State of California Heliport Permitting process, and the City of Riverside Entitlement process. Specifically, the helipad component of the Project will be subject to the Conditional Use Permit Process by the City, which mandates a Project-specific Noise Study be completed for the helistop operations.

Typical Helicopter Activities

The expected typical helicopter activities at the Project site will consist of the scheduled transport of patients on an as-needed basis for patients who require the services of the Project's hospital use, or those of another local hospital (Appendix N). The typical helicopter activities were estimated using the worst-case helicopter model reference noise level identified for 'Helicopter A' in the examination of the low frequency limit for helicopter noise data in the Federal Aviation Administration Environmental Design Tool and Integrated Noise Model, prepared by the U.S. Department of Transportation's John A. Volpe National Transportation Systems Center. At the time this analysis was prepared, the exact model type and specifications of the helicopters to be used at the hospital helipad operations were unknown. Based on information provided by Heliplanners, the 'Helicopter A' reference noise level data is used to describe the potential noise levels from a H145 Airbus helicopter used in worst-case, typical hospital operations (Appendix N).

At a uniform distance of 50 feet, the reference noise level approached 82.5 dBA L_{eq} under in ground effect (IGE) conditions. IGE conditions account for the propagation loss over the ground when a helicopter is hovering at up to 5 feet above the ground (or helipad). In the helipad noise evaluation, typical helicopter conditions are estimated to occur during 30 minutes of the peak hour conditions (i.e., during the busiest hour of helipad use each day, helicopters will arrive and depart for up to 30 minutes). This assumption used for the helipad noise analysis conservatively overstates the two typical helicopter activities per week estimate provided by Heliplanners to represent worst-case conditions (Appendix N). In other words, in a typical week, the helipad is expected to be used twice; the noise analysis instead evaluated 30 minutes of helicopter activity at the helipad every single day.

Trauma Helicopter Activities

The trauma helicopter activities are unlikely to occur under normal operations of the Project's hospital, since this type of activity will only be required for major traumatic injuries or events. Additional published reference noise level data for the trauma-related helicopter events at the Project site was obtained from the U.S. Army Corps of Engineers' Operational Noise Data for UH-60A and CH-47C Army Helicopters. The reference UH-60A helicopter represents worst-case trauma-related Sikorsky UH-60 Blackhawk helicopter operations based on input provided by Heliplanners for trauma-related helicopter activities (Appendix N). At a uniform distance of

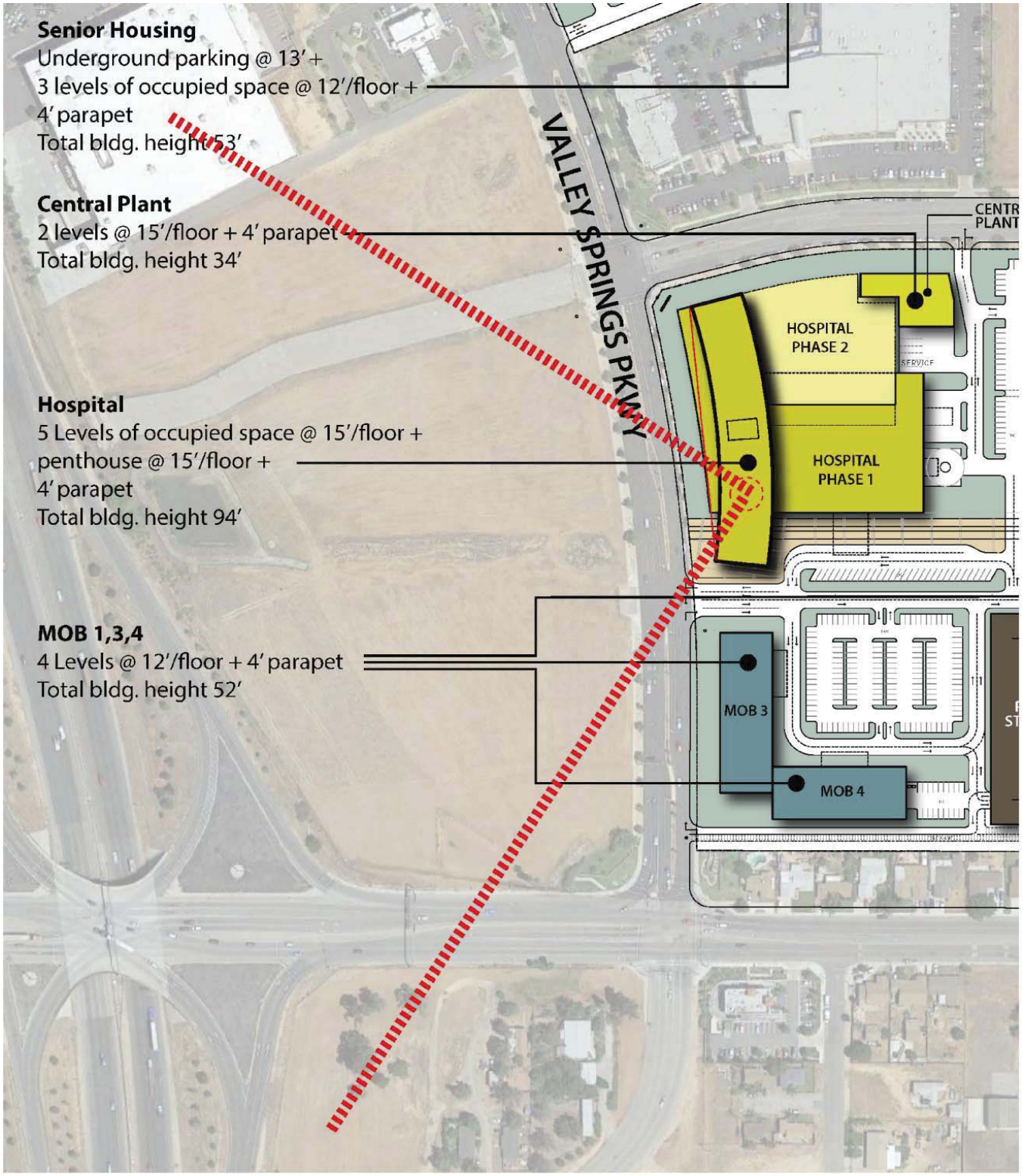
50 feet, the reference noise level approached 99.8 dBA L_{eq} under IGE conditions. Trauma helicopter conditions are estimated to occur during 5 minutes of the peak hour conditions (i.e., during the busiest hour of helipad use, a trauma-related helicopter will arrive and depart for up to 5 minutes), since trauma-related events will only occur on an as-needed basis during emergency conditions. Figure 4.9-3 shows the proposed helicopter take-off and landing locations in red at the Hospital Phase 1 building.

Project Composite Operational Noise Levels

Using the reference noise levels to represent the proposed operations that include parking structure and parking lot vehicle movements, mechanical ventilation (roof-top air conditioning) units, emergency backup generators (central energy plant), trauma and non-trauma helicopter activities, and other ancillary uses the operational source noise levels that are expected to be generated by the Project, as well as the Project-related noise level increases that will be experienced at each of the sensitive receiver locations, were calculated. The operational noise level calculations, shown on Tables 4.9-7 and 4.9-8, account for the distance attenuation provided due to geometric spreading when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. With geometric spreading, sound levels attenuate (or decrease) at a rate of 6 dB for each doubling of distance from a point source. Figure 4.9-2 shows the closest operational noise sources and their distance to each receiver location used in this analysis. The operational noise level calculations are included in Appendix K.

Since the exact model type and specifications of the helicopters to be used at the Project site were unknown at the time this analysis was prepared, the Project-related operational noise levels are analyzed under three conditions as shown below:

- Without helicopter activities;
- With typical helicopter activities; and
- With trauma helicopter activities.



SOURCE: Urban Crossroads, 2017

FIGURE 4.9-3

Conceptual Helipad and Approach Locations

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Project Composite Operational Noise Levels – Without Helicopter Activities

Table 4.9-7 presents the Project's operational noise levels during the daytime and nighttime hours without helicopter activities and includes distance attenuation and the attenuation provided by an 8-foot-high barrier along the southern property boundary, as shown on Figure 4.9-2. Increased barrier attenuation is included in the calculations when the planned Project buildings block the line-of-sight from the noise source to the receiver locations. Table 4.9-7 indicates that the noise levels associated with the Project, without helicopter activities, are expected to range from an L_{50} percentile of 39.1 dBA to 47.0 dBA at the nearby sensitive receiver locations during the daytime and nighttime hours. Note that because the lowest existing background level measured in the overnight period within the adjacent residential area was greater than 45 dBA L_{eq}, the applicable nighttime noise level limit is raised to 50 dBA L_{eq} in accordance with RMC Section 7.25.010(B). Therefore, the noise levels summarized in Table 4.9-7 will not exceed allowable limits.

Table 4.9-7
Project-Only Operational Noise Levels Without Helicopter Activities

Receiver Location[1]	Noise Sources[2]	Stationary/Area-Source Noise Levels (dBA)[3]			
		L_{50} (30 mins.)	L_{25} (15 mins.)	L_{8} (5 mins.)	L_{2} (1 min.)
R1	Parking Structure Vehicle Movement	42.3	45.4	47.5	54.1
	Parking Lot Vehicle Movement	18.6	21.7	28.3	37.3
	Rooftop Air Conditioning Unit	35.6	14.9	12.7	11.3
	Emergency Generator	36.7	—[4]	—[4]	—[4]
	Combined Noise Level	44.0	45.4	47.6	54.2
R2	Parking Structure Vehicle Movement	45.0	48.1	50.2	56.8
	Parking Lot Vehicle Movement	19.3	22.4	29.0	38.0
	Rooftop Air Conditioning Unit	29.6	8.9	6.7	5.3
	Emergency Generator	30.7	—[4]	—[4]	—[4]
	Combined Noise Level	45.3	48.1	50.2	56.9
R3	Parking Structure Vehicle Movement	44.1	47.2	49.3	55.9
	Parking Lot Vehicle Movement	35.2	38.3	44.9	53.9
	Rooftop Air Conditioning Unit	33.3	12.6	10.4	9.0
	Emergency Generator	38.5	—[4]	—[4]	—[4]
	Combined Noise Level	45.8	48.0	50.6	58.0
R4	Parking Structure Vehicle Movement	37.9	41.0	43.1	49.7
	Parking Lot Vehicle Movement	32.1	35.2	41.8	50.8
	Rooftop Air Conditioning Unit	37.2	16.5	14.3	12.9
	Emergency Generator	27.7	—[4]	—[4]	—[4]
	Combined Noise Level	41.3	42.0	45.5	53.3
R5	Parking Structure Vehicle Movement	45.5	48.6	50.7	57.3
	Parking Lot Vehicle Movement	36.0	39.1	45.7	54.7

Table 4.9-7
Project-Only Operational Noise Levels Without Helicopter Activities

Receiver Location[1]	Noise Sources[2]	Stationary/Area-Source Noise Levels (dBA)[3]			
		L_{50} (30 mins.)	L_{25} (15 mins.)	L_8 (5 mins.)	L_2 (1 min.)
	Rooftop Air Conditioning Unit	33.9	13.2	11.0	9.6
	Emergency Generator	39.4	—[4]	—[4]	—[4]
	Combined Noise Level	47.0	49.1	51.9	59.2
R6	Parking Structure Vehicle Movement	35.5	38.6	40.7	47.3
	Parking Lot Vehicle Movement	33.8	36.9	43.5	52.5
	Rooftop Air Conditioning Unit	30.0	9.3	7.1	5.7
	Emergency Generator	37.5	—[4]	—[4]	—[4]
	Combined Noise Level	41.0	40.8	45.3	53.6
R7	Parking Structure Vehicle Movement	34.0	37.1	39.2	45.8
	Parking Lot Vehicle Movement	31.7	34.8	41.4	50.4
	Rooftop Air Conditioning Unit	27.2	6.5	4.3	2.9
	Emergency Generator	35.5	—[4]	—[4]	—[4]
	Combined Noise Level	39.1	39.1	43.4	51.7

Notes:
dbA = A-weighted decibel scale; min(s) = minutes; L_{50} = the noise levels equaled or exceeded during 50% of the time; L_{25} = the noise levels equaled or exceeded during 25% of the time; L_8 = the noise levels equaled or exceeded during 8% of the time; L_2 = the noise levels equaled or exceeded during 2% of the time; min(s) = minutes; L_{max} = greatest sound level measured during a designated time interval or event

1 See Figure 4.9-2 for the receiver and noise source locations.

2 Reference noise sources as shown on Table 4.96.

3 Stationary source noise level calculations are provided in Appendix K.

4 Reference noise level data does not include the given noise level descriptor.

The helicopter operational noise levels are added to the Project's operational noise levels on Tables 4.9-8 and 4.9-9 to show the difference at each receiver location without and with the typical and trauma helicopter noise levels, respectively.

Project Composite Operational Noise Levels – With Typical Helicopter Activity

Table 4.9-8 presents the Project's operational noise levels during the daytime and nighttime hours with the addition of the proposed typical helicopter activities. Table 4.9-8 indicates that the noise levels associated with the Project, with typical helicopter activities, are expected to range from an L_{50} percentile of 39.8 dBA to 47.5 dBA at the nearby sensitive receiver locations during the daytime and nighttime hours. Note that because the lowest existing background level measured in the overnight period within the adjacent residential area was greater than 45 dBA L_{eq}, the applicable nighttime noise level limit is raised to 50 dBA L_{eq} in accordance with Riverside Municipal Code Section 7.25.010(B). Therefore, the noise levels summarized in Table 4.9-8 will not exceed allowable limits.

Table 4.9-8
Project Operational Noise Levels With Typical Helicopter Activities

Receiver Location[1]	Noise Sources[2]	Stationary/Area-Source Noise Levels (dBA)[3]			
		L_{50} (30 mins.)	L_{25} (15 mins.)	L_8 (5 mins.)	L_2 (1 min.)
R1	Project Operational Noise Levels (Table 4.9-7)	44.0	45.4	47.6	54.2
	Typical Helicopter Activities	43.7	—[4]	—[4]	—[4]
	Combined Noise Level	46.9	45.4	47.6	54.2
R2	Project Operational Noise Levels (Table 4.9-7)	45.3	48.1	50.2	56.9
	Typical Helicopter Activities	37.7	—[4]	—[4]	—[4]
	Combined Noise Level	46.0	48.1	50.2	56.9
R3	Project Operational Noise Levels (Table 4.9-7)	45.8	48.0	50.6	58.0
	Typical Helicopter Activities	42.7	—[4]	—[4]	—[4]
	Combined Noise Level	47.5	48.0	50.6	58.0
R4	Project Operational Noise Levels (Table 4.9-7)	41.3	42.0	45.5	53.3
	Typical Helicopter Activities	40.4	—[4]	—[4]	—[4]
	Combined Noise Level	43.9	42.0	45.5	53.3
R5	Project Operational Noise Levels (Table 4.9-7)	47.0	49.1	51.9	59.2
	Typical Helicopter Activities	35.8	—[4]	—[4]	—[4]
	Combined Noise Level	47.4	49.1	51.9	59.2
R6	Project Operational Noise Levels (Table 4.9-7)	41.0	40.8	45.3	53.6
	Typical Helicopter Activities	33.0	—[4]	—[4]	—[4]
	Combined Noise Level	41.6	40.8	45.3	53.6
R7	Project Operational Noise Levels (Table 4.9-7)	39.1	39.1	43.4	51.7
	Typical Helicopter Activities	31.6	—[4]	—[4]	—[4]
	Combined Noise Level	39.8	39.1	43.4	51.7

Notes:
dBA = A-weight decibel scale; min(s) = minutes; L_{50} = the noise levels equaled or exceeded during 50% of the time; L_{25} = the noise levels equaled or exceeded during 25% of the time; L_8 = the noise levels equaled or exceeded during 8% of the time; L_2 = the noise levels equaled or exceeded during 2% of the time; min(s) = minutes; L_{max} = greatest sound level measured during a designated time interval or event

1 See Figure 4.9-2 for the receiver and noise source locations.
2 The Project Operational Noise Levels, previously shown on Table 4.9-7, are combined with the typical helicopter activities.
3 Stationary source noise level calculations are provided in Appendix K.
4 Reference noise level data does not include the given noise level descriptor.

Project Composite Operational Noise Levels – With Trauma Helicopter Activity

Table 4.9-9 shows the Project's operational noise levels during the daytime and nighttime hours with the addition of the proposed trauma helicopter activities. Table 4.9-9 indicates that the noise levels associated with the Project, with trauma helicopter activities, are expected to range from an L_{50} percentile of 43.1 dBA to 53.6 dBA at the nearby sensitive receiver locations during the daytime and nighttime hours. Nighttime operational noise levels that include trauma helicopter activity could exceed the nighttime adjusted limit of 50 dBA L_{eq} at receivers R1, R3, and R4, resulting in a potentially significant operational noise impact. This potentially significant impact

will be addressed in the final project design plans, including as necessary, helicopter operations restrictions, flight pattern adjustments, and other means to achieve compliance with applicable regulations (refer to **MM-NOI-1**).

Table 4.9-9
Project Operational Noise Levels With Trauma Helicopter Activities

Receiver Location[1]	Noise Sources[2]	Stationary/Area-Source Noise Levels (dBA)[3]			
		L_{50} (30 mins.)	L_{25} (15 mins.)	L_8 (5 mins.)	L_2 (1 min.)
R1	Project Operational Noise Levels (Table 4.9-7)	44.0	45.4	47.6	54.2
	Trauma Helicopter Activities	53.1	—[4]	—[4]	—[4]
	Combined Noise Level	53.6	45.4	47.6	54.2
R2	Project Operational Noise Levels (Table 4.9-7)	45.3	48.1	50.2	56.9
	Trauma Helicopter Activities	47.2	—[4]	—[4]	—[4]
	Combined Noise Level	49.4	48.1	50.2	56.9
R3	Project Operational Noise Levels (Table 4.9-7)	45.8	48.0	50.6	58.0
	Trauma Helicopter Activities	52.1	—[4]	—[4]	—[4]
	Combined Noise Level	53.0	48.0	50.6	58.0
R4	Project Operational Noise Levels (Table 4.9-7)	41.3	42.0	45.5	53.3
	Trauma Helicopter Activities	49.9	—[4]	—[4]	—[4]
	Combined Noise Level:	50.5	42.0	45.5	53.3
R5	Project Operational Noise Levels (Table 4.9-7)	47.0	49.1	51.9	59.2
	Trauma Helicopter Activities	45.2	—[4]	—[4]	—[4]
	Combined Noise Level	49.2	49.1	51.9	59.2
R6	Project Operational Noise Levels (Table 4.9-7)	41.0	40.8	45.3	53.6
	Trauma Helicopter Activities	42.4	—[4]	—[4]	—[4]
	Combined Noise Level	44.8	40.8	45.3	53.6
R7	Project Operational Noise Levels (Table 4.9-7)	39.1	39.1	43.4	51.7
	Trauma Helicopter Activities	41.0	—[4]	—[4]	—[4]
	Combined Noise Level	43.1	39.1	43.4	51.7

Notes:
dBA = A-weighted decibel scale; min(s) = minutes; L_{50} = the noise levels equaled or exceeded during 50% of the time; L_{25} = the noise levels equaled or exceeded during 25% of the time; L_8 = the noise levels equaled or exceeded during 8% of the time; L_2 = the noise levels equaled or exceeded during 2% of the time; min(s) = minutes; L_{max} = greatest sound level measured during a designated time interval or event

1 See Figure 4.9-2 for the receiver and noise source locations.
2 The Project Operational Noise Levels, previously shown on Table 4.9-7, are combined with the trauma helicopter activities.
3 Stationary source noise level calculations are provided in Appendix K.
4 Reference noise level data does not include the given noise level descriptor.

Project Operational Noise Level Compliance

The operational noise level compliance of the Project in relation to the City of Riverside exterior noise level standards is shown in Tables 4.9-10 (operational noise without helicopter activities), 4.9-11 (operational noise with typical helicopter activities), and 4.9-12 (operational noise with trauma helicopter activities).

It should be noted that Riverside Municipal Code Section 7.25.010(B) directs that the allowable exterior noise exposure limit for each land use may be adjusted upward, if the ambient noise level already exceeds the prescribed limit. Specifically, "If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level." The ambient measured noise level in the nighttime period was 46.7 dBA L_{eq}, which effectively raises the nighttime exterior noise exposure limit to 50 dBA $L_{eq.}$

Without Helicopter Activities

Based on the results of the noise analysis, shown on Table 4.9-10, the Project operational noise levels without helicopter activities will satisfy the daytime and nighttime City of Riverside exterior noise level standards at the nearby sensitive receiver locations with the proposed 8-foot-high noise barrier, as shown on Figure 4.9-2. Additional attenuation is provided by the Project buildings which will be located between some noise sources and the receiver locations, with roof heights of up to 52 feet (calculations provided in Appendix K). Consequently, noise levels under this scenario will not exceed adopted applicable standards.

With Typical Helicopter Activities

Table 4.9-11 shows the operational noise levels with typical helicopter activities will also satisfy the daytime and nighttime City of Riverside exterior noise level standards at the nearby sensitive receiver locations with the proposed 8-foot-high noise barrier, as shown on Figure 4.9-2. Consequently, noise levels under this scenario will not exceed adopted applicable standards.

With Trauma Helicopter Activities

Table 4.9-12 shows that the Project's operational noise levels with trauma helicopter activities are anticipated to exceed the nighttime City of Riverside exterior noise level standards at receiver locations R3 and R4. Due to the potential trauma helicopter operational noise level impacts, the Project will be required to identify potential noise abatement measures, to fully satisfy the noise compatibility study requirements of the Federal Aviation Administration, Riverside County Airport Land Use Commission, March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, the State of California Heliport Permitting process, and City of Riverside Conditional Use Permit process for the helipad component. Therefore, the Project-related emergency helicopter noise impacts are considered potentially significant, but will be reduced to a less than significant level via mandatory adherence to all the requirements Federal, State, Regional, and Local Agencies. At a minimum, such agencies include: the Federal Aviation Administration, the Riverside County Airport Land Use Commission, the March Air Reserve Base/Inland Port Airport, the State of California Heliport Permitting process, and the City of Riverside Heliport Permitting Entitlement Process (see **MM-NOI**). Further, trauma activity will only occur intermittently and does not represent the typical, daily operations at the Project site.

Table 4.9-10
Operational Noise Level Compliance Without Helicopter Activities

Receiver Location[1]	Measured L_{50} [2] (30 mins.)	L_{50} Limit		Measured L_{25} [2] (15 mins.)	L_{25} Limit		Measured L_8 [2] (5 min.)	L_8 Limit		Measured L_2 [2] (1 min.)	L_2 Limit		Threshold Exceeded? [3]	
		Day	*Night*		*Day*	*Night*		*Day*	*Night*		*Day*	*Night*	*Day*	*Night*
R1	44.0	60	60	45.4	65	65	47.6	70	70	54.2	75	75	No	No
R2	45.3			48.1			50.2			56.9			No	No
R3	45.8			48.0			50.6			58.0			No	No
R4	41.3	55	50	42.0	60	50	45.5	65	55	53.3	70	60	No	No
R5	47.0			49.1			51.9			59.2			No	No
R6	41.0			40.8			45.3			53.6			No	No
R7	39.1			39.1			43.4			51.7			No	No

Notes:

Day = 7:00 a.m. to 10:00 p.m.; Night = 10:00 p.m. to 7:00 a.m.; min(s) = minutes; L_{50} = the noise levels equaled or exceeded during 50% of the time; L_{25} = the noise levels equaled or exceeded during 25% of the time; L_8 = the noise levels equaled or exceeded during 8% of the time; L_2 = the noise levels equaled or exceeded during 2% of the time; min(s) = minutes; L_{max} = greatest sound level measured during a designated time interval or event

The noise levels include the additional attenuation provided by the proposed 8-foot-high noise barrier, as shown on Figure 4.9-2.

1 See Figure 4.9-2.for the receiver and noise source locations.

2 Estimated Project operational noise levels as shown on Table 4.9-7.

3 Do the estimated Project operational noise levels meet the operational noise level standards (Table 4.9-5)?

Table 4.9-11
Operational Noise Level Compliance With Typical Helicopter Activities

Receiver Location[1]	Measured L_{50} [2] (30 mins.)	L_{50} Limit		Measured L_{25} [2] (15 mins.)	L_{25} Limit		Measured L_8 [2] (5 min.)	L_8 Limit		Measured L_2 [2] (1 min.)	L_2 Limit		Threshold Exceeded? [3]	
		Day	*Night*		*Day*	*Night*		*Day*	*Night*		*Day*	*Night*	*Day*	*Night*
R1	46.9	60	60	45.4	65	65	47.6	70	70	54.2	75	75	No	No
R2	46.0			48.1			50.2			56.9			No	No
R3	47.5			48.0			50.6			58.0			No	No
R4	43.9	55	50	42.0	60	50	45.5	65	55	53.3	70	60	No	No
R5	47.4			49.1			51.9			59.2			No	No

Table 4.9-11
Operational Noise Level Compliance With Typical Helicopter Activities

Receiver Location[1]	Measured L_{50} [2] (30 mins.)	L_{50} Limit		Measured L_{25} [2] (15 mins.)	L_{25} Limit		Measured L_8 [2] (5 min.)	L_8 Limit		Measured L_2 [2] (1 min.)	L_2 Limit		Threshold Exceeded? [3]	
		Day	*Night*		*Day*	*Night*		*Day*	*Night*		*Day*	*Night*	*Day*	*Night*
R6	41.6			40.8			45.3			53.6			No	No
R7	39.8			39.1			43.4			51.7			No	No

Notes:

mins = minutes; Day = 7:00 a.m. to 10:00 p.m.; Night = 10:00 p.m. to 7:00 a.m.; L_{50} = the noise levels equaled or exceeded during 50% of the time; L_{25} = the noise levels equaled or exceeded during 25% of the time; L_8 = the noise levels equaled or exceeded during 8% of the time; L_2 = the noise levels equaled or exceeded during 2% of the time; min(s) = minutes; L_{max} = greatest sound level measured during a designated time interval or event

The noise levels include the additional attenuation provided by the recommended 8-foot-high noise barrier, as shown on Figure 4.9-2.

1 See Figure 4.9-2.for the receiver and noise source locations.

2 Estimated Project operational noise levels as shown on Table 4.9-8 which include the typical helicopter activities at the Project site.

3 Do the estimated Project operational noise levels meet the operational noise level standards (Table 4.9-5)?

Table 4.9-12
Operational Noise Level Compliance With Trauma Helicopter Activities

Receiver Location[1]	Measured L_{50} [2] (30 mins)	L_{50} Limit		Measured L_{25} [2] (15 mins)	L_{25} Limit		Measured L_8 [2] (5 min)	L_8 Limit		Measured L_2 [2] (1 min)	L_2 Limit		Threshold Exceeded? [3]	
		Day	*Night*		*Day*	*Night*		*Day*	*Night*		*Day*	*Night*	*Day*	*Night*
R1	53.6	60	60	45.4	65	65	47.6	70	70	54.2	75	75	No	No
R2	49.4			48.1			50.2			56.9			No	No
R3	**53.0**			48.0			50.6			58.0			No	Yes
R4	**50.5**	55	50	42.0	60	50	45.5	65	55	53.3	70	60	No	Yes
R5	49.2			49.1			51.9			59.2			No	No
R6	44.8			40.8			45.3			53.6			No	No
R7	43.1			39.1			43.4			51.7			No	No

Notes:

Day = 7:00 a.m. to 10:00 p.m.; Night = 10:00 p.m. to 7:00 a.m.; L_{50} = the noise levels equaled or exceeded during 50% of the time; L_{25} = the noise levels equaled or exceeded during 25% of the time; L_8 = the noise levels equaled or exceeded during 8% of the time; L_2 = the noise levels equaled or exceeded during 2% of the time; min(s) = minutes; L_{max} = greatest sound level measured during a designated time interval or event

The noise levels include the additional attenuation provided by the proposed 8-foot-high noise barrier, as shown on Figure 4.9-2.

1 See Figure 4.9-2 for the receiver and noise source locations.

2 Estimated Project operational noise levels as shown on Table 4.9-9 which include the typical helicopter activities at the Project site.

3 Do the estimated Project operational noise levels meet the operational noise level standards (Table 4.9-5)?

Project Noise Contribution

To describe the Project's operational noise level contributions, the Project operational noise levels were combined with the existing ambient noise levels measurements. The difference between the combined Project and ambient noise levels describe the Project's noise level contributions. Noise levels that will be experienced at receiver locations when Project-source noise is added to ambient daytime and nighttime conditions are presented on Table 4.9.13 and include the attenuation provided by the proposed 8-foot-high noise barrier and Project buildings shown on Figure 4.9-2.

The California Vehicle Code, Sections 21055 and 27007, exempt drivers of emergency vehicles and sound amplification equipment of emergency vehicles, respectively. Section 21055 states that emergency vehicles driven in response to an emergency or while engaged in rescue operations, with sirens used reasonably and with necessity, are considered exempt from California Vehicle Code regulations. Further, Section 27007 indicates that sound amplification systems which can be heard outside the vehicle from 50 or more feet are prohibited, unless that system is being operated to request assistance or warn of a hazardous situation. The exemption is for emergency vehicle sirens is explicit when it states this section does not apply to authorized emergency vehicles or vehicles operated by gas, electric, communications, or water utilities (California Vehicle Code, Section 27007).

As indicated in Tables 4.9-13, the Project will contribute operational stationary-source noise level increases of up to 5.5 dBA L_{50} (daytime) and 3.2 dBA L_{50} (nighttime) at nearby receiver locations. The daytime Project-related operational noise level increases of 5.5 dBA L_{50} at receiver location R1 and up to 5.0 dBA L_{50} at receiver location R3 result in combined exterior noise levels of 55.0 dBA L_{50} at R1, and 54.6 dBA L_{50} at R3, respectively. As such, the combined Project and ambient noise levels will remain below the City of Riverside Municipal Code noise level standards for community support land uses (60 dBA L_{50} for R1) and residential uses (55 dBA L_{50} for R3); therefore, the Project-related operational noise level contributions to the ambient noise levels at nearby sensitive receiver locations will be less than significant at receiver locations R1 and R3. Further, nighttime operational noise level increases with the Project are shown to be less than significant at all receiver locations with mitigation. In the absence of an 8-foot-high noise barrier, which has been included in the quantification of Project noise levels, the Project could result in potentially significant daytime and nighttime increases in ambient noise levels in the Project vicinity. As such, mitigation measure **MM-NOI-1** must be incorporated as part of the Project. With the incorporation of mitigation measure **MM-NOI-1**, the Project's operational stationary-source noise will not result in a substantial temporary/periodic, or permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project, and there will be a **less than significant impact with mitigation incorporated**.

Table 4.9-13
Daytime and Nighttime Operational Noise Level Contributions (dBA L_{50})

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Contribution[6]	Potential Cumulative Significant Impact?[7]
Daytime						
R1	53.6	L3	49.5	55.0	5.5	No
R2	49.4	L3	49.5	52.4	2.9	No
R3	53.0	L2	49.6	54.6	5.0	No
R4	50.5	L2	49.6	53.1	3.5	No
R5	49.2	L1	65.7	65.8	0.1	No
R6	44.8	L1	65.7	65.7	0.0	No
R7	43.1	L1	65.7	65.7	0.0	No
Nighttime						
R1	53.6	L3	55.1	57.4	2.3	No
R2	49.4	L3	55.1	56.1	1.0	No
R3	53.0	L2	52.7	55.9	3.2	No
R4	50.5	L2	52.7	54.7	2.0	No
R5	49.2	L1	61.9	62.1	0.2	No
R6	44.8	L1	61.9	62.0	0.1	No
R7	43.1	L1	61.9	62.0	0.1	No

Notes:
1 See Figure 4.9-2 for the sensitive receiver locations.
2 Total Project operational noise levels as shown on Table 4.9-9, including trauma helicopter activities.
3 Reference noise level measurement locations as shown on Exhibit 5-A of Appendix K.
4 Observed nighttime ambient noise levels as shown on Table 5-1 of Appendix K.
5 Represents the combined ambient conditions plus the Project activities.
6 The noise level increase expected with the addition of the Project activities.
7 Significance Criteria as defined in Section 4 of Appendix K.

On-Site Traffic Noise Impacts

An on-site exterior noise impact analysis was completed to determine traffic noise exposure and also to identify potential necessary noise abatement measures for the Project. The Project will experience some background traffic noise impacts from the Project's internal streets; however, due to the distance, topography and low traffic volume/speed, traffic noise from these roadways will not make a significant contribution to the noise environment. As such, on-site traffic noise impacts will be **less than significant**. No mitigation is required.

Threshold NOI-2: Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that

groundborne vibration from Project construction activities will cause only intermittent, localized intrusion. The Project's construction activities most likely to cause vibration impacts are:

- **Heavy Construction Equipment:** Although all heavy mobile construction equipment has the potential of causing at least some perceptible vibration while operating close to building, the vibration is usually short-term and is not of sufficient magnitude to cause building damage. It is not expected that heavy equipment such as large bulldozers will operate close enough to any residences to cause a vibration impact.
- **Trucks:** Trucks hauling building materials to construction sites can be sources of vibration intrusion if the haul routes pass through residential neighborhoods on streets with bumps or potholes. Repairing the bumps and potholes generally eliminates the problem.

Groundborne vibration levels resulting from construction activities occurring within the Project site were estimated using data published by the FTA. Construction activities that will have the potential to generate low levels of groundborne vibration within the Project site include grading. Using the vibration source level of construction equipment provided in Table 4.9-14 and the construction vibration assessment methodology published by the FTA, the Project's vibration impacts were estimated. Table 4.9-15 presents the expected Project-related vibration levels at each of the nearby sensitive receiver locations.

Table 4.9-14
Vibration Source Levels for Construction Equipment

Equipment	Vibration Decibels (VdB) at 25 feet
Small bulldozer	58
Jackhammer	79
Loaded Trucks	86
Large bulldozer	87

Source: FTA 2006

Table 4.9-15
Construction Equipment Vibration Levels

Noise Receiver[1]	Distance To Property Line (In Feet)	Receiver Vibration Levels (VdB)[2]					Potential Significant Impact?[3]
		Small Bulldozer	*Jackhammer*	*Loaded Trucks*	*Large Bulldozer*	*Peak Vibration*	
R1	110	38.7	59.7	66.7	67.7	67.7	No
R2	117	37.9	58.9	65.9	66.9	66.9	No
R3	111	38.6	59.6	66.6	67.6	67.6	No
R4	125	37.0	58.0	65.0	66.0	66.0	No
R5	314	25.0	46.0	53.0	54.0	54.0	No

Table 4.9-15
Construction Equipment Vibration Levels

Noise Receiver[1]	Distance To Property Line (In Feet)	Receiver Vibration Levels (VdB)[2]					Potential Significant Impact?[3]
		Small Bulldozer	*Jackhammer*	*Loaded Trucks*	*Large Bulldozer*	*Peak Vibration*	
R6	550	17.7	38.7	45.7	46.7	46.7	No
R7	730	14.0	35.0	42.0	43.0	43.0	No

Notes:
1 Noise receiver locations are shown on Exhibit 11-A in Appendix K.
2 Based on the Vibration Source Levels of Construction Equipment included on Table 4.9-14.
3 Does the Peak Vibration exceed the FTA maximum acceptable vibration standard of 80 VdB?

Based on the reference vibration levels provided by the FTA, a large bulldozer represents the peak source of vibration with a reference level of 87 VdB at a distance of 25 feet. At distances ranging from 110 to 730 feet from the Project site (which represents the distances from proposed building pad locations to the closest existing off-site structures, as measured from current aerial photo imagery), construction vibration levels are expected to range from 14.0 VdB to 67.7 VdB. Using the construction vibration assessment methods provided by the FTA, the Project will not include or require equipment, facilities, or activities that will result in a perceptible human response (annoyance).

The construction of the Project is not expected to generate vibration levels exceeding the FTA maximum acceptable vibration standard of 80 VdB. Further, impacts at the location of the closest sensitive receiver are unlikely to be sustained during the entire construction period, but will rather only occur during the times that heavy construction equipment is operating adjacent to the Project site perimeter. Moreover, construction at the Project site will be restricted to daytime hours consistent with City requirements, thereby eliminating potential vibration impacts during the sensitive nighttime hours. As such, the potential for the Project to result in the exposure of persons to, or generation of, excessive groundborne vibration is determined to be **less than significant**. No mitigation is required.

Threshold NOI-3: Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Off-Site Traffic Noise

To assess the off-site transportation CNEL noise level impacts associated with development of the Project, noise contours were developed based on the *Canyon Springs Healthcare Campus and Senior Living Traffic Impact Analysis* (Appendix L). Noise contours were developed for the following traffic scenarios:

- **Existing Without/With Project:** This scenario refers to the existing present-day noise conditions, without the Project and with the construction of the Project.

- **Year 2016 Without/With Project**[1]: This scenario refers to the background noise conditions at future Year 2016 with and without the Project. This scenario corresponds to 2016 conditions, and includes all cumulative projects identified in the Traffic Impact Analysis (Appendix L).
- **General Plan 2025 Buildout Without/With Project:** This scenario refers to the background noise conditions at future General Plan 2025 buildout with and without the Project. This scenario corresponds to General Plan 2025 buildout conditions, and includes all cumulative projects identified in the Traffic Impact Analysis.

Traffic Noise Contours

To quantify the Project's traffic noise impacts on the surrounding areas, the changes in traffic noise levels on 24 roadway segments surrounding the Project site were calculated based on the changes in the average daily traffic volumes. This exercise involves the use of noise-modelling software to predict traffic noise levels at various distances from the roadway centerline, and comparing the existing noise level at these set distances with specific increases in the roadway volumes predicted for different future scenarios. The magnitude of changes in noise levels at set distances from each roadway were used to assess the Project's traffic noise contribution to traffic-related cumulative noise impacts at land uses adjacent to roadways to which the project added a substantial number of trips. Based on the cumulative noise impact significance criteria, which was derived from the Federal Interagency Committee on Noise guidance for the assessment of project-generated increases in noise levels, a significant off-site traffic noise level impact will occur if the Without Project noise levels at nearby noise-sensitive receivers:

- are less than 60 dBA and the Project creates a readily perceptible 5 dBA or greater Project-related noise level increase;
- range from 60 dBA to 65 dBA and the Project creates a barely perceptible 3 dBA or greater Project-related noise level increase; or
- already exceed 65 dBA, and the Project creates a community noise level impact greater than 1.5 dBA.

[1] As indicated in the *Canyon Springs Healthcare and Senior Living Noise Impact Analysis* included in Appendix L, the noise impact analysis prepared by Urban Crossroads for the Project commenced in year 2015, and at that time, assumed Project operations would initiate in 2016. Although the 2016 opening year is no longer possible, the underlying technical calculations using the 2016 opening year are conservative and would overstate rather than understate the potential impacts of the Project, since impacts are generally reduced as the analysis year increases based on the natural turnover of older equipment and vehicles being replaced with newer, less noisy ones. As such, the noise impact calculations in the noise analysis incorporated herein, are conservative, overstate potential impacts, and do not require additional analysis.

Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70 dBA, 65 dBA, and 60 dBA noise levels. The noise contours do not take into account the effect of any existing noise barriers or topography that may affect ambient noise levels. In addition, since the noise contours reflect modeling of vehicular noise along area roadways, they appropriately do not reflect noise contribution from the surrounding commercial uses within the Project study area. Appendix L presents a summary of the unmitigated exterior traffic noise levels for the 24 study area roadway segments analyzed from the Without Project to the With Project conditions in each of the three time frames: Existing, Year 2016, and General Plan 2025 Buildout conditions..

Existing Project Traffic Noise Level Contributions

Table 4.9-16 presents a comparison of the Existing Without and With Project conditions CNEL noise levels. As shown in this table, the unmitigated Without Project exterior noise levels are expected to range from 53.6 dBA to 71.4 dBA CNEL. Existing With Project noise level contours are expected to range from 54.7 dBA to 71.9 dBA CNEL. Overall the Project is expected to generate an unmitigated exterior noise level increase of up to 1.1 dBA CNEL. As shown in Table 4.9-16, the Project's contribution to the existing noise level is less than significant for all of the study area roadway segments. As such, the Project's off-site traffic noise level will have a **less than significant impact** on the study area roadway segments for Existing conditions. No mitigation is required.

Table 4.9-16
Existing Project-Related Traffic Noise Impacts

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Adjacent Land Use (dBA)			Potential Significant Impact?[2]
				Without Project	*With Project*	*Project Addition*	
1	Sycamore Canyon Boulevard	n/o Eastridge Avenue	Business/Office Park	67.7	67.9	0.2	No
2	Sycamore Canyon Boulevard	s/o Eastridge Avenue	Business/Office Park	68.0	68.0	0.0	No
3	Box Springs Boulevard	n/o Eastridge Avenue	Business/Office Park	60.6	60.9	0.3	No
4	Box Springs Boulevard	s/o Eastridge Avenue	Business/Office Park	56.6	57.4	0.8	No
5	Day Street	n/o State Route 60 (SR-60)	Commercial	69.9	70.3	0.4	No
6	Day Street	n/o Canyon Springs Parkway	Commercial	71.4	71.9	0.5	No

Table 4.9-16
Existing Project-Related Traffic Noise Impacts

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Adjacent Land Use (dBA)			Potential Significant Impact?[2]
				Without Project	*With Project*	*Project Addition*	
7	Day Street	s/o Canyon Springs Parkway	Commercial	69.3	70.1	0.8	No
8	Day Street	s/o Campus Parkway	Commercial	68.9	69.7	0.8	No
9	Day Street	s/o Gateway Drive	Commercial	67.7	68.2	0.5	No
10	Day Street	n/o Eucalyptus Avenue	Commercial	67.7	68.3	0.6	No
11	Day Street	s/o Eucalyptus Avenue	Residential	64.9	65.4	0.5	No
12	Day Street	s/o Cottonwood Avenue	Residential/Office	63.7	64.3	0.6	No
13	Day Street	s/o Bay Avenue	Residential/Office	63.4	63.9	0.5	No
14	Day Street	s/o Alessandro Boulevard	Commercial	53.6	54.7	1.1	No
15	Eucalyptus Avenue	s/o Towngate Drive	Residential	66.6	66.8	0.2	No
16	Eastridge Avenue	w/o Sycamore Canyon Boulevard	Business/Office Park	64.8	64.9	0.1	No
17	Eastridge Avenue	e/o Sycamore Canyon Boulevard	Business/Office Park	67.5	67.7	0.2	No
18	Eastridge Avenue	e/o Box Springs Boulevard	Business/Office Park	68.3	68.6	0.3	No
19	Eucalyptus Avenue	w/o Valley Springs Parkway	Commercial	70.3	71.3	1.0	No
20	Eucalyptus Avenue	e/o Valley Springs Parkway	Residential/Office	67.8	68.3	0.5	No
21	Eucalyptus Avenue	e/o Day Street	Residential	66.2	66.6	0.4	No
22	Towngate Drive	e/o Eucalyptus Avenue	Residential	63.8	64.1	0.3	No
23	Alessandro Boulevard	w/o Day Street	Commercial	70.3	70.4	0.1	No
24	Alessandro Boulevard	e/o Day Street	Residential	70.5	70.5	0.0	No

Notes:
n/o = north of; s/o = south of; w/o = west of; e/o = east of.
1 Source: City of Riverside 2007a (General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map).
2 Significance of Cumulative Impacts (Table 4-1) in Appendix K.

Year 2016 Project Traffic Noise Level Contributions

Table 4.9-17 presents a comparison of the Year 2016 Without and With Project conditions CNEL noise levels. As shown in Table 4.9-17, the Project is expected to generate an unmitigated

exterior noise level increase of up to 0.8 dBA CNEL. As such, for Year 2016 conditions, the Project will have a **less than significant impact** on the study area roadway segments. No mitigation is required.

Table 4.9-17
Year 2016 Project-Related Traffic Noise Impacts

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Adjacent Land Use (dBA)			Potential Significant Impact?[2]
				Without Project	*With Project*	*Project Addition*	
1	Sycamore Canyon Boulevard	n/o Eastridge Avenue	Business/Office Park	69.6	69.8	0.2	No
2	Sycamore Canyon Boulevard	s/o Eastridge Avenue	Business/Office Park	69.7	69.8	0.1	No
3	Box Springs Boulevard	n/o Eastridge Avenue	Business/Office Park	65.5	65.6	0.1	No
4	Box Springs Boulevard	s/o Eastridge Avenue	Business/Office Park	61.5	61.8	0.3	No
5	Day Street	n/o SR-60	Commercial	70.4	70.8	0.4	No
6	Day Street	n/o Canyon Springs Parkway	Commercial	71.9	72.4	0.5	No
7	Day Street	s/o Canyon Springs Parkway	Commercial	69.9	70.6	0.7	No
8	Day Street	s/o Campus Parkway	Commercial	69.5	70.3	0.8	No
9	Day Street	s/o Gateway Drive	Commercial	68.4	68.9	0.5	No
10	Day Street	n/o Eucalyptus Avenue	Commercial	68.4	69.0	0.6	No
11	Day Street	s/o Eucalyptus Avenue	Residential	67.1	67.4	0.3	No
12	Day Street	s/o Cottonwood Avenue	Residential/Office	67.1	67.4	0.3	No
13	Day Street	s/o Bay Avenue	Residential/Office	67.0	67.2	0.2	No
14	Day Street	s/o Alessandro Boulevard	Commercial	66.0	66.0	0.0	No
15	Eucalyptus Avenue	s/o Towngate Drive	Residential	68.3	68.5	0.2	No
16	Eastridge Avenue	w/o Sycamore Canyon Boulevard	Business/Office Park	70.1	70.1	0.0	No
17	Eastridge Avenue	e/o Sycamore Canyon Boulevard	Business/Office Park	69.9	70.0	0.1	No
18	Eastridge Avenue	e/o Box Springs Boulevard	Business/Office Park	70.8	71.0	0.2	No
19	Eucalyptus Avenue	w/o Valley Springs Parkway	Commercial	72.0	72.8	0.8	No

Table 4.9-17
Year 2016 Project-Related Traffic Noise Impacts

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Adjacent Land Use (dBA)			Potential Significant Impact?[2]
				Without Project	*With Project*	*Project Addition*	
20	Eucalyptus Avenue	e/o Valley Springs Parkway	Residential/Office	70.0	70.3	0.3	No
21	Eucalyptus Avenue	e/o Day Street	Residential	69.5	69.8	0.3	No
22	Towngate Drive	e/o Eucalyptus Avenue	Residential	66.1	66.5	0.4	No
23	Alessandro Boulevard	w/o Day Street	Commercial	72.2	72.2	0.0	No
24	Alessandro Boulevard	e/o Day Street	Residential	72.2	72.2	0.0	No

Notes:
n/o = north of; s/o = south of; w/o = west of; e/o = east of.
1 Source: City of Riverside 2007a (General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map).
2 Significance of Cumulative Impacts (Table 4-1) in Appendix K.

General Plan 2025 Buildout Project Traffic Noise Level Contributions

Table 4.9-18 presents a comparison of the General Plan 2025 Buildout Without and With Project conditions CNEL noise levels. As shown in Table 4.9-18, the Project is expected to generate an unmitigated exterior noise level increase of up to 0.8 dBA CNEL. The Project-related noise level increases on the 24 study area roadway segments will not be significant. Therefore, the Project will create a **less than significant** off-site traffic noise level impact on the study area roadway segments for General Plan 2025 Buildout conditions. No mitigation is required.

Table 4.9-18
General Plan 2025 Buildout Project-Related Traffic Noise Impacts

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Adjacent Land Use (dBA)			Potential Significant Impact?[2]
				Without Project	*With Project*	*Project Addition*	
1	Sycamore Canyon Boulevard	n/o Eastridge Avenue	Business/Office Park	69.9	70.0	0.1	No
2	Sycamore Canyon Boulevard	s/o Eastridge Avenue	Business/Office Park	70.0	70.0	0.0	No
3	Box Springs Boulevard	n/o Eastridge Avenue	Business/Office Park	65.7	65.8	0.1	No

Table 4.9-18
General Plan 2025 Buildout Project-Related Traffic Noise Impacts

ID	Road	Segment	Adjacent Land Use[1]	CNEL at Adjacent Land Use (dBA)			Potential Significant Impact?[2]
				Without Project	*With Project*	*Project Addition*	
4	Box Springs Boulevard	s/o Eastridge Avenue	Business/Office Park	61.8	61.9	0.1	No
5	Day Street	n/o SR-60	Commercial	70.6	71.0	0.4	No
6	Day Street	n/o Canyon Springs Parkway	Commercial	72.1	72.6	0.5	No
7	Day Street	s/o Canyon Springs Parkway	Commercial	70.1	70.8	0.7	No
8	Day Street	s/o Campus Parkway	Commercial	69.7	70.5	0.8	No
9	Day Street	s/o Gateway Drive	Commercial	68.7	69.1	0.4	No
10	Day Street	n/o Eucalyptus Avenue	Commercial	68.7	69.2	0.5	No
11	Day Street	s/o Eucalyptus Avenue	Residential	67.4	67.7	0.3	No
12	Day Street	s/o Cottonwood Avenue	Residential/Office	67.6	67.9	0.3	No
13	Day Street	s/o Bay Avenue	Residential/Office	67.7	67.9	0.2	No
14	Day Street	s/o Alessandro Boulevard	Commercial	66.2	66.2	0.0	No
15	Eucalyptus Avenue	s/o Towngate Drive	Residential	68.5	68.7	0.2	No
16	Eastridge Avenue	w/o Sycamore Canyon Boulevard	Business/Office Park	70.4	70.5	0.1	No
17	Eastridge Avenue	e/o Sycamore Canyon Boulevard	Business/Office Park	70.1	70.2	0.1	No
18	Eastridge Avenue	e/o Box Springs Boulevard	Business/Office Park	71.0	71.2	0.2	No
19	Eucalyptus Avenue	w/o Valley Springs Parkway	Commercial	72.3	73.0	0.7	No
20	Eucalyptus Avenue	e/o Valley Springs Parkway	Residential/Office	70.2	70.5	0.3	No
21	Eucalyptus Avenue	e/o Day Street	Residential	69.8	69.9	0.1	No
22	Towngate Drive	e/o Eucalyptus Avenue	Residential	66.5	66.7	0.2	No
23	Alessandro Boulevard	w/o Day Street	Commercial	73.0	73.0	0.0	No
24	Alessandro Boulevard	e/o Day Street	Residential	72.4	72.4	0.0	No

Notes:
n/o = north of; s/o = south of; w/o = west of; e/o = east of.
1 Source: City of Riverside 2007a (General Plan Land Use/Urban Design Element, Figure LU-10 Land Use Policy Map).
2 Significance of Cumulative Impacts (Table 4-1) in Appendix K.

Project Traffic Noise Contributions

The off-site traffic noise analysis shows that the Existing Project noise level contribution of up to 1.1 dBA CNEL is expected to decrease to 0.8 dBA CNEL by General Plan 2025 Buildout conditions. This shows that the Project's incremental traffic-related noise level increases at land uses adjacent to roadways conveying Project traffic will diminish over time. This occurs as the background traffic on the study area roadway segments increases and the Project represents a smaller percentage of the overall traffic volume. The off-site traffic noise analysis indicates that the Project's contribution to roadway noise levels will be less than significant. As such, there will be a **less than significant impact**. No mitigation is required.

Refer to further discussion presented above under Threshold NOI-1 regarding Project on-site noise sources and resulting Project noise impact levels upon vicinity noise-sensitive properties.

Threshold NOI-4: Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction noise is exempt under the Riverside Municipal Code. Once the Project is operation, there will not be temporary or periodic noise generating characteristics of the Project. Therefore, the Project will not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. As such, there will be a **less than significant impact**. No mitigation is required.

4.9.6 Mitigation Measures

The following mitigation measures will reduce construction and operation-related noise levels to a level below significance.

MM-NOI-1 Operational Noise Mitigation Measures

- Prior to certificate of occupancy for the proposed Hospital, Medical Office Building 3, Medical Office Building 4, or Parking Structure 1, whichever may be constructed first, the Project Applicant shall construct the proposed 8-foot-high perimeter wall (as shown on Figure 4.9-2) to reduce the operational noise levels at the adjacent sensitive receiver locations.
- Prior to certificate of occupancy for the proposed Hospital, the Project shall demonstrate compliance with the requirements of all federal, state, regional, and local agencies. At a minimum, such agencies include the Federal Aviation Administration, the Riverside County Airport Land Use Commission, the March Air Reserve Base/Inland Port Airport, the State of

California Heliport Permitting process, and the City of Riverside Entitlement process.

- The proposed helipad shall be reviewed pursuant to the provisions of Riverside Municipal Code Title 19, Chapter 19.320.

4.9.7 Level of Significance After Mitigation

Following implementation of mitigation measure **MM-NOI-1**, noise impacts will be **less than significant**.

4.9.8 References

Caterpillar Inc. 2010. *XQ1000 Generator Specification Sheet*.

City of Riverside. 2007a. *City of Riverside General Plan 2025*. Adopted November 2007. Riverside, California: City of Riverside Community Development Department. Accessed January 5, 2011. http://www.riversideca.gov/planning/gp2025program/general-plan.asp.

City of Riverside. 2007b. *City of Riverside General Plan 2025 Final Program Environmental Impact Report*.

City of Riverside. 2007c. City of Riverside Municipal Code, Title 7, Noise Control. Accessed June 22, 2017. https://www.riversideca.gov/municode/title7.asp.

City of Riverside. 2007d. City of Riverside Municipal Code, Title 19, Zoning. Accessed June 22, 2017. https://www.riversideca.gov/municode/title19.asp.

FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment.* May 2006.

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4.10 PUBLIC SERVICES

The focus of the following discussion and analysis is based on the Initial Study (IS) and Notice of Preparation (NOP) (Appendix A) and comments received during the NOP public comment period. This section:

- Describes the existing public services setting as it relates to fire protection services
- Identifies relevant regulatory requirements
- Evaluates potentially adverse impacts related to the maintenance of acceptable service ratios, response times, or other performance objectives for fire protection services
- Identifies mitigation measures related to implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project)

The IS concluded that the Project will result in less than significant or no impacts to police services, schools, parks, and other public services such as libraries. Therefore, these services are not discussed further in this Draft Environmental Impact Report (EIR).

4.10.1 Setting

While the Project site is located in an urbanized environment and is not within a fire hazard area as mapped by the California Department of Forestry and Fire Protection (CALFIRE) (City of Riverside 2007a), no part of Riverside is immune from fire danger. According to the *City of Riverside General Plan 2025* (General Plan 2025) Public Safety Element, structural and automobile fires represent the most common type of fire in the urban environment and have the potential to spread to other structures or areas if not extinguished in a timely manner (City of Riverside 2007a).

Fire Services

The City of Riverside Fire Department (RFD) provides fire protection service and emergency medical service for the Project site and surrounding lands within the jurisdictional boundary of the City. The five divisions of RFD are Administration, Prevention, Operations, Special Services, and Training. RFD's major facilities include 14 fire stations located throughout the City, administrative/prevention offices, an emergency operation center and a training center (City of Riverside 2007b, p. 5.13-6). The nearest station to the Project site is the Box Springs Station (Fire Station No. 13) located at 6490 Sycamore Canyon Boulevard, approximately 0.6 miles to the west of the site. The next closest stations, the Sycamore Canyon Station (Fire Station No. 14), located at 725 Central Avenue, and the Orangecrest Station (Fire Station No. 11), located at 19595 Orange Terrace Parkway, are located approximately 2.8 and 3.4 miles from the Project site, respectively. Depending on availability, the Box Springs, Sycamore Canyon, and

Orangecrest Fire Stations will be able to respond to emergency calls from the Project. These stations each have one available fire engine with staffing of four personnel on duty, and all personnel are Emergency Medical Technical – Paramedic (EMT-P) or Emergency Medical Technician – Fires (EMT-FS) qualified. Ladder trucks, rescue squads, and/or chief officers are not available from these stations.

RFD is organized into two types of fire stations: a Single-Company Station or a Multi-Company Station. The Box Springs, Sycamore Canyon, and Orangecrest Stations are Single-Company Stations, which have one unit. There are fewer personnel in the Single-Company Stations as they respond alone from their stations on fires, hazardous material responses, etc. In addition, RFD also provides emergency medical services as part of the Special Services Division. Private ambulances, such as American Medical Response, are also available within the City limits.

RFD responds to over 30,000 emergency calls annually and its operations employs 211 full-time firefighters, housed 24 hours a day within its stations in the City (RFD 2016). The average time for on-site responses to fire calls is 5 minutes and 30 seconds. RFD's goal is to maintain a 5-minute response time for the first arriving units 90% of the time for all emergency medical services and fire related incidents. The first arriving unit is capable of advancing the first line for fire control, initiating rescue, or providing basic life support for medical incidents. Additionally, RFD policy states that units will be located and staffed such that an effective response force of 4 units with 12 personnel minimum shall be available to all areas of the City within a maximum of 10 minutes (total response time) (City of Riverside 2007b, p. 5.13-7).

According to the City's General Plan 2025, the goal of the RFD is a 5-minute response time for the first responding fire engine in urbanized areas (City of Riverside 2007a). Table 4.10-1 provides a summary of average response time by station and is based on information provided by RFD.

Table 4.10-1
Response Times by Fire Station

Station – Location	Distance from Project Site	Approximate Response Time for First Fire Apparatus*
Box Springs Station (Fire Station No. 13): 6490 Sycamore Canyon Boulevard	0.6 miles	5-6 minutes
Sycamore Canyon Station (Fire Station No. 14): 725 Central Avenue	2.8 miles	10–14 minutes
Orangecrest Station (Fire Station No. 11): 19595 Orange Terrace Parkway	3.4 miles	10–14 minutes

Source: RFD 2016.
Note: Approximate response time for a full first-alarm (structure fire) assignment including a Chief Officer and an aerial ladder truck(s) is 20+ minutes.

In addition to RFD stations, the Moreno Valley Fire Department (MVFD) Towngate Station (Station No. 6; located at 22250 Eucalyptus Avenue) is located near the Project area. The Towngate Station was co-developed by the Cities of Riverside and Moreno Valley and initially operated as a joint fire station that housed both MVFD and RFD firefighters and engines up until RFD firefighters were relocated to the Sycamore Canyon Station. The Towngate Station is a three-bay facility capable of housing two engine companies, a truck company, and additional as needed resources. The station is located approximately 0.22 miles east of the proposed hospital, medical office buildings, and parking structure area (i.e., Site C) on the Project site. One paramedic engine is currently assigned to the station (City of Moreno Valley 2016a). Also, pursuant to a mutual aid agreement and if available, the MVFD Sunnymead Station (Station No. 2; located at 24935 Hemlock Avenue) normally responds to calls originating in the City of Riverside. The Sunnymead Station currently houses one paramedic engine, one aerial ladder truck company, and a Type 2 urban search and rescue truck and trailer (City of Moreno Valley 2016b). The Sunnymead Station is located approximately 3 miles northeast of the proposed independent living, assisted living, skilled nursing facility area (i.e., Site B) on the Project site.

4.10.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

There are no federal regulations directly applicable to public services with respect to the Project.

State

California Fire Code

The California Fire Code (Title 24, Part 9) is based on the 2015 International Fire Code and includes amendments from the State of California fully integrated into the code. The California Fire Code contains fire safety related building standards referenced in other parts of Title 24 of the California Code of Regulations, also known as the California Building Standards Code.

California Building Code

Current law states that every local agency enforcing building regulations, such as cities and counties, must adopt the provisions of the California Building Code (CBC) within 180 days of its publication. The publication date of the CBC is established by the California Building Standards Commission and the code is also known as Title 24 of the California Code of Regulations. The most recent building standard adopted by the legislature and used throughout the state is the 2016 version of the CBC, often with local, more restrictive amendments that are based upon local geographic, topographic, or climatic conditions. Additionally, the 2016 CBC is based on the 2015 International Building Code. These codes provide minimum standards to protect property and the public welfare by regulating various aspects of the design and construction buildings.

California Master Mutual Aid Agreement

The California Disaster and Civil Defense Master Mutual Aid Agreement, as provided by the California Emergency Services Act, provides for statewide mutual aid between and among local jurisdictions and the state (CALFIRE 2016). The statewide mutual aid system exists to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given situation. Each jurisdiction controls its own personnel and facilities but can give and receive help whenever needed. For example, the Riverside County Fire Department and CALFIRE provide mutual aid to the City, when needed, and fire protection to unincorporated territory within the City's sphere of influence (City of Riverside 2007a).

Local

City of Riverside General Plan 2025 – Public Safety Element

The Public Safety Element describes fire protection services in the City and discusses response time goals (see below). In addition, the Public Safety Element contains goals and policies related to the provision of fire protection services.

RFD's Operations Division responds to more than 30,000 calls for service every year (RFD 2016). While the average response time for service calls is 6 minutes and the RFD arrives within 7 minutes of dispatch over 70% of the time, a 5-minute response time is generally preferred by fire officials (City of Riverside 2007a).

The following City's General Plan 2025 Public Safety Element policies pertain to fire protection and are applicable to the Project:

Policy PS-6.1: Ensure that sufficient fire stations personnel and equipment are provided to meet the needs of the community as it grows in size and population.

Policy PS-6.2: Endeavor to meet/maintain a response of five minutes for Riverside's urbanized areas.

Policy PS-6.3: Integrate fire safety considerations in the planning process.

Policy PS-6.5: Mitigate existing fire hazards related to urban development or patterns of urban development as they are identified and as resources permit.

Policy PS-6.7: Continue to involve the City Fire Department in the development review process.

Policy PS-6.8: Pursue strategies that maintain and improve the City's Class 2 ISO rating.

4.10.3 Thresholds of Significance

The City has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. Therefore, significance determinations utilized in this section are from Appendix G of the State CEQA Guidelines. A significant impact will occur if implementation of the Project will:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection.

The IS/NOP for the Project (Appendix A) found that the Project will result in less than significant or no impacts to police protection services, schools, parks, and other public services such as libraries. Therefore, these public services are not discussed further in this Draft EIR.

4.10.4 Project Features That Will Reduce Impacts

There are no project design features or elements that will reduce impacts to public services.

4.10.5 Impact Analysis

Threshold PUB-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government 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 services?

As stated in Section 4.10.1, the RFD operates three fire stations in the vicinity of the Project site. The RFD Box Springs Station (Fire Station No. 13), Sycamore Canyon Station (Fire Station No. 14), and Orangecrest Station (Fire Station No. 11), and each has one available fire engine with staffing of four personnel on duty. All personnel are also EMT-P- or EMT-FS-qualified. RFD Downtown Station (Fire Station No. 1) is located 5.8 miles to the northeast of the Project site and is the closest RFD station with an aerial ladder truck. In addition to the RFD stations, the MVFD Towngate Station (Station No. 6; located at 22250 Eucalyptus Avenue) is located approximately 0.22 miles east of the Project site and one paramedic engine is currently assigned to the station. Lastly, pursuant to a mutual aid agreement and if available, the MVFD Sunnymead Station (Station No. 2; located at 24935 Hemlock Avenue) normally responds to calls originating in the

City of Riverside. One paramedic engine, one aerial ladder truck company, and a Type 2 urban search and rescue truck and trailer is currently housed the Sunnymead Station, which is located approximately 3 miles northeast of the Project site. As proposed, the Project will include a five-story (up to 94 feet high) approximately 280-bed hospital; a three-story (up to 35 feet high) approximately 234-unit senior "age-restricted" multifamily housing facility; a three-story (up to 40 feet high) approximately 290-bed, independent living/memory care, assisted living, and skilled nursing facility; and five medical office buildings ranging in size from 40,000 square feet to 100,000 square feet and two to four stories in height. Two four-story parking structures (up to 40 feet high) with approximately 900 and 500 parking spaces, respectively, are also proposed and will accommodate site staff and visitors.

While the Project site consists of three non-contiguous, previously graded, and currently vacant areas, the surrounding Canyon Springs Business Park Specific Plan area is developed and contains multistory structures. For example, existing structures up to four stories tall are located in the immediate Project vicinity at the corners of Campus Parkway/Canyon Park Drive, Campus Parkway/Day Street, and Day Street/Eucalyptus Avenue. These existing multistory structures are located within the City of Riverside jurisdictional boundary and are served by the same fire stations that will serve the Project.

The Project proposes the introduction of permanent and temporary residents, staff, and patients to the area and will construct and operate new structures on a currently vacant site. As a result, the Project will create increased demand for fire protection, emergency medical, prevention, and rescue fire services that will be manifested by an increased number of emergency and public service calls. However, development of the Project site was previously considered and analyzed as part of the Canyon Springs Business Park Specific Plan Project and the City of Riverside General Plan 2025 Project (2007). The Canyon Springs Business Park Specific Plan envisioned a medical campus along its southern boundary, which encompasses a portion of Site C. Per Figure LU-10, Land Use Policy Map, of General Plan 2025, the Project site and surrounding area is designated for commercial use (see also Figure 2-5, General Plan, of this Draft EIR). While the commercial land use designation does not specifically provide for skilled nursing facilities, the General Plan Land Use Policy Map will be amended to replace the existing land use designation with Canyon Springs Healthcare Campus Specific Plan. Following the General Plan amendment, lands within the Canyon Springs Healthcare Campus Specific Plan designation will be governed by the Specific Plan.

In addition to previous evaluations and consideration of hospital and office uses on site, Project buildings will be constructed in compliance with the most current iteration of the California Building Code and applicable RFD requirements. The Project will be designed to meet safety equipment standards, provide adequate emergency access, and will include fire hydrants and fire sprinklers with appropriate water flows. Fire hydrants and fire sprinklers will aid in initial response to fires occurring in Project buildings.

Additionally, as noted previously, RFD operates four fire stations in the vicinity of the Project site and through a mutual aid agreement, MVFD may also respond to service calls from Project buildings. Two of the stations in the vicinity include an aerial ladder truck, and these apparatuses will respond to calls at the Project site and currently respond to calls from multistory development in the surrounding developed area. Although the Project site is currently vacant, development was previously evaluated by the City and more specifically, hospital and office uses were previously envisioned on site. Because fire stations with aerial ladder trucks are located in the vicinity and Project buildings will be constructed in compliance with the most current iteration of the California Building Code and applicable RFD requirements, new or physically altered government facilities will not be required to accommodate the Project. Therefore, Project impacts to fire protection services will be **less than significant**. No mitigation is required.

4.10.6 Mitigation Measures

Impacts to fire protection services will be less than significant, and no mitigation measures are required.

4.10.7 Environmental Impacts After Mitigation Is Incorporated

Project impacts to fire protection services will be **less than significant**. No mitigation is required.

4.10.8 References

CALFIRE (California Department of Forestry and Fire Protection). 2016. "Fire Protection: Cooperative Efforts." Accessed April 13, 2016. http://www.fire.ca.gov/fire_protection/fire_protection_coop_efforts_stategov.

City of Moreno Valley. 2016a. "Fire Station Locations: Station 6 - Towngate." Accessed August 23, 2016. http://www.moreno-valley.ca.us/city_hall/departments/fire/fire-locs.shtml.

City of Moreno Valley. 2016a. "Fire Station Locations: Station 2 - Sunnymead." Accessed August 23, 2016. http://www.moreno-valley.ca.us/city_hall/departments/fire/fire-locs.shtml.

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RFD (City of Riverside Fire Department). 2016. "Operations." Accessed August 22, 2016. http://www.riversideca.gov/fire/operations.asp.

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4.11 TRANSPORTATION/TRAFFIC

The focus of the following discussion and analysis is based on the Initial Study (IS) and Notice of Preparation (NOP) (Appendix A) and comments received during the NOP public comment period. This section:

- Describes the existing transportation and traffic setting
- Identifies associated regulatory requirements
- Provides the methodology for determining potential impacts related to transportation and traffic
- Evaluates potential adverse impacts related to transportation and traffic
- Identifies mitigation measures related to implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project)

The focus of the following analysis per the IS and NOP (Appendix A) is related to whether the Project conflicts with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system or conflicts with an applicable congestion management program (CMP) as a result of implementation. The IS concluded that potential impacts related to the following standards are less than significant, and therefore, these topics are not discussed further in this Draft Environmental Impact Report (EIR):

- Increased hazards due to a design feature or incompatible uses
- Inadequate emergency access
- Conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities

The IS also found that impacts related to changes in air traffic patterns were less than significant. However, following the release of the IS a heliport was added to the Project. As such, this section also addresses potential impacts related to air traffic. A Traffic Impact Analysis, Supplemental Analysis, and an Air Traffic Study were prepared to analyze and document these potential impacts. These reports are incorporated into this section of the Draft EIR as relevant and are contained in their entirety in Appendices H and N.

Public and agency comments related to transportation were received during the public scoping period in response to the NOP, and are summarized below:

- Analyze potential impacts and mitigation measures on Riverside County roadways and intersections

- Compliance with the Riverside County Traffic Study Guidelines
- Consider the baseline data for November 2014
- Identify locations of the City of Moreno Valley's bicycle facilities and bus stops
- Analyze potential truck traffic on both local and regional transportation facilities

4.11.1 Setting

The 50.85-acre Project site consists of three separate, non-contiguous, previously graded areas located within the Canyon Springs Business Park Specific Plan in Riverside, California, approximately 0.2 miles east of Interstate 215 (I-215) and approximately 0.3 mile south of State Route 60 (SR-60). The Project site is adjacent to the City of Moreno Valley and is generally located east of Day Street and south of Eucalyptus Avenue (Chapter 2, Figure 2-1, Regional Map; Figure 2-2, Vicinity Map). For purposes of this analysis, the term "Project site" references the entire three separate, non-contiguous areas.

Site A: The northwest 10.45-acre semi-rectangular shaped area (senior housing site) consisting of four Assessor's Parcel Numbers (APNs) (291-440-047, 291-450-051, 291-450-052, and 291-450-053) is bounded by Corporate Centre Place and Campus Parkway to the north, Valley Springs Parkway to the west, vacant office zoned land to the east, and Riverside County Assessor office buildings and vacant office zoned land to the south (Chapter 2, Figure 2-3, Site Plan).

Site B: The northeast 10.27-acre irregular-shaped area (independent living, assisted living, and skilled nursing facility site) consisting of four APNs (291-440-042, 291-440-043, 291-440-044, and 291-440-045) is bounded by two multistory office buildings to the north, Canyon Park Drive to the west, Day Street to the east, and Gateway Drive to the south. A 100-foot-wide Metropolitan Water District water pipeline easement diagonally traverses this site (Chapter 2, Figure 2-3, Site Plan).

Site C: The main 30.13-acre irregular-shaped area (hospital, medical office buildings (MOBs), and parking structures site) consisting of 14 APNs (291-450-055, 291-450-056, 291-450-057, 291-090-038, 291-090-039, 291-090-040, 291-090-041, 291-450-054, 291-440-050, 291-440-049, 291-440-048, 291-440-018, 291-440-033, and 291-440-036) is bounded by Gateway Drive to the north, Valley Springs Parkway to the west, Day Street and a Riverside Medical Clinic building to the east, and the City of Moreno Valley limit, south of which are 10 single-family homes and Edgemont Elementary School, a Riverside County Flood Control detention basin, and a MOB to the south fronting Eucalyptus Avenue (Chapter 2, Figure 2-3, Site Plan).

Study Area

Pursuant to the Traffic Study Scoping Agreement and discussions with the City of Moreno Valley (Appendix L), the study area is divided into four traffic analysis zones (TAZs) as shown in Appendix L and includes 24 existing intersections and 10 future intersections that will be created with full buildout of the Project. Figure 4.11-1 illustrates the study area intersections and identifies the type and number of traffic lanes for existing roadways as well as intersection traffic controls.

Intersections

A total of 34 study area intersections were analyzed based on consultation with the City of Moreno Valley and California Department of Transportation District 8 (Caltrans) staff. These intersections are shown in Figure 4.11-1 and listed in Table 4.11-1.

Table 4.11-1
Intersection Analysis Locations

ID	Intersection Location	Jurisdiction
1	Sycamore Canyon Boulevard / Eastridge Avenue	City of Riverside
2	Box Springs Boulevard / Eastridge Avenue	City of Riverside
3	I-215 Ramps / Eastridge Avenue – Eucalyptus Avenue	Caltrans
4	Valley Springs Parkway / Eucalyptus Avenue	City of Riverside / City of Moreno Valley
5	Day Street / SR-60 Westbound Ramps	Caltrans
6	Day Street / SR-60 Eastbound Ramps	Caltrans
7	Day Street / Canyon Springs Parkway	City of Riverside / City of Moreno Valley
8	Day Street / Campus Parkway	City of Riverside / City of Moreno Valley
9	Day Street / Gateway Drive	City of Riverside / City of Moreno Valley
10	Day Street / Driveway 1	City of Riverside / City of Moreno Valley
11	Day Street / Driveway 2	City of Riverside / City of Moreno Valley
12	Day Street / Eucalyptus Avenue	City of Riverside / City of Moreno Valley
13	Day Street / Cottonwood Avenue	City of Moreno Valley
14	Day Street / Bay Avenue	City of Moreno Valley
15	Day Street / Alessandro Boulevard	City of Moreno Valley
16	Memorial Way / Towngate Drive	City of Moreno Valley
17	Corporate Centre Place / Canyon Springs Parkway	City of Riverside
18	Corporate Centre Place / Campus Parkway	City of Riverside
19	Driveway 3 / Corporate Centre Place	City of Riverside
20	Valley Springs Parkway / Corporate Centre Place	City of Riverside
21	Valley Springs Parkway / Driveway 4	City of Riverside
22	Valley Springs Parkway / Gateway Drive	City of Riverside
23	Valley Springs Parkway / Driveway 5	City of Riverside
24	Driveway 6 / Gateway Drive	City of Riverside

Table 4.11-1
Intersection Analysis Locations

ID	Intersection Location	Jurisdiction
25	Canyon Park Drive – Driveway 7 / Gateway Drive	City of Riverside
26	Driveway 8 / Gateway Drive	City of Riverside
27	Driveway 9 / Gateway Drive	City of Riverside
28	Canyon Park Drive / Campus Parkway	City of Riverside
29	Canyon Park Drive / Driveway 10	City of Riverside
30	Canyon Park Drive / Driveway 11	City of Riverside
31	Canyon Park Drive / Driveway 12	City of Riverside
32	Driveway 13 / Gateway Drive	City of Riverside
33	Valley Springs Parkway / Driveway 14	City of Riverside
34	Driveway 15 / Corporate Center Place	City of Riverside

Source: Appendix L.

Roadway Segments

The roadway segment analysis locations for the Project are listed in Table 4.11-2 and shown in Figure 4.11-1.

Table 4.11-2
Roadway Segment Analysis Locations

ID	Roadway Segment	Jurisdiction
1	Eastridge Avenue, west of Sycamore Canyon Boulevard	City of Riverside
2	Eastridge Avenue, between Box Springs Boulevard and I-215	City of Riverside
3	Eastridge Avenue, between I-215 and Valley Springs Parkway	City of Riverside / City of Moreno Valley
4	Eucalyptus Avenue, west of Day Street	City of Riverside / City of Moreno Valley
5	Eucalyptus Avenue, east of Day Street	City of Moreno Valley
6	Valley Springs Parkway, north of Eucalyptus Avenue	City of Riverside
7	Day Street, between SR-60 Eastbound Ramps and Canyon Springs Parkway	City of Riverside / City of Moreno Valley
8	Day Street , north of Eucalyptus Avenue	City of Riverside / City of Moreno Valley
9	Day Street, south of Eucalyptus Avenue	City of Moreno Valley
10	Day Street , south of Cottonwood Avenue	City of Moreno Valley
11	Gateway Drive, west of Day Street	City of Riverside

Source: Appendix L.

The roadway segments were selected for this analysis based on a review of the key roadway segments in which the Project is anticipated to contribute 50 or more peak hour trips. The study area identifies a total of 11 roadway segments. The roadway segments include the segments on either side of the study area intersections listed in Table 4.11-1.

Freeway Mainline Segments

Per the City of Riverside Traffic Impact Analysis Guidelines (City of Riverside 2016), the freeway mainline analysis includes segments on either side of the I-215 Freeway/Eastridge Avenue/Eucalyptus Avenue interchange, and on either side of the SR-60 Freeway/Day Street interchange where the Project is anticipated to contribute 50 or more peak hour trips. The freeway mainline analysis includes twelve segments for the I-215 Freeway's northbound and southbound directions of flow and the SR-60 Freeway's westbound and eastbound directions of flow as shown in Table 4.11-3.

Table 4.11-3
Freeway Mainline Segment Analysis Locations

ID	Freeway Mainline Segments
1	I-215 Freeway – Northbound, south of Eucalyptus Avenue
2	I-215 Freeway – Northbound, between ramps
3	I-215 Freeway – Northbound, north of Eucalyptus Avenue
4	I-215 Freeway – Southbound, north of Eucalyptus Avenue
5	I-215 Freeway – Southbound, between ramps
6	I-215 Freeway – Southbound, south of Eucalyptus Avenue
7	SR-60 Freeway – Westbound, east of Day Street
8	SR-60 Freeway – Westbound, between ramps
9	SR-60 Freeway – Westbound, west of Day Street
10	SR-60 Freeway – Eastbound, west of Day Street
11	SR-60 Freeway – Eastbound, between ramps
12	SR-60 Freeway – Eastbound, east of Day Street

Source: Appendix L.

Freeway Merge/Diverge Ramp Junctions

The study area freeway merge/diverge ramp junction analysis includes eight freeway ramp junctions for the I-215 Freeway's northbound and southbound directions of flow and the SR-60 Freeway's westbound and eastbound directions of flow, as shown in Table 4.11-4.

Table 4.11-4
Freeway Merge/Diverge Ramp Junction Analysis Locations

ID	Freeway Merge/Diverge Junctions
1	I-215 – Northbound, On-ramp at Eucalyptus Avenue
2	I-215 – Northbound, Off-ramp at Eucalyptus Avenue
3	I-215 – Southbound, Off-ramp at Eucalyptus Avenue
4	I-215 – Southbound, On-ramp at Eucalyptus Avenue
5	SR-60 – Westbound, Off-ramp at Day Street
6	SR-60 – Westbound, On-ramp at Day Street

Table 4.11-4
Freeway Merge/Diverge Ramp Junction Analysis Locations

ID	Freeway Merge/Diverge Junctions
7	SR-60 – Eastbound, Off-ramp at Day Street
8	SR-60 – Eastbound, On-ramp at Day Street

Source: Appendix L.

Progression Analysis

A traffic signal progression has been conducted for the following locations under Cumulative With Project Conditions and General Plan Buildout With Project Conditions, with the identified intersection improvements, to evaluate vehicular queuing by considering the signal timing and physical spacing of intersections:

- Eastridge Avenue-Eucalyptus Avenue between Box Springs Boulevard and Valley Springs Parkway
- Day Street between the SR-60 Freeway westbound ramps and Cottonwood Avenue

Existing Circulation Network

This section describes the existing network of roadways, transit, bicycle facilities and pedestrian facilities in the study area.

Vehicle Circulation

Vehicle circulation in the study area is comprised of roadways and highways that cross multiple jurisdictions. A description of the roadway network is provided below based on the location of the roadway segment in the study area.

Interstate and State Highway Facilities

There are two highways within the study area, which are maintained and operated by the Caltrans.

Interstate 215 (I-215) is a 54.5-mile (87.7 km) long north/south Interstate highway. In the Project area, it is a six-lane divided highway. I-215 and SR-60 share a corridor between the interchange of SR-60 with SR-91 and the City of Riverside where they split again. I-215 is an auxiliary route of Interstate 15, which runs north-south from San Diego County near the Mexico – US border to Alberta, Canada.

State Route 60 (SR 60) is an east/west route that serves the Los Angeles metropolitan area at the western terminus and connects to Interstate 10. In the Project area, it is a six- to nine-lane divided

highway with high occupancy vehicle lanes. SR-60 and I-215 connect northwest of the Project site and share a corridor for over five miles before splitting again at the interchange of SR-91.

City of Riverside

The existing street system in the City of Riverside is divided into regional and local roadway networks in the City of Riverside General Plan 2025 Circulation and Community Mobility Element (City of Riverside 2007a). The local roadway network is defined using a series of functional classifications: local, collector and arterial. Arterial streets connect to the state highway system and have the greatest carrying capacity and highest speeds. Collector streets connect arterial streets to local streets. Roadways in the study area within the City of Riverside are described below.

Box Springs Boulevard: This is a two-lane north/south undivided roadway located west of I-215. Box Springs Boulevard is designated as an arterial (two-lane undivided, 88-foot right-of-way) in the General Plan 2025 Circulation and Community Mobility Element.

Campus Parkway: This is a northwest–southeast–east, four lane street that intersects with Corporate Centre Place, Canyon Park Drive, and Day Street for access to Sites A, B, and C. Campus Parkway can be reached from SR-60 by way of Day Street and from I-215 by way of Eucalyptus Avenue to Valley Springs Parkway to Corporate Center Place. The northwestern end of Campus Parkway terminates at Corporate Center Place while Campus Parkway continues east of Day Street into the City of Moreno Valley. Campus Parkway is designated by the City as a 100 foot wide major highway.

Canyon Park Drive: This is a north–south, four lane street providing access to Sites B and C. Canyon Park Drive can be reached from SR-60 by way of Day Street to Campus Parkway or Gateway Drive, or from I-215 by way of Eucalyptus Avenue to Gateway Drive. The northern end of Canyon Park Drive terminates at Campus Parkway while the southern end of Canyon Park Drive terminates at Gateway Drive. Canyon Park Drive is designated by the City as a 100 foot wide major highway.

Canyon Springs Parkway: This is a northwest–southeast, six-lane arterial highway. Canyon Springs Parkway can be reached from SR-60 by way of Day Street and from I-215 by way of Eucalyptus Avenue to Valley Springs Parkway. The northwestern portion of Canyon Springs Parkway turns into Valley Springs Parkway while the southeastern portion of Canyon Springs Parkway continues east of Day Street into the City of Moreno Valley. Canyon Springs Parkway is designated by the City as a 110-foot wide arterial highway.

Corporate Centre Place: This is a northeast–southwest, four lane street providing access to Site A. The northeastern end of Corporate Centre Place terminates at Canyon Springs Parkway while

the southwestern end of Corporate Centre Place terminates at Valley Springs Parkway. Corporate Centre Place is designated by the City as a 100 foot wide major highway.

Day Street: This is a north–south, six-lane arterial providing access to Site C. Day Street can be reached from SR-60 by existing eastbound and westbound off-ramps and from I-215 by way of Eucalyptus Avenue. The City designates this street as a 120-foot arterial.

Eastridge Avenue: This is a partially divided four- to five-lane east/west roadway that becomes Eucalyptus Avenue east of I-215. Eastridge Avenue is designated as an arterial (four to five-lanes, 120-foot right-of-way) in the General Plan 2025 Circulation and Community Mobility Element and provides connectivity with the I-215 Freeway.

Gateway Drive: This is a west–east, four-lane street providing access to Site B and Site C. Gateway Drive can be reached from SR-60 by way of Day Street and from I-215 by way of Eucalyptus Avenue to Valley Springs Parkway. The western end of Gateway Drive terminates at Valley Springs Parkway while the eastern end of Gateway Drive continues east of Day Street into the City of Moreno Valley. Gateway Drive is designated by the City as a 100-foot wide major highway.

Sycamore Canyon Boulevard: This is a four-lane north/south divided roadway and is designated as an arterial (four-lanes divided, 110-foot right-of-way) in the General Plan 2025 Circulation and Community Mobility Element. South of Alessandro Boulevard it continues as Meridian Parkway.

Valley Springs Parkway: This is a north–south, six-lane arterial highway providing access to Sites A and C. Valley Springs Parkway can be reached from SR-60 by way of Day Street to Canyon Springs Parkway and from I-215 by way of Eucalyptus Avenue. The northern portion of Valley Springs Parkway north of Corporate Centre Place turns into Canyon Springs Parkway while the southern portion of Valley Springs Parkway south of Eucalyptus Avenue turns into Old 215 Frontage Road. Valley Springs Parkway is designated by the City as a 110-foot wide arterial highway.

City of Moreno Valley

The functional classifications and planned cross-sections of major roadways within the City of Moreno Valley's jurisdiction are described in the City of Moreno Valley General Plan (City of Moreno Valley 2006). The existing roadways in the study area that are within the City of Moreno are described below:

Alessandro Boulevard: This is a five- to six-lane east/west divided roadway that is located east of I-215. Alessandro Boulevard is designated as a divided major arterial in the City of Moreno Valley General Plan Circulation Element.

Cottonwood Avenue: This is a two-lane east–west undivided roadway east of I-215. It is designated as a minor arterial in the City of Moreno Valley General Plan Circulation Element.

Day Street: This is the border between the City of Riverside and the City of Moreno Valley, and is described above. Day Street is classified as a divided major arterial in the City of Moreno Valley General Plan Circulation Element.

Eucalyptus Avenue: This is a west–east, six-lane arterial. Eucalyptus Avenue can be reached from SR-60 by way of Day Street and from I-215 by way of existing northbound and southbound off-ramps. The City designates Eucalyptus Avenue as a 120-foot arterial. At its intersection with Memorial Way, Eucalyptus Avenue continues south and Towngate Drive is the east/west arterial. To the west of the I-215 freeway interchange, it continues as Eastridge Avenue in the City of Riverside.

Transit Service

The study area within the City and surrounding community of Moreno Valley are currently served by the Riverside Transit Authority (RTA), a public transit agency serving various jurisdictions within Riverside County. In the study area, RTA provides bus service along Sycamore Canyon Boulevard, Day Street, Eastridge Avenue/Eucalyptus Avenue, Alessandro Boulevard, I-215, and SR-60. This service includes RTA Routes 11, 16, 18, 19, 26, 31, 208, 210, 212 and Sunline 220. The majority of these Routes stop at the Moreno Valley Mall transfer point, which is an approximately 1.5 mile walk from the Project site. Route 16 also stops on Eucalyptus Avenue at Day Street.

The RTA services described above are current at the time that this analysis was conducted. However, transit service is reviewed and updated by RTA periodically to address ridership, budget, and community needs. Changes in land use can affect these periodic adjustments, which may lead to either enhanced or reduced service where appropriate.

Additional transit service in the Project area is provided by Metrolink. The Metrolink's Perris Valley Line, is an extension of the Metrolink 91 Line. The Perris Valley Line is 24 miles long running from the Downtown Riverside station to south Perris with 12 stops, including the closest stop at Moreno Valley/March Field, located approximately 2.5 miles from the Project site.

Bicycle and Pedestrian Facilities

Bicycle facilities are defined in California law as all facilities that provide primarily for bicycle travel. They are categorized into four classes, which cities across the State use for describing the various types of bicycle facilities. A Class I facility (bike path) provides a completely

separated right-of-way for the exclusive use of bicyclists and pedestrians with minimal crossflow of vehicles. A Class II facility (bike lane) provides a striped lane for one-way bike travel on a street or highway adjacent to vehicle traffic. Bike lanes can be buffered to provide greater separation of vehicles and bicyclists, but are located in the roadway right-of-way. A Class III facility (bike route) provides for shared used with pedestrian or vehicle traffic. A Class IV facility (cycle tracks) are exclusive bicycle facilities that physically separate the bicyclist from vehicle traffic and are distinct from the sidewalk.

The study area includes bicycle facilities in both the City of Riverside and the City of Moreno Valley. Bicycle facilities in the City and County of Riverside are shown in Appendix L. In the study area there is a bike lane along Sycamore Canyon Boulevard. Day Street is classified as a bike route between Box Springs Road and Eucalyptus Avenue by the City of Moreno Valley Bicycle Master Plan (City of Moreno Valley 2014). A bike lane is proposed along Box Springs Boulevard as part of the City of Riverside Bicycle Master Plan (City of Riverside 2007b). The Moreno Valley Bicycle Master Plan (City of Moreno Valley 2014) includes a future bike route on Day Street between Eucalyptus Avenue and Alessandro Boulevard, as well as a bike lane on Eucalyptus Avenue.

The majority of the roadways in the study area have sidewalks on both sides of the roadway. Roadways that are missing sidewalks on one or both sides of the street include Box Springs Boulevard, Bay Avenue, and portions of Eastridge Avenue/Eucalyptus Avenue.

4.11.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal Regulations

There are no federal regulations applicable to the Project.

State Regulations

California Department of Transportation

As determined by the California Department of Transportation (Caltrans), the LOS for operating State highway facilities is based upon measures of effectiveness (MOEs). These MOEs describe the measures best suited for analyzing State highway facilities (i.e., freeway segments, signalized intersections, on- or off-ramps). Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE should be maintained (Caltrans 2002). In general, the region-wide goal for an acceptable LOS on freeways, roadways, and intersections is LOS D.

Senate Bill 743: Transit Oriented Development & Vehicle Miles Traveled

In September 2013, Governor Brown signed Senate Bill 743, which made significant changes to how transportation impacts are to be assessed under CEQA. SB 743 directs the Governor's Office of Planning and Research to develop a new metric and approach that replaces LOS analysis and suggests vehicle miles traveled as a metric. SB 743 also creates a new exemption for certain projects that are consistent with the regional Sustainable Communities Strategy and, in some circumstances, eliminates the need to evaluate aesthetic and parking impacts of a project.

The Governor's Office of Planning and Research has released Draft CEQA Guidelines; however, at the time this analysis was completed, the Guidelines had not been finalized or adopted. It is anticipated that the revisions to the CEQA Guidelines will be finalized in 2017. According to the most recent Draft CEQA Guidelines released by the Governor's Office of Planning and Research, lead agencies would have a grace period of two years to update and adopt new thresholds once the new Guidelines have been adopted.

Regional Regulations

Congestion Management Program

The passage of Proposition 111 in June 1990 established a process for each metropolitan county in California that has an urbanized area with a population over 50,000 (which includes the County of Riverside) to prepare a congestion management program (CMP). Riverside County Transportation Commission (RCTC) is designated as the Congestion Management Agency (CMA) to oversee the CMP. The CMP that was prepared by the RCTC in 2011 in consultation with the county and cities in Riverside County is an effort to more directly align land use, transportation, and air quality management efforts and to promote reasonable growth management programs that effectively use statewide transportation funds while ensuring that new development pays its fair share of needed transportation improvements (RCTC 2011).

Although implementation of the CMP was made voluntary by the passage of AB 2419, the CMP requirement has been retained in all five urbanized counties within the SCAG region. In addition to their value as a transportation management tool, CMPs have been retained in these counties because of the federal Congestion Management System requirement that applies to all large, urban areas that are not in attainment of federal air quality standards.

The CMP adopted LOS standard is LOS E. Per the CMP, when a Congestion Management System segment falls to LOS F, a deficiency plan is required. Preparation of a deficiency plan is the responsibility of the local agency where the deficiency is located. Other agencies identified as contributors to the deficiency are also required to coordinate with the development of the plan. The plan must contain mitigation measures, including TDM strategies and transit alternatives,

and a schedule of mitigating the deficiency. To ensure that the Congestion Management System is appropriately monitored to reduce the occurrence of CMP deficiencies, it is the responsibility of local agencies, when reviewing and approving development proposals, to consider the traffic impacts on the Congestion Management System.

Transportation Uniform Mitigation Fee Program

The Western Riverside Council of Governments (WRCOG) is responsible for establishing and updating the Transportation Uniform Mitigation Fee (TUMF) program. TUMF is a multi-jurisdictional impact fee program that funds transportation improvements on a regional and sub-regional basis associated with new growth. All new development in each of the participating jurisdictions is subject to TUMF, based on the proposed intensity and type of development. TUMF fees are submitted to the City by the applicant and are passed on to WRCOG as the ultimate program administrator. TUMF funds are distributed on a formula basis to the regional, local, and transit components of the program.

The City may grant to developers a credit against the specific component of fees for the dedication of land or the construction of facilities identified in the list of improvements funded by each of these fee programs. Fees are based upon projected land uses and related transportation needs to address growth based upon a nexus study. An updated Draft Nexus Study has been completed and is in the final stages of development with adoption anticipated in July or August 2017.

TUMF is a regional program created to address cumulative impacts of growth throughout Western Riverside County. Program guidelines are being handled on an iterative basis. Exemptions, credits, reimbursements, and local administration are being deferred to primary agencies. The City serves this function for the Project. Fees submitted to the City are passed on to the WRCOG as the ultimate program administrator.

TUMF guidelines empower a local zone committee to prioritize and arbitrate certain projects. The Project is located in the Northwest zone. The zone has developed a 5-year capital improvement program to prioritize public construction of certain roads. TUMF is focused on improvements necessitated by regional growth. Eastridge Avenue / Eucalyptus Avenue and Alessandro Boulevard are designated TUMF roadways within the Project's study area.

Local Regulations

City of Riverside Development Impact Fee Program

The City's Development Impact Fee (DIF) program is comprised of two separate transportation components, which include the Traffic and Railroad Signal Mitigation Fee and the

Transportation Impact Fee. The City's two transportation fee components address local transportation needs citywide. The City's DIF program has a unique approach toward fee collection. Non-residential development is subject to the Traffic and Railroad Signal Mitigation Fee component, but is not assessed the Transportation Impact Fee component.

The Project applicant will be subject to the City's DIF fee program, and will pay the requisite City DIF fees at the rates then in effect pursuant to the City's ordinance.

City of Riverside Neighborhood Traffic Management Program

As traffic volumes and congestion have increased on the major regional roadways, drivers looking to reduce their travel times begin to look at alternative routes using the local street system to avoid problem areas. This neighborhood intrusion by "cut-through" traffic has become a growing concern for some residential areas. The City has an active Neighborhood Traffic Management Program to minimize and/or prevent intrusion of regional cut-through traffic into residential neighborhoods through traffic management and traffic calming strategies, and to improve the livability of neighborhoods through controlling the impacts of outside traffic. The strategies include speed control methods, parking restrictions, speed humps, pedestrian safety improvements, and sight obstruction elimination (City of Riverside 2007a, p. CCM-22).

City of Riverside General Plan 2025

The Circulation and Community Mobility Element of the City of Riverside General Plan 2025 (City of Riverside 2007a) contains goals, recommendations, objectives, guidelines, and standards for the management of circulation and mobility in the City. Policy CCM-2.3 requires that LOS D or better be maintained on arterial streets wherever possible. The General Plan further indicates that LOS E may be warranted, based on a case-by-case evaluation at certain key locations such as arterial roadways, which are used as a freeway bypass by regional through traffic, and at heavily traveled freeway interchanges. Additionally, it allows LOS C to be adopted for local streets and collectors in residential areas. The Traffic Impact Analysis Guidelines call for LOS C on local streets (City of Riverside 2016). The following General Plan policies are applicable to the Project and aim to minimize adverse conditions for traffic and transportation in the City.

Policy AQ-1.5: Encourage infill development projects within urbanized areas, which include job centers and transportation nodes.

Policy AQ-1.9: Adhere to the adopted Master Plan for open spaces, trails and bikeways.

Policy AQ-1.10: Encourage job creation in job-poor areas as a means of reducing vehicle miles traveled.

Policy AQ-1.13: Encourage employment centers that are non-polluting or extremely low polluting and do not draw large numbers of vehicles in proximity to residential uses.

Policy AQ-1.15: Establish land use patterns that reduce the number and length of motor vehicle trips and promote alternative modes of travel.

Policy AQ-1.16: Design safe and efficient vehicular access to commercial land uses from arterial streets to ensure efficient vehicular ingress and egress.

Policy AQ-1.19: Require future commercial areas to foster pedestrian circulation through the land use entitlement process and/or business regulation.

Policy AQ-1.20: Create the maximum possible opportunities for bicycles as an alternative work transportation mode.

Policy AQ-1.22: Implement the required components of the Congestion Management Plan (CMP) and continue to work with Riverside County Transportation Commission on annual updates to the CMP.

Policy AQ-2.1: Support Transportation Management Associations between large employers and commercial/ industrial complexes.

Policy AQ-2.2: Support programs and educate employers about employee rideshare and transit incentives for employers with more than 250 employees at a single location. The City will provide incentives and programs to encourage alternative methods of transit.

Policy AQ-2.3: Cooperate with local, regional, State and Federal jurisdictions to reduce vehicle miles traveled (VMT) and motor vehicle emissions through job creation in job-poor areas.

Policy AQ-2.6: Develop trip reduction plans that promote alternative work schedules, ridesharing, telecommuting and work at-home programs, employee education and preferential parking.

Policy AQ-2.7: Use incentives, regulations and Transportation Demand Management in cooperation with surrounding jurisdictions to eliminate vehicle trips that would otherwise be made.

Policy AQ-2.8: Work with Riverside Transit Authority (RTA) to establish mass transit mechanisms for the reduction of work-related and non-work-related vehicle trips.

Policy AQ-2.17: Encourage, and to the extent possible, require through the land use entitlement or business regulation process, business owners to schedule deliveries at off-peak traffic periods.

Policy AQ-2.23: Preserve transportation corridors with the potential of high demand or of regional significance for future expansion to meet project demand.

Policy AQ-8.23: Apply urban planning principles that encourage higher density, mixed use, walkable/bikeable neighborhoods, and coordinate land use and transportation with open space systems in 2008.

Policy CCM-1.2: Support the addition of capacity improvements to SR-91, SR-60, I-215, and I-15.

Policy CCM-2.2: Balance the need for free traffic flow with economic realities and environmental and aesthetic considerations, such that streets are designed to handle normal traffic flows with tolerances to allow for potential short-term delays at peak flow hours.

Policy CCM-2.3 Maintain LOS D or better on Arterial Streets wherever possible. At key locations, such as City Arterials that are used by regional freeway bypass traffic and at heavily traveled freeway interchanges, allow LOS E at peak hours as the acceptable standard on a case-by-case basis.

Policy CCM-2.4: Minimize the occurrence of streets operating at LOS "F" by building out the planned street network and by integrating land use and transportation in accordance with the General Plan principles.

Policy CCM-2.7 Limit driveway and local street access on Arterial Streets to maintain a desired quality of traffic flow. Wherever possible, consolidate driveways and implement access controls during redevelopment of adjacent parcels.

Policy CCM-6.1: Encourage the reduction of vehicle miles, reduce the total number of daily peak hour vehicular trips, increase the vehicle occupancy rate and provide better utilization of the circulation system through the development and implementation of Transportation Demand Management (TDM) programs contained in the South Coast Air Quality Management District and County of Riverside TDM Guidelines.

Policy CCM-9.1: Encourage increased use of public transportation and multi-modal transportation as means of reducing roadway congestion, air pollution and non-point source water pollution, through such techniques as directing new growth along transportation corridors.

Policy CCM-9.7: Ensure adequate connections among all alternative modes.

Policy CCM-10.2: Incorporate bicycle and pedestrian trails and bicycle racks in future development projects.

Policy CCM-10.3: Provide properly designed pedestrian facilities for the disabled and senior population to ensure their safety and enhanced mobility as users of streets, roads, and highways emphasizing "complete streets" principles.

Policy CCM-10.5: Promote the health benefits of using a bicycle or walking as means or transportation.

Policy CCM-10.6: Encourage pedestrian travel through the creation of sidewalks and street crossings.

Policy CCM-10.12: Encourage bicycling as a commute mode to school, work, etc.

Policy CCM-13.1: Ensure that new development provides adequate parking.

Policy CCM-13.2: Accommodate joint use of parking facilities as part of an area plan or site plan, based on the peak parking demands of permitted uses in the planning area.

Policy ED-4.6: Work towards providing a bicycle network within Riverside that connects schools, employment centers and residential areas.

Policy N-4.1: Ensure that noise impacts generated by vehicular sources are minimized through the use of noise reduction features (e.g., earthen berms, landscaped walls, lowered streets, improved technology).

Policy N-4.5: Use speed limit controls on local streets as appropriate to minimize vehicle traffic noise.

Policy OS-1.6: Ensure that any new development that does occur is effectively integrated through convenient street and/or pedestrian connections, as well as through visual connections.

Policy OS-8.10: Support the use of public transportation, bicycling and other alternative transportation modes in order to reduce the consumption of non-renewable energy supplies.

Policy OS-8.12: Require bicycle parking in new non-residential development.

Policy PS-4.12: Implement roadway improvements identified in the Circulation and Community Mobility Element intended to improve roadway safety.

Policy PS-5.4: Require that new development provide adequate safety lighting in pedestrian areas and parking lots.

Policy PS-10.4: Continue to ensure that each development or neighborhood in the City has adequate emergency ingress and egress, and review neighborhood access needs to solve problems, if possible.

4.11.3 Methodology

This section presents the methodology used to perform the traffic impact analysis. The methodology described is consistent with the City of Riverside's and City of Moreno Valley's, Traffic Impact Analysis Preparation Guide (City of Riverside 2016; City of Moreno Valley 2007).

Study Scenarios

For the purposes of this analysis, potential impacts related to traffic have been assessed for each of the following scenarios:

- **Existing Conditions (Baseline):** Information for existing (2014) conditions is disclosed to represent the baseline traffic conditions, as they existed at the time the analysis was completed.
- **Existing With Project:** The Existing With Project analysis determines significant traffic impacts that will occur on the existing roadway system with the addition of Project traffic. The Existing With Project scenario is intended to identify the Project-specific impacts associated solely with the development of the Project.
- **Cumulative without Project:** The Cumulative Without Project analysis establishes traffic conditions as they will be without implementation of the Project and provides a comparison point for Cumulative With Project. To account for growth, traffic associated with approved and pending development projects is combined with a compounded growth rate of two percent per year over two years (or a total near term ambient growth factor of 4.04%).
- **Cumulative With Project:** The Cumulative With Project analysis determines cumulative traffic impacts based on a comparison to the Cumulative Without Project scenario.
- **General Plan Buildout Without Project:** The General Plan Buildout Without Project analysis establishes traffic conditions as they will be without implementation of the Project and provides a comparison point for General Plan Buildout With Project. For General Plan Buildout Conditions, the volumes have been based on the traffic projections from the City of Riverside General Plan 2025 traffic model, City of Moreno Valley traffic model, and Riverside Transportation Analysis Model (RivTAM).
- **General Plan Buildout With Project**: The General Plan Buildout With Project analysis determines impacts at General Plan buildout from the Project based on a comparison to the General Plan Buildout Without Project scenario.

Level of Service

On January 20, 2016, the State of California Governor's Office of Planning and Research (OPR) released for public review a Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, which implements Senate Bill 743 (SB 743). The draft guidelines provide that analysis of vehicle miles traveled (VMT) will be voluntary for two years following adoption of the new guidelines. OPR has not yet finalized or adopted these guidelines and as such the City is not implementing VMT analysis for new developments within the City at this time. Therefore, the TIA and the City use the level of service (LOS) metric to quantify traffic operations and describe how well an intersection or roadway segment is functioning. Therefore, traffic operations of roadway facilities are described using LOS. LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing a breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

The intersection LOS analysis for Existing Conditions is based on the traffic volumes observed during peak hour conditions using traffic count data collected in November 2014. Consistent with standard traffic engineering practice, these traffic counts were conducted either on Tuesday, Wednesday, or Thursday due to potential fluctuations in traffic that typically occur on Mondays, Fridays, holidays, or weekends. In coordination with the City, the following peak hours were selected for analysis:

- Weekday AM Peak Hour: the peak hour between the period of 7:00 AM to 9:00 AM
- Weekday PM Peak Hour: the peak hour between the period of 4:00 PM to 6:00 PM

The count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that indicated atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules.

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The Highway Capacity Manual (HCM) 2010 methodology expresses LOS at an intersection in terms of delay time for the various approaches. The HCM uses different procedures depending on the type of intersection control (TRB 2010).

Signalized Intersections

The City of Riverside and the City of Moreno Valley require signalized intersection operations analysis based on the methodology described in the HCM 2010. Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections, LOS is directly related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 4.11-5.

Table 4.11-5
Highway Capacity Manual Signalized Intersection LOS Definitions[1]

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A	F
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B	F
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C	F
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D	F
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E	F
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F	F

Source: TRB 2010
Notes: V/C = volume to capacity ratio
1. The City of Riverside LOS thresholds for projects that do not conform to the General Plan are based on a sliding delay scale as described in Table 4.11-16 in Section 4.11.4, *Thresholds of Significance.*

Study area intersections located within the City of Riverside and City of Moreno Valley have been analyzed using the software package Synchro Version 8.0, Build 801, which was current at the time the analysis was conducted. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The LOS and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

Per the Caltrans *Guide for the Preparation of Traffic Impact Studies*, Synchro was used to analyze signalized intersections under Caltrans' jurisdiction, which include interchange to arterial ramps such as the I-215 Freeway ramps at Eucalyptus Avenue and the SR-60 Freeway ramps at Day Street (Caltrans 2002).

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Common practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM 2010, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour.

Unsignalized Intersections

The City of Riverside and City of Moreno Valley require the operations of unsignalized intersections be evaluated using the methodology described in the HCM. The LOS rating is based on the weighted average control delay expressed in seconds per vehicle, as shown in Table 4.11-6.

Table 4.11-6
Unsignalized Intersection LOS Thresholds

Description	Average Control Delay Per Vehicle (Seconds)	Level of Service, V/C≤ 1.0	Level of Service, V/C> 1.0
Little or no delays.	0 to 10.00	A	F
Short traffic delays.	10.01 to 15.00	B	F
Average traffic delays.	15.01 to 25.00	C	F
Long traffic delays.	25.01 to 35.00	D	F
Very long traffic delays.	35.01 to 50.00	E	F
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F	F

Source: T R B 2010
Notes: LOS = Level of Service; V/C = volume to capacity

At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. For all-way stop controlled intersections, LOS is computed for the intersection as a whole.

Roadway Segments

Roadway segment operations have been evaluated based on average daily traffic (ADT) capacity thresholds as provided in Exhibit D of the City's TIA Guidelines (City of Riverside 2016). The daily roadway segment capacities for each type of roadway are summarized in Table 4.11-7.

Table 4.11-7
City of Riverside Roadway Segment Capacity LOS Thresholds[1]

Roadway Classification	Number of Lanes	Two-Way Traffic Volume (ADT)[2]		
		Service Level C	*Service Level D*	*Service Level E*
Local	2	2,500-2,799	2,800-3,099	3,100+
Collector (66-foot or 80-foot)	2	9,900-11,199	11,200-12,499	12,500+
Arterial	2	14,400-16,199	16,200-17,999	18,000+
Arterial (88-foot)	4	16,800-19,399	19,400-21,199	22,000+
Arterial (100-foot)	4	26,200-29,599	29,600-32,999	33,000+
Arterial (120-foot)	6	38,700-44,099	44,100-49,499	49,500+
Arterial (144-foot)	8	50,600-57,799	57,800-64,999	65,000+

Source: City of Riverside 2016
Notes:
1 All capacity figures are based on optimum conditions and are intended as guidelines for planning purposes only.
2 Maximum two-way ADT values are based on the 1999 Modified Highway Capacity Manual Level of Service Tables. Two-lane roadways designated as future arterials that conform to arterial design standards for vertical and horizontal alignment area analyzed as arterials.

These roadway capacities are "rule of thumb" estimates for planning purposes and are affected by such factors as intersections (spacing, configuration and control features), degree of access control, roadway grades, design geometrics (horizontal and vertical alignment standards), sight distance, and vehicle mix (truck and bus traffic). Where the ADT-based roadway segment analysis indicates a deficiency, a review of the more detailed peak hour intersection analysis is undertaken. The more detailed peak hour intersection analysis explicitly accounts for factors that affect roadway performance. Therefore, roadway segment widening is typically only recommended if the peak hour intersection analysis indicates the need for additional through travel lanes.

Traffic Signal Warrant Analysis Methodology

The term "signal warrant" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the potential need for installation of a traffic signal at an otherwise unsignalized intersection. The TIA prepared for the Project uses the signal warrant criteria presented in the latest edition of the Federal Highway Administration's (FHWA) *Manual on Uniform Traffic Control Devices* (MUTCD), as amended by the MUTCD 2012 California Supplement, for all study area intersections (FHWA 2009).

The signal warrant criteria for existing study area intersections is based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. Both the FHWA's MUTCD and the MUTCD 2012 California Supplement indicate that the installation of a traffic signal should be considered if one or more of the signal warrants are met. Specifically, the analysis utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for Existing With Project Conditions. Warrant 3 criteria are almost identical for both the FHWA's MUTCD and the MUTCD 2012 California Supplement. Warrant 3 is appropriate to use for this traffic analysis because it provides specialized warrant criteria for intersections with rural characteristics such as communities with a population of less than 10,000 persons or with adjacent major streets operating above 40 miles per hour. For the purposes of this traffic analysis, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection.

Future intersections that do not currently exist have been assessed regarding the potential need for new traffic signals based on future ADT volumes, using the Caltrans planning level ADT-based signal warrant analysis worksheets.

Traffic signal warrant analyses were performed for the unsignalized study area intersections listed in Table 4.11-8.

Table 4.11-8
Traffic Signal Warrant Analysis Locations

ID	Intersection Location	Jurisdiction
10	Day Street / Driveway 1 – Future Intersection	City of Riverside / City of Moreno Valley
14	Day Street / Bay Avenue	City of Moreno Valley
18	Corporate Centre Place / Campus Parkway	City of Riverside
19	Driveway 3 / Corporate Centre Place – Future Intersection	City of Riverside
21	Valley Springs Parkway / Driveway 4	City of Riverside
23	Valley Springs Parkway / Driveway 5 – Future Intersection	City of Riverside
24	Driveway 6 / Gateway Drive	City of Riverside
25	Canyon Park Drive – Driveway 7 / Gateway Drive	City of Riverside
26	Driveway 8 / Gateway Drive – Future Intersection	City of Riverside
27	Driveway 9 / Gateway Drive	City of Riverside
28	Canyon Park Drive / Campus Parkway	City of Riverside
29	Canyon Park Drive / Driveway 10 – Future Intersection	City of Riverside

Source: Appendix L.

The traffic signal warrant analysis for future conditions are presented in Section 4.11.6, Environmental Impacts Before Mitigation. It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular

location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

Freeway Mainline Segment Analysis Methodology

The freeway system in the study area has been divided into segments defined by the freeway-to-arterial interchange locations. The freeway segments have been evaluated based upon peak hour directional volumes. The freeway segment analysis is based on the methodology described in the HCM and performed using HCS 2010 software. The performance measure preferred by Caltrans to calculate LOS is density as expressed in terms of passenger cars per mile per lane. Table 4.11-9 illustrates the freeway segment LOS descriptions for each density range utilized for this analysis.

Table 4.11-9
Freeway Mainline LOS Thresholds

Level of Service	Description	Density Range (pc/mi/ln)[1]
A	Free-flow operations in which vehicles are relatively unimpeded in their ability to maneuver within the traffic stream. Effects of incidents are easily absorbed.	0.0 – 11.0
B	Relative free-flow operations in which vehicle maneuvers within the traffic stream are slightly restricted. Effects of minor incidents are easily absorbed.	11.1 – 18.0
C	Travel is still at relative free-flow speeds, but freedom to maneuver within the traffic stream is noticeably restricted. Minor incidents may be absorbed, but local deterioration in service will be substantial. Queues begin to form behind significant blockages.	18.1 – 26.0
D	Speeds begin to decline slightly and flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited. Minor incidents can be expected to create queuing as the traffic stream has little space to absorb disruptions.	26.1 – 35.0
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce a serious disruption in traffic flow and extensive queuing.	35.1 – 45.0
F	Breakdown in vehicle flow. Demand exceeds capacity.	>45.0

Source: TRB 2010
Notes:
1 pc/mi/ln = passenger cars per mile per lane.

The I-215 and SR-60 mainline volume data was obtained from the Caltrans Performance Measurement System (PeMS) website for the segments along the I-215 interchange at Eucalyptus Avenue and SR-60 interchange at Day Street. Freeway mainline peak hour volumes have been obtained for a three-day period from November 4th through 6th, 2014 and have been flow conserved with freeway-ramp-to-arterial peak hour count data conducted during these same dates. In an effort to conduct a conservative analysis, the maximum value observed within the

three-day period was utilized for the morning (AM) and evening (PM) peak hours. In addition, truck data has been obtained from the Caltrans Traffic Data Branch website. The Caltrans 2013 Annual Average Daily Truck Traffic on the California State Highway System is utilized which presents a 10.9% truck percentage along the I-215 Freeway and 10.5% truck percentage along the SR-60 Freeway within the study area. For the purpose of this traffic analysis, actual vehicles (as opposed to passenger-car-equivalent volumes) and a parameter of 11% (rounded value) truck percentage have been utilized for the calculation of the basic freeway segment and merge/diverge analysis.

Freeway Merge/ Diverge Ramp Junction Analysis

The merge/diverge analysis is based on the HCM 2010 Freeway Merge and Diverge Segments analysis method and performed using HCS 2010 software. The measure of effectiveness (reported in passenger car/mile/lane) are calculated based on the existing number of travel lanes, number of lanes at the on and off ramps both at the analysis junction and at upstream and downstream locations (if applicable) and acceleration/deceleration lengths at each merge/diverge point. Table 4.11-10 presents the merge/diverge area LOS thresholds for each density range utilized for this traffic analysis.

Table 4.11-10
Description of Freeway Merge and Diverge LOS

Level of Service	Density Range (pc/mi/ln)[1]
A	≤10.0
B	10.0 – 20.0
C	20.0 – 28.0
D	28.0 – 35.0
E	>35.0
F	Demand Exceeds Capacity

Source: TRB 2010
Notes:
1 pc/mi/ln = passenger cars per mile per lane.

Similar to the basic freeway segment analysis, mainline volume data was obtained from the Caltrans PeMS website. The ramp data was then utilized to flow conserve the mainline volumes and determine the freeway mainline volumes on either side of interchange. The data was obtained from November 2014. In an effort to conduct a conservative analysis, the maximum value observed within the three-day period was utilized for the weekday morning (AM) and weekday evening (PM) peak hours. In addition, truck traffic, represented as a percentage of total traffic, has been utilized for the purposes of this analysis in an effort to not overstate traffic volumes and peak hour deficiencies. As such, actual vehicles (as opposed to passenger-car-

equivalent (PCE) volumes) have been utilized for the purposes of the freeway ramp junction (merge/diverge) analysis. Truck data were obtained from the Caltrans website.

Progression Analysis

A traffic signal progression analysis was conducted for the following locations under Cumulative With Project Conditions and General Plan Buildout With Project Conditions, with the identified intersection improvements, to evaluate vehicular queuing by considering the signal timing and physical spacing of intersections:

- Eastridge Avenue-Eucalyptus Avenue, between Box Springs Boulevard and Valley Springs Parkway.
- Day Street, between SR-60 Westbound ramps and Cottonwood Avenue.

The progression analysis conducted along Eucalyptus Avenue and Day Street in the study area was utilized to determine the turning pocket lengths necessary to accommodate 95th percentile peak hour queues and to demonstrate acceptable peak hour operations. The progression analysis was conducted for the weekday AM and PM peak hours.

The traffic modeling and signal timing optimization software package Synchro plus SimTraffic (Version 8 Build 801) was utilized for the progression analysis. The simulation model includes the intersections along Eastridge Avenue/Eucalyptus Avenue, between Box Springs Boulevard and Valley Springs Parkway, and Day Street, between SR-60 Westbound ramps and Cottonwood Avenue.

SimTraffic is a traffic simulation software application that utilizes the Synchro network. SimTraffic is designed to model networks for signalized and unsignalized intersections, with the primary purpose of checking and fine turning signal operations. SimTraffic uses the input parameters from Synchro to generate random simulations. The random simulations generated by SimTraffic have been utilized to determine the 95th percentile queue lengths observed along these roadway segments. A SimTraffic simulation was recorded five times, during the weekday AM and PM peak hours, and was seeded for 5-minute periods with 10-minute recording intervals. The queuing length results are based on an average of these five simulations.

Project Fair Share Calculation Methodology

In cases where the traffic analysis identifies that the Project will have a significant cumulative impact to a roadway facility, and the recommended mitigation measure is a fair share monetary contribution, the following methodology was applied to determine the fair share contribution.

A project's fair share contribution at an off-site study area intersection is determined based on the following equation, which is the ratio of project traffic to new traffic, and new traffic is total future traffic subtracts existing baseline traffic:

Project Fair Share % = Project Traffic /(General Plan Buildout With Project Total Traffic – Existing 2014 Traffic)

Existing Conditions

Traffic Counts

Manual weekday AM and PM peak hour turning movement counts were conducted in November 2014 by Urban Crossroads. The raw manual peak hour turning movement traffic count data sheets are included in Appendix L.

Existing ADT volumes on arterial highways throughout the study area are shown in Figure 4.11-2. The ADT volumes are either based on traffic counts or have been estimated by factoring up peak hour counts. The following formula was used to estimate the daily volume for each intersection leg if daily traffic counts were not available:

- Weekday PM Peak Hour (Approach Volume + Exit Volume) x 12 = Leg Volume

Based on a comparison of PM peak hour traffic count data to 24-hour tube count data along roadway segments in close proximity to the study area, it was determined that the PM peak hour volumes were approximately 8% to 9% of the total 24-hour daily volume on select segments. As such, it was further determined that the above equation could be utilized to approximate the ADT volume on the study area segments based on the same relationship (e.g., 8% to 9% PM peak-to-daily relationship) (Appendix L).

Existing weekday AM and PM peak hour intersection volumes are shown in Figures 4.11-3 and 4.11-4, respectively. All of the intersection turning movement volumes illustrated on the figures and used in the traffic analysis are shown in terms of actual vehicles (e.g., no PCE factor has been applied).

Existing Conditions Intersection Operations Analysis

Existing peak hour traffic operations have been evaluated for the study area intersections based on the methodology presented in Section 4.11.3. The results are summarized in Table 4.11-11, which indicates that the existing study area intersections are currently operating at an acceptable LOS during the peak hours.

Table 4.11-11
Existing Conditions Intersection Operations

ID	Intersection	Traffic Control[1]	Delay[2] (secs.)		Level of Service	
			AM	*PM*	*AM*	*PM*
1	Sycamore Canyon Boulevard / Eastridge Avenue	TS	44.8	30.4	D	C
2	Box Springs Boulevard / Eastridge Avenue	TS	12.2	15.5	B	B
3	I-215 NB and SB Ramps / Eucalyptus Avenue	TS	33.9	29.1	C	C
	I-215 SB Ramps / Eucalyptus Avenue	CSS	17.1	13.4	C	B
	I-215 NB Ramps / Eucalyptus Avenue	TS	0.1	0.4	A	A
4	Valley Springs Parkway / Eucalyptus Avenue	TS	38.2	37.2	D	D
5	Day Street / SR-60 WB Ramps	TS	16.8	11.4	B	B
6	Day Street / SR-60 EB Ramps	TS	11.2	12.0	B	B
7	Day Street / Canyon Springs Parkway	TS	14.8	26.1	B	C
8	Day Street / Campus Parkway	TS	11.4	26.6	B	C
9	Day Street / Gateway Drive	TS	18.9	28.0	B	C
10	Day Street / Driveway 1	Does Not Exist				
11	Day Street / Driveway 2	CSS	12.1	16.7	B	C
12	Day Street / Eucalyptus Avenue	TS	32.0	29.5	C	C
13	Day Street / Cottonwood Avenue	TS	26.7	24.6	C	C
14	Day Street / Bay Avenue	AWS	10.4	10.5	B	B
15	Day Street / Alessandro Boulevard	TS	15.4	16.9	B	B
16	Memorial Way / Towngate Drive	TS	34.0	29.7	C	C
17	Corporate Centre Place / Canyon Springs Parkway	TS	36.9	34.2	D	C
18	Corporate Centre Place / Campus Parkway	AWS	8.0	9.7	A	A
19	Driveway 3 / Corporate Centre Place	Does Not Exist				
20	Valley Springs Parkway / Corporate Centre Place	TS	15.9	20.4	B	C
21	Valley Springs Parkway / Driveway 4	CSS	10.5	13.2	B	B
22	Valley Springs Parkway / Gateway Drive	TS	11.4	9.9	B	A
23	Valley Springs Parkway / Driveway 5	Does Not Exist				
24	Driveway 6 / Gateway Drive	CSS	10.1	10.9	B	B
25	Canyon Park Drive – Driveway 7 / Gateway Drive	CSS	10.7	11.3	B	B
26	Driveway 8 / Gateway Drive	Does Not Exist				
27	Driveway 9 / Gateway Drive	CSS	8.8	9.3	A	A
28	Canyon Park Drive / Campus Parkway	AWS	8.2	9.7	A	A
29	Canyon Park Drive / Driveway	Does Not Exist				
30	Canyon Park Drive / Driveway 11	Does Not Exist				
31	Canyon Park Drive / Driveway 12	Does Not Exist				
32	Driveway 13 / Gateway Drive	Does Not Exist				
33	Valley Springs Parkway / Driveway 14	Does Not Exist				
34	Driveway 15 / Corporate Center Place	Does Not Exist				

Source: Appendix L.
Notes:
1. TS = Traffic Signal; CSS = Cross-street Stop; CSY: Cross-street yield; AWS = All-Way Stop; UNC = uncontrolled.

2. Per the 2010 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

Existing Conditions Roadway Segment Capacity Analysis

Existing roadway segment capacity was evaluated for key roadway segments based on the analysis methodology presented in Section 4.11.3. The roadway segment capacities are approximate figures only, and are used at the General Plan level to assist in determining the number of through lanes needed to meet traffic demand. As shown in Table 4.11-12, the study area roadway segments operate at acceptable LOS based on the General Plan average daily traffic thresholds.

Table 4.11-12
Roadway Volume/Capacity Analysis for Existing Conditions

Roadway	Segment	Through Travel Lanes[1]	LOS E Capacity[2]	ADT[3]	Volume / Capacity Ratio
Eastridge Avenue – Eucalyptus Avenue	West of Sycamore Canyon Boulevard	5	45,800	8,600	0.19
	Between Box Springs Boulevard and I-215	4	36,600	19,400	0.53
	Between I-215 and Valley Springs Parkway	5	45,800	30,500	0.67
	West of Day Street	4	36,600	17,100	047
	East of Day Street	5	45,800	13,900	0.30
Valley Springs Parkway	North of Eucalyptus Avenue	5	45,800	17,400	0.38
Day Street	Between SR-60 Eastbound Ramps and Canyon Springs Parkway	6	54,900	39,200	0.71
	North of Eucalyptus Avenue	5	45,800	16,800	0.37
	South of Eucalyptus Avenue	4	36,400	11,800	0.32
	South of Cottonwood Avenue	2	11,500	7,100	0.62
Gateway Drive	West of Day Street	4	36,400	5,000	0.14

Source: Appendix L.
Notes:
1. Existing Number of Through Lanes
2. Level of Service (LOS) E capacity has been estimated based on the City of Riverside's Traffic Impact Analysis (TIA) Preparation Guide, Exhibit D – City of Riverside Roadway Capacity.
3. Average Daily Traffic (ADT) expressed in vehicles per day.

Existing Conditions Traffic Signal Warrants Analysis

Traffic signal warrants for Existing Conditions are based on existing peak hour intersection turning volumes. Based on the methodology described in Section 4.11.3 the unsignalized study area intersections do not warrant traffic signals in Existing Conditions.

Existing Conditions Basic Freeway Segment Analysis

Existing mainline directional volumes for the weekday AM and PM peak hours are provided on Figures 4.11-3 and 4.11-4, respectively. As shown in Table 4.11-13, the basic freeway segments analyzed under Existing Conditions were found to operate at an acceptable LOS during the peak hours, with the exception of the I-215 southbound freeway mainline segment, south of Eucalyptus Avenue, which is currently operating at LOS E during the PM peak hour. Existing basic freeway segment analysis worksheets are provided in the Appendix L.

Table 4.11-13
Basic Freeway Segment Analysis for Existing Conditions

Freeway	Direction	Mainline Segment	Lanes[1]	Volume		Density[2]		LOS[3]	
				AM	*PM*	*AM*	*PM*	*AM*	*PM*
I-215 Freeway	*Northbound*	South of Eucalyptus Avenue	3	4,155	4,420	23.8	25.8	C	C
		Between Ramps	3	3,690	3,750	20.7	21.1	C	C
		North of Eucalyptus Avenue	3	4,064	4,239	23.2	24.4	C	C
	Southbound	North of Eucalyptus Avenue	5	5,047	6,287	16.8	21.2	B	C
		Between Ramps	3	4,693	5,354	27.9	34.2	D	D
		South of Eucalyptus Avenue	3	5,123	6,087	31.8	43.8	D	**E**
SR-60 Freeway	*Westbound*	East of Day Street	4	3,428	3,623	14.0	14.8	B	B
		Between Ramps	3	2,835	3,011	15.5	16.4	B	B
		West of Day Street	3	3,146	3,517	17.2	19.3	B	C
	Eastbound	West of Day Street	6	3,358	5,382	9.2	14.7	A	B
		Between Ramps	4	2,895	4,479	11.9	18.4	B	C
		East of Day Street	5	3,373	5,340	11.1	17.5	B	B

Source: Appendix L.
Notes:
Bold = Unacceptable Level of Service (LOS E or LOS F)
1. Number of lanes are in the specified direction and is based on existing conditions.
2. Density is measured by passenger cars per mile per lane (pc/mi/ln).
3. Level of service determined using HCS 2010: Basic Freeway Segments software, Version 6.65.

Existing Conditions Freeway Merge/ Diverge Analysis

The results of the ramp merge and diverge operations for Existing Conditions are shown in Table 4.11-14. The I-215 southbound on-ramp at Eucalyptus Avenue currently exceeds the acceptable LOS during the PM peak hour, with existing geometry. Existing freeway ramp junction operations analysis worksheets are provided in Appendix L.

Table 4.11-14
Freeway Ramp Junction Merge/Diverge Analysis for Existing Conditions

Freeway	Direction	Ramp or Segment	Junction Type	Lanes on Freeway	Lanes on Ramp	Volume		Density[1]		LOS[2]	
						AM	*PM*	*AM*	*PM*	*AM*	*PM*
I-215	*Northbound*	Northbound Off-Ramp at Eucalyptus Avenue	Diverge	3	1	465	670	30.0	31.7	D	D
		Northbound On-Ramp at Eucalyptus Avenue	Merge	3	1	374	489	25.8	27.0	C	C
	Southbound	Southbound Off-Ramp at Eucalyptus Avenue	Diverge	5	2	354	933	9.3	12.2	A	B
		Southbound On-Ramp at Eucalyptus Avenue	Merge	3	1	430	733	30.6	36.6	D	**E**
SR-60	*Westbound*	Westbound Off-Ramp at Day Street	Diverge	4	1	593	612	13.1	14.1	B	B
		Westbound On-Ramp at Day Street	Merge	3	1	311	506	17.6	20.1	B	C
	Eastbound	Eastbound Off-Ramp at Day Street	Diverge	6	2	463	903	13.4	18.2	B	B
		Eastbound On-Ramp at Day Street	Merge	4	1	478	861	13.4	22.2	B	C

Source: Appendix L.
Notes:
Bold = Unacceptable Level of Service (LOS E or LOS F)
1. Density calculated based on the Highway Capacity Manual (HCM) analysis; (pc/mi/ln) = passenger car per mile per lane
2. Level of service determined using HCS 2010: Ramps and Ramp Junction software, Version 6.60

4.11.4 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.) as well as the City of Riverside Traffic Impact Analysis Preparation Guide (City of Riverside 2016), and will be used to determine the significance of potential transportation and traffic impacts. Based on the IS (Appendix A) and Appendix G of the State CEQA Guidelines, impacts to transportation and traffic will be significant if the Project:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; and
- Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

As discussed above, the IS concluded that potential impacts related to thresholds TRAF-4 through TRAF-6 are less than significant, and therefore, these topics are not discussed further in this Draft EIR.

City of Riverside

The City of Riverside uses LOS standards based on the functional classification of the roadway. LOS D is to be used as the maximum acceptable threshold for study intersections and roadways classified as collectors or higher for projects that conform with the General Plan. However, roadways classified as local streets should be maintained at LOS C (City of Riverside 2016). Additionally, Policy CCM-2.3 of the General Plan allows for LOS E at key locations such as arterials that are used by regional traffic to bypass the freeway traffic. Locations that may warrant the LOS E standard include portions of Arlington Avenue/Alessandro Boulevard, Van Buren Boulevard throughout the City, portions of La Sierra Avenue and selected freeway interchanges (City of Riverside 2007a).

Table 4.11-15
City of Riverside Level of Service Threshold for Conforming Projects

Functional Classification	LOS Standard
Arterial	D (E at key locations)
Collector	D
Local Street	C

Source: City of Riverside 2016

For projects that propose uses or intensities above that contained in the City's General Plan, a significant impact at a study area intersection occurs when the addition of Project-related trips causes either:

- The peak hour LOS to degrade from acceptable (LOS D or better) to unacceptable levels (LOS E or F); or
- Project-related traffic results in an increase to peak hour delay by the values shown in Table 4.11-16.

Table 4.11-16
City of Riverside Level of Service Threshold for Non-conforming Projects

Level of Service	Density Range (pc/mi/ln)[1]
A	By 10.0 seconds or more
B	By 10.0 seconds or more
C	By 8.0 seconds or more
D	By 5.0 seconds or more
E	By 2.0 seconds or more
F	By 1.0 second or more

Source: City of Riverside 2016
Notes:
1 pc/mi/ln = passenger cars per mile per lane

City of Moreno Valley

Based on the City of Moreno Valley Traffic Impact Analysis Guidelines (City of Moreno Valley 2007), a significant impact occurs when the addition of project traffic causes an intersection that operates at an acceptable LOS under Existing Conditions to fall to an unacceptable LOS. The Existing With Project scenario is compared to Existing Conditions to identify significant Project-related impacts according to the following criteria:

- If an intersection operates at an acceptable level of service without the Project (Existing Conditions) and the addition of Project traffic will cause the intersection to operate at an unacceptable level of service, the impact is considered a significant direct impact.
- If an intersection is currently operating at an unacceptable level of service without the Project (Existing Conditions) and the Project contributes 50 more peak hour trips, the impact is considered a significant direct impact.

The Traffic Impact Analysis Guidelines require additional analysis related to truck trips if the Project includes a "truck intensive" land use (City of Moreno Valley 2007). However, the Project does not include any such land uses; therefore, a separate analysis related to truck trips is not provided.

Caltrans

Regarding Caltrans' ramp to arterial intersections and other Caltrans maintained facilities, the Caltrans Traffic Impact Study Guidelines (Caltrans 2002) state the following:

> Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS.

As such, LOS D is also considered to be the limit of acceptable traffic operations during the peak hour at intersections maintained by Caltrans. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE (LOS) should be maintained (Caltrans 2002).

Caltrans does not have an established threshold of significance for the freeway mainline. As such, the same thresholds defined above for arterial intersections have also been applied to the I-215 and SR-60 basic freeway segment and ramp analysis.

4.11.5 Project Features That Will Reduce Impacts

The Project has been designed to facilitate traffic in an efficient manner using the existing roadway network. Access to the Project site will be provided from Day Street, Corporate Centre Place, Valley Springs Parkway, Gateway Drive, and Canyon Park Drive. The majority of vehicle and truck traffic is expected to use Eucalyptus Avenue, which will provide on/off ramp access to I-215. The following improvements will be made as part of the Project to facilitate access and circulation. Preliminary cost calculations associated with each improvement are provided in Appendix L.

Day Street/Driveway 1 (#10): This intersection provides access to Site C; therefore, the following intersection geometrics should be constructed concurrent with development west of Day Street between Gateway Drive and Eucalyptus Avenue:

- Northbound approach: Provide a dedicated left turn lane, in addition to the existing two through lanes.
- Southbound approach: Maintain existing three through lanes.
- Eastbound approach: Install a stop sign control and provide a shared left-/right turn lane.

Day Street/Driveway 2 (#11): This intersection provides access to Site C; therefore, the following intersection geometrics should be constructed concurrent with development west of Day Street between Gateway Drive and Eucalyptus Avenue:

- Northbound approach: Provide a dedicated left turn lane in addition to the existing two through lanes.
- Southbound approach: Maintain existing three through lanes.
- Eastbound approach: Install a stop sign control on the eastbound approach and provide a shared left/right turn lane.

Driveway 3/Corporate Centre Place (#19): This intersection provides access to Site A; therefore, the following intersection geometrics should be constructed concurrent with development southeast of Corporate Center Place and east of Valley Springs Parkway:

- Northbound approach: Install a stop sign control and provide one left turn lane and one right turn lane.
- Eastbound approach: Maintain existing two through lanes.
- Westbound approach: Maintain existing two through lanes.

Valley Springs Parkway/Driveway 4 (#21): This intersection provides access to Site A; therefore, the following intersection geometrics should be constructed concurrent with development southeast of Corporate Center Place and east of Valley Springs Parkway:

- Northbound approach: Maintain existing three through lanes.
- Southbound approach: Maintain existing left turn lane and three through lanes.
- Eastbound approach: Maintain existing shared left/through/right turn lane.
- Westbound approach: Install a stop sign control and provide a shared left/through/right turn lane.

Valley Springs Parkway/Driveway 5 (#23): This intersection provides access to Site C; therefore, the following intersection geometrics should be constructed concurrent with development east of Valley Springs Parkway and south of Gateway Drive:

- Northbound approach: Maintain existing three through lanes.
- Southbound approach: Maintain existing left turn lane and three through lanes.
- Westbound approach: Provide one left turn lane and one right turn lane.
- A traffic signal will be installed per **MM-TRAF-11**.

Driveway 6/Gateway Drive (#24): This intersection provides access to Site C; therefore, the following intersection geometrics should be constructed concurrent with development east of Valley Springs Parkway and south of Gateway Drive:

- Northbound approach: Install a stop sign control and provide a shared left/through/right turn lane.
- Southbound approach: Maintain existing shared left/through/right turn lane.
- Eastbound approach: Maintain existing two through lanes with left turn lane accommodated within the two-way left turn lane median.
- Westbound approach: Maintain existing two through lanes with left turn lane accommodated within the two-way left turn lane median.

Canyon Park Drive – Driveway 7/Gateway Drive (#25): This intersection provides access to Site C; therefore, the following intersection geometrics should be constructed concurrent with development south of this intersection:

- Northbound approach: Provide a dedicated left turn lane, one through lane, and one right turn lane.
- Southbound approach: Modify striping to provide one left turn lane and one through lane, in addition to the existing right turn lane.
- Eastbound approach: Maintain existing left turn lane and two through lanes.
- Westbound approach: Modify striping to provide a dedicated left turn lane, in addition to the existing two through lanes.
- A traffic signal will be installed per **MM-TRAF-12**.

Driveway 8/Gateway Drive (#26): This intersection provides access to Site B; therefore, the following intersection geometrics should be constructed concurrent with development north of Gateway Drive and east of Canyon Park Drive:

- Southbound approach: Install a stop sign control and provide a shared left /right turn lane.
- Eastbound approach: Maintain existing two through lanes with left turn lane accommodated within the two-way left turn lane median.
- Westbound approach: Maintain existing two through lanes.

Driveway 9/Gateway Drive (#27): This intersection provides access to Site B; therefore, the following intersection geometrics should be constructed concurrent with development north of Gateway Drive and east of Canyon Park Drive:

- Northbound approach: Maintain existing shared left/through/right turn lane.
- Southbound approach: Install a stop sign control and provide a shared left/through/right turn lane.
- Eastbound approach: Maintain existing two through lanes with left turn lane accommodated within the two-way left turn lane median.
- Westbound approach: Maintain existing two through lanes with left turn lane accommodated within the two-way left turn lane median.

Canyon Park Drive/Driveway 10 (#29): This intersection provides access to Site B; therefore, the following intersection geometrics should be constructed concurrent with development north of Gateway Drive and east of Canyon Park Drive:

- Northbound approach: Maintain existing two through lanes.
- Southbound approach: Maintain existing two through lanes.
- Westbound approach: Install a stop sign control and provide a shared left/right turn lane.

Canyon Park Drive/Driveway 11 (#30): This intersection provides access to Site B; therefore, the following intersection geometrics should be constructed concurrent with development north of Gateway Drive and east of Canyon Park Drive:

- Northbound approach: Maintain existing two through lanes.
- Southbound approach: Maintain existing two through lanes with left turns accommodated within the two-way left turn median.
- Westbound approach: Install a stop sign control and provide a shared left/right turn lane.

Canyon Park Drive/Driveway 12 (#31): This intersection provides access to Site B; therefore, the following intersection geometrics should be constructed concurrent with development north of Gateway Drive and east of Canyon Park Drive:

- Northbound approach: Maintain existing two through lanes.
- Southbound approach: Maintain existing two through lanes with left turns accommodated within the two-way left turn median.
- Westbound approach: Provide a shared inbound lane.

Driveway 13 / Gateway Drive (#32): This intersection provides access to Site C; therefore, the following intersection geometrics should be constructed concurrent with development south of this intersection:

- Northbound approach: Install a stop sign control and provide a shared left/through/right turn lane.
- Eastbound approach: Maintain existing two through lanes.
- Westbound approach: Maintain existing two through lanes with left turns accommodated within the two-way left turn median.

Valley Springs Parkway / Driveway 14 (#33): This intersection provides emergency access to Site A; therefore, the emergency access driveway should be constructed concurrent with the development east of this intersection.

Driveway 15 / Corporate Center Place (#34): This intersection provides access to Site A; therefore, the following intersection geometrics should be constructed concurrent with development southeast of Corporate Center Place and east of Valley Springs Parkway:

- Eastbound approach: Maintain existing two through lanes.
- Westbound approach: Maintain existing two through lanes with left turns accommodated within the two-way left turn median.

Chapter 5, Circulation, of the Canyon Springs Healthcare Campus (CSHC) Specific Plan (Dudek 2017) includes the following traffic demand management features to encourage multimodal transportation and reduce reliance on automobiles:

- The CSHC operator will implement two ride-sharing rewards programs in coordination with Inland Empire Transit. Both programs will be promoted through informational flyers and at new hire orientation. A TDM coordinator will be available to facilitate the distribution of information and make sure it remains current. The programs are described as follows:
    - 2 Dollars/Day Program: Participants will log their modes of commuting for 3 months and be awarded points for using alternative modes of transportation, such as the Metrolink, bus, bike routes, and carpooling. The program will enable employees to connect for carpools. At the end of the 3-month period, participants will be awarded gift cards based on the points accrued.
    - Ride-Share Plus Program: Participants will be provided with tools for carpooling, bicycling, and other alternative modes of transportation. Participants in this program will usually have completed the 2 Dollars/Day Program and continue to log hours to

accumulate rewards, such as a coupon book. A coupon book offers savings at local businesses as well as the ability to register the coupon book online to access discounts at nationwide merchants.

- Preferential parking for carpool vehicles.
- Bicycle parking and shower facilities for employees.
- Local transportation management and roadway improvements.
- On-site amenities such as cafeterias, restaurants, automated teller machines and other services that will eliminate the need for additional trips.

The Project also includes a bus stop on the northbound side of Valley Springs Parkway south of the intersection with Gateway Drive. The bus stop will be ADA compliant with an 8-foot by 5-foot boarding pad across the area that would otherwise be a landscaped buffer. Amenities will include a bench and a garbage can.

4.11.6 Impacts Analysis

Threshold TRAF-1: Would the project conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

In considering whether the Project will conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, it is necessary to analyze the Project's potential impacts relative to the significance criteria utilized by the Agency that has jurisdiction over the location (intersection, roadway or ramp). This impact analysis was conducted under the following six scenarios, which are described in detail in Section 4.11.3:

1. Existing Conditions (Baseline)
2. Existing With Project Conditions
3. Cumulative Conditions Without Project
4. Cumulative Conditions With Project
5. General Plan Buildout Conditions Without Project
6. General Plan Buildout Conditions With Project

Project Traffic

This section presents the estimated trips generated by the Project, as well as the Project's trip assignment to the roadway network. The Project consists of a hospital with 280 beds, 370,000 square feet of medical office, 234 senior adult-housing attached dwelling units, and an assisted living facility with approximately 267 units (containing up to 290 beds). For the purposes of this analysis, the Project is not phased.

Project Vehicle Trip Generation

Determining trip generation for a specific project is based upon estimating the number of vehicle trips that are expected to be both attracted to and produced by the specific land uses being proposed for a given development.

Table 4.11-17 shows the estimated trip generation of the Project for daily and peak hour trips. The trip generation rates used for this analysis are based upon the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th edition (ITE 2012). For purposes of this analysis, ITE land use code 610 (hospital), 720 (MOB), 252 (senior adult housing-attached), and 254 (assisted living) were used to derive site-specific trip generation estimates. As shown in Table 4.11-17, the Project is anticipated to generate a total of approximately 18,528 trips per day with 1,348 occurring during the AM peak hour and 1,854 during the PM peak hour.

Table 4.11-17
Project Trip Generation

Land Use	ITE Code[1]	Quantity	Unit[2]	Rate/ Trips[3]	AM Peak Hour			PM Peak Hour			Daily
					In	*Out*	*Total*	*In*	*Out*	*Total*	
Hospital	610	280	Bed	Rate	0.95	0.37	1.32	0.47	0.95	1.42	12.94
			Total	Trips	266	104	370	132	266	398	3,623
Medical Office Building	720	370	TSF	Rate	1.89	0.50	2.39	1.00	2.57	3.57	36.13
			Total	Trips	699	185	884	370	951	1,321	13,368
Senior Adult Housing – Attached	252	234	DU	Rate	0.07	0.13	0.20	0.13	0.12	0.25	3.44
			Total	Trips	16	30	46	30	28	58	805
Assisted Living[4]	254	267	Bed	Rate	0.12	0.06	0.18	0.15	0.14	0.29	2.74
			Total	Trips	32	16	48	40	37	77	732
Total Project Trips					**1,013**	**335**	**1,348**	**572**	**1,282**	**1,854**	**18,528**

Source: Appendix L
Notes:
1. Source: Institute of Transportation Engineers (ITE), Trip General Manual, 9th Edition; 2012.
2. Bed = hospital bed or housing bed; TSF = thousand square feet; DU = dwelling units
3. Rates are per unit and trips are total trips for that land use.
4. The project description was corrected after the Traffic Impact Analysis for the Project had been completed to include an additional 23 beds, for a total of 290 beds for the Assisted Living land use. The increase in beds results in an additional 4 AM peak hour trips, 6 PM peak hour trips, and 63 daily trips. Once distributed on the roadway system, the additional trips amount to two or fewer additional vehicles

at study area intersections. The trip generation increase on the study area roadway system was tested, and there was no measurable change in the LOS results. See memorandum attachment included in Appendix L.

Non-vehicle Trips

The potential for Project trips to be reduced by the use of public transit, walking, or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes will reduce the forecasted volumes produced by employees.

Project Trip Distribution

Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where project traffic will distribute. The Project trip distribution was developed based on anticipated travel patterns to and from the Project site for both passenger cars and truck traffic. The trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional freeway system. Appendix L shows the trip distribution pattern by zone.

Vehicles are anticipated to utilize primarily Driveway 5 (driveway off Valley Springs Parkway) or Driveway 7 (driveway off Gateway Drive) to enter/exit the hospital, MOBs, and parking structure site. As such, vehicles oriented northbound and southbound on I-215 are anticipated to utilize Eucalyptus Avenue to Valley Springs Parkway and vehicles oriented eastbound and northbound on SR-60 are anticipated to utilize Day Street to Gateway Drive.

Vehicles are anticipated to utilize primarily Driveway 2 off Day Street to enter/exit the MOB site. Vehicles are anticipated to utilize primarily Driveway 9 off Day Street to enter/exit Site B. Of the vehicles entering/exiting the Site A, 60% are anticipated to utilize Driveway 4 while 40% of vehicles are anticipated to utilize Driveway 3.

Project Trip Assignment

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that will be in place by the time of initial occupancy of the Project. Based on the identified Project trip generation and distribution patterns, Project ADT volumes are shown in Figure 4.11-5. Project weekday AM and PM peak hour volumes are shown in Figures 4.11-6 and 4.11-17 respectively.

Existing With Project Conditions

This section presents the analysis of intersection operations, roadway segment capacity, freeway mainline operations, and traffic signal warrant analyses for the Existing With Project scenario. As described in section 4.11.3, this scenario includes existing traffic volumes plus Project traffic. Figure 4.11-8 shows the ADT volumes for Existing With Project Conditions. Figures 4.11-9 and 4.11-10 show the weekday AM and PM peak hour intersection turning movement volumes, respectively.

Roadway Improvements

The lane configurations and traffic controls assumed to be in place for Existing With Project Conditions are the same as Existing Conditions, with the exception of Project driveways and those facilities assumed to be constructed as part of the Project to provide site access (e.g., intersection and roadway improvements along the Project's frontage and driveways). In other words, no off-site improvements are assumed beyond those that currently exist with the exception of the intersections and roadways that will be improved by the Project for access.

Intersection Operations Analysis

Peak hour intersection operations have been evaluated based on the methodology presented in Section 4.11.3. The intersection analysis results for Existing With Project Conditions are summarized in Table 4.11-18. Section 4.11.4, Thresholds of Significance, discusses the standards for determining significant impacts. Each intersection is evaluated based on the standards for the city or cities that have jurisdiction over the intersection. The City of Riverside has two sets of standards: those for projects that conform with the General Plan and those for projects that propose uses or intensities above that contained in the General Plan. Intersections in the study area under the jurisdiction of the City of Riverside are evaluated based on the latter set of criteria.

Based on a comparison of Existing Conditions to Existing With Project Conditions, the Project is anticipated to cause one intersection, Valley Springs Parkway/Eucalyptus Avenue (#4), to change from an acceptable LOS D to unacceptable LOS F during the PM peak hour. As such, the Project's potential to directly impact the intersection of Valley Springs Parkway/Eucalyptus Avenue is considered significant. Mitigation measure **MM-TRAF-1**, described below in Section 4.11.7, *Mitigation Measures*, shall be incorporated to reduce the peak hour delay and improve LOS to D or better for Existing With Project Conditions. With the implementation of mitigation measure **MM-TRAF-1**, impacts to traffic conditions at the Valley Springs Parkway/Eucalyptus Avenue intersection under the Existing With Project scenario will be **less than significant with mitigation incorporated**.

Table 4.11-18
Existing Conditions Intersection Operations

#	Intersection	Traffic Control[1]	Existing Without Project				Existing With Project			
			Delay (Secs)[2]		Level of Service[2]		Delay (Secs)[2]		Level of Service[2]	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Sycamore Canyon Boulevard / Eastridge Avenue	TS	44.8	30.4	D	C	46.3	30.5	D	C
2	Box Springs Boulevard / Eastridge Avenue	TS	12.2	15.5	B	B	21.6	22.3	C	C
3	I-215 NB and SB Ramps / Eucalyptus Avenue	TS	33.9	29.1	C	C	34.3	35.4	C	D
	• I-215 SB Ramps / Eucalyptus Avenue	CSS	17.1	13.4	C	B	17.6	14.4	C	B
	• I-215 NB Ramps / Eucalyptus Avenue	TS	0.1	0.4	A	A	0.2	0.4	A	A
4	Valley Springs Parkway/ Eucalyptus Avenue									
	• Without Mitigation	TS	16.8	11.4	B	B	51.9	**>80**	D	**F**
	• With Mitigation	TS	-	-	-	-	43.3	22.6	D	C
5	Day Street / SR-60 WB Ramps	TS	11.2	12.0	B	B	17.7	12.2	B	B
6	Day Street / SR-60 EB Ramps	TS	14.8	26.1	B	C	19.0	13.0	B	B
7	Day Street / Canyon Springs Parkway	TS	11.4	26.6	B	C	14.0	31.1	B	C
8	Day Street / Campus Parkway	TS	18.9	28.0	B	C	18.1	26.8	B	C
9	Day Street / Gateway Drive	TS	11.2	12.0	B	B	19.7	36.3	B	D
10	Day Street / Driveway 1	CSS	Does Not Exist				13.6	23.7	B	C
11	Day Street / Driveway 2	CSS	12.1	16.7	B	C	12.3	17.1	B	C
12	Day Street / Eucalyptus Avenue	TS	32.0	29.5	C	C	33.6	31.9	C	C
13	Day Street / Cottonwood Avenue	TS	26.7	24.6	C	C	26.3	24.7	C	C
14	Day Street / Bay Avenue	AWS	10.4	10.5	B	B	11.6	12.0	B	B
15	Day Street / Alessandro Boulevard	TS	15.4	16.9	B	B	15.7	17.9	B	B
16	Memorial Wy. / Towngate Drive	TS	34.0	29.7	C	C	34.4	30.2	C	C
17	Corporate Center Place / Canyon Springs Parkway	TS	36.9	34.2	D	C	40.8	34.3	D	C
18	Corporate Center Place / Campus Parkway	AWS	8.0	9.7	A	A	8.2	10.0	A	A
19	Driveway 3 / Corporate Center Place	CSS	Does Not Exist				9.3	10.0	A	A
20	Valley Springs Parkway / Corporate Center Place	TS	15.9	20.4	B	C	16.2	20.4	B	C
21	Valley Springs Parkway / Driveway 4	CSS	10.5	13.2	B	B	14.3	19.0	B	C
22	Valley Springs Parkway / Gateway Drive	TS	11.4	9.9	B	A	12.0	12.8	B	B
23	Valley Springs Parkway / Driveway 5	TS	Does Not Exist				8.4	12.6	A	B
24	Driveway 6 / Gateway Drive	CSS	10.1	10.9	B	B	15.5	27.7	C	D
25	Canyon Park Drive - Driveway 7 / Gateway Drive	TS	10.7	11.3	B	B	24.0	22.1	C	C
26	Driveway 8 / Gateway Drive	CSS	Does Not Exist				8.5	11.1	A	B
27	Driveway 9 / Gateway Drive	CSS	8.8	9.3	A	A	20.3	17.7	C	C
28	Canyon Park Drive / Campus Parkway	AWS	8.2	9.7	A	A	8.4	10.3	A	B
29	Canyon Park Drive / Driveway 10	CSS	Does Not Exist				8.9	9.1	A	A
30	Canyon Park Drive / Driveway 11	CSS	Does Not Exist				7.5	9.0	A	A
31	Canyon Park Drive / Driveway 12	UNC	Does Not Exist				7.5	7.5	A	A
32	Driveway 13 / Gateway Drive	CSS	Does Not Exist				10.5	12.2	B	B

Table 4.11-18
Existing Conditions Intersection Operations

#	Intersection	Traffic Control[1]	Existing Without Project				Existing With Project			
			Delay (Secs)[2]		Level of Service[2]		Delay (Secs)[2]		Level of Service[2]	
			AM	PM	AM	PM	AM	PM	AM	PM
33	Valley Springs Parkway / Driveway 14	CSY	Does Not Exist				Emergency Access Only			
34	Driveway 15 / Corporate Center Place	UNC	Does Not Exist				7.4	7.6	A	A

Source: Appendix L.
Notes:
Bold = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).
Bold and highlighted = significant impact
1. TS = Traffic Signal; CSS = Cross-street Stop; CSY: Cross-street yield; AWS = All-Way Stop; UNC = uncontrolled.
2. Per the 2010 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. Delay and level of service is calculated using Synchro 8.0 analysis software.

Roadway Segment Capacity Analysis

The Existing With Project Conditions roadway segment capacity analysis is presented in Table 4.11-19. The study area roadway segments are anticipated to continue to operate at acceptable LOS. The roadway segment capacities are approximate figures only, and are used to assist in determining the roadway functional classification (number of through lanes) needed to meet vehicle demand. Review of the peak hour intersection analysis results indicate an acceptable LOS for both study area intersections and roadway segments.

Table 4.11-19
Existing Conditions Roadway Volume/Capacity Analysis

Roadway	Segment Limits	Through Travel Lanes[1]	LOS E Capacity[2]	Existing		Existing With Project	
				ADT[3]	Volume/ Capacity Ratio	ADT[3]	Volume/ Capacity Ratio
Eastridge Avenue-Eucalyptus Avenue	West of Sycamore Canyon Boulevard	5	45,800	8,600	0.19	8,800	0.19
	Between Box Springs Boulevard and I-215	4	36,600	19,400	0.53	20,700	0.57
	Between I-215 and Valley Springs Parkway	5	45,800	30,500	0.67	38,700	0.84
	West of Day Street	4	36,600	17,100	0.47	19,200	0.52
	East of Day Street	5	45,800	13,900	0.30	15,000	0.33
Valley Springs Parkway	North of Eucalyptus Avenue	5	45,800	17,400	0.38	26,300	0.57

Table 4.11-19
Existing Conditions Roadway Volume/Capacity Analysis

Roadway	Segment Limits	Through Travel Lanes[1]	LOS E Capacity[2]	Existing		Existing With Project	
				ADT[3]	*Volume/ Capacity Ratio*	*ADT*[3]	*Volume/ Capacity Ratio*
Day Street	Between SR-60 Eastbound Ramps and Canyon Springs Parkway	6	54,900	39,200	0.71	44,300	0.81
	North of Eucalyptus Avenue	5	45,800	16,800	0.37	19,400	0.42
	South of Eucalyptus Avenue	4	36,400	11,800	0.32	13,200	0.36
	South of Cottonwood Avenue	2	11,500	7,100	0.62	8,200	0.71
Gateway Drive	West of Day Street	4	36,400	5,000	0.14	11,500	0.32

Source: Appendix L.
Notes:
1. Number of through lanes
2. LOS E capacity is provided in the City of Riverside's Traffic Impact Analysis Preparation Guide, Exhibit D – City of Riverside Roadway/Capacity.
3. Average daily traffic (ADT) expressed in vehicles per day

Traffic Signal Warrants Analysis

For the Existing With Project scenario, the following unsignalized Project driveway locations are anticipated to meet traffic signal warrants: Valley Springs Parkway/Driveway 5; and Canyon Park Drive – Driveway 7/Gateway Drive.

Basic Freeway Segment Analysis

Mainline directional volumes for the weekday AM and PM peak hours are shown in Figures 4.11-9 and 4.11-10, respectively for Existing With Project Conditions. Freeway operations analysis worksheets are provided in the Appendix L. As shown in Table 4.11-20, the freeway segments are anticipated to operate at an acceptable LOS during the peak hours, with the addition of Project traffic, with the exception of the I-215 southbound segment, south of Eucalyptus Avenue, which will degrade from LOS E to LOS F during the PM peak hour. As such, the Project's impact is considered significant.

While there are planned improvements for I-215, the most recent Caltrans Transportation Concept Report for I-215 forecasts that LOS will deteriorate to F even with these planned improvements (Caltrans 2012). Other potential mitigation measures for freeway segments include additional capacity enhancements, operational improvements (ramp metering or express lanes), and measures that reduce the amount of traffic or encourage mode shifts such as TDM strategies and improvements to regional transit. The Project will implement TDM measures as described in Section 4.11.5. However, the complete mitigation of this impact is considered beyond the scope of the Project because of the inability of the City to approve freeway mainline

operational and capacity improvements. Therefore, the Project's impact on the freeway segment will be **significant and unavoidable**, and a Statement of Overriding Considerations will be required should the City choose to approve the Project.

Freeway Merge/Diverge Analysis

Ramp merge and diverge operations were also evaluated for Existing With Project Conditions, and the results of this analysis are shown in Table 4.11-21. Freeway operations analysis worksheets are provided in Appendix L. As shown in Table 4.11-21, the I-215 southbound on-ramp at Eucalyptus Avenue will continue to operate at an unacceptable LOS under Existing With Project Conditions. Other than this ramp, there are no new ramp locations anticipated to exceed acceptable LOS. Even though the LOS is below the Caltrans standard, because the existing LOS is maintained and does not deteriorate, the impact is considered **less than significant**. No mitigation is required.

Cumulative Conditions

This section discusses Cumulative without and With Project Conditions and the resulting intersection operations, roadway segment operations, freeway operations, and traffic signal warrant analyses.

Roadway Improvements

The lane configurations and traffic controls assumed to be in place for Cumulative Without Project Conditions are consistent with those shown in Figure 4.11-1. Cumulative With Project Conditions includes new driveways and facilities to be constructed by the Project to provide site access, which are assumed to be in place for Cumulative With Project Conditions (e.g., intersection and roadway improvements along the Project's frontage and driveways).

Vehicle Volumes

The Cumulative Without Project scenario includes ambient growth as well as approved and pending projects as described below. Weekday ADT volumes for Cumulative Without Project are shown in Figure 4.11-11. Figures 4.11-12 and 4.11-13 show the weekday AM and PM peak hour intersection turning movements, respectively.

The Cumulative With Project scenario includes ambient growth, approved and pending projects as well as Project trips. Weekday ADT volumes for Cumulative With Project are shown in Figure 4.11-14. Figures 4.11-15 and 4.11-16 show the weekday AM and PM peak hour intersection turning movements, respectively.

Table 4.11-20
Existing Conditions Basic Freeway Segment Analysis

Freeway	Direction	Mainline Segment	Lanes[1]	Existing						Existing With Project					
				Volume		Density[2]		LOS[3]		Volume		Density[2]		LOS[3]	
				AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
I-215 Freeway	*Northbound*	South of Eucalyptus Avenue	3	4,155	4,420	23.8	25.8	C	C	4,367	4,539	25.4	26.7	C	D
		Between Ramps	3	3,690	3,750	20.7	21.1	C	C	3,690	3,750	20.7	21.1	C	C
		North of Eucalyptus Avenue	3	4,064	4,239	23.2	24.4	C	C	4,118	4,449	23.6	26.0	C	C
	Southbound	North of Eucalyptus Avenue	5	5,047	6,287	16.8	21.2	B	C	5,213	6,379	17.4	21.6	B	C
		Between Ramps	3	4,693	5,354	27.9	34.2	D	D	4,693	5,354	27.5	34.2	D	D
		South of Eucalyptus Avenue	3	5,123	6,087	31.8	43.8	D	**E**	5,193	6,356	32.6	48.4	D	**F**
SR-60 Freeway	*Westbound*	East of Day Street	4	3,428	3,623	14.0	14.8	B	B	3,590	3,715	14.7	15.2	B	B
		Between Ramps	3	2,835	3,011	15.5	16.4	B	B	2,835	3,011	15.5	16.4	B	B
		West of Day Street	3	3,146	3,517	17.2	19.3	B	C	3,179	3,640	17.4	20.0	B	C
	Eastbound	West of Day Street	6	3,358	5,382	9.2	14.7	A	B	3,455	5,438	9.4	14.8	A	B
		Between Ramps	4	2,895	4,479	11.9	18.4	B	C	2,895	4,479	11.9	18.4	B	C
		East of Day Street	5	3,373	5,340	11.1	17.5	B	B	3,427	5,545	11.2	18.2	B	C

Source: Appendix L.
Notes:
BOLD = Unacceptable Level of Service (LOS E or LOS F)
Bold and highlighted = significant impact
1. Number of lanes are in the specified direction and is based on existing conditions.
2. Density is measured by passenger cars per mile per lane (pc/mi/ln).
3. Level of service determined using HCS 2010: Basic Freeway Segments software, Version 6.65.

Table 4.11-21
Existing Conditions Freeway Ramp Junction Merge/Diverge Analysis

Freeway	Direction	Ramp or Segment	Junction Type	Lanes on Freeway	Lanes on Ramp	Existing						Existing With Project					
						Volume		Density[1]		LOS[2]		Volume		Density[1]		LOS[2]	
						AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
I-215	*Northbound*	Off-Ramp at Eucalyptus Avenue	Diverge	3	1	465	670	30.0	31.7	D	D	677	789	31.5	32.9	D	D
		On-Ramp at Eucalyptus Avenue	Merge	3	1	374	489	25.8	27.0	C	C	428	699	26.2	29.5	C	D
	Southbound	Off-Ramp at Eucalyptus Avenue	Diverge	5	2	354	933	9.3	12.2	A	B	520	1,025	9.8	13.1	A	B
		On-Ramp at Eucalyptus Avenue	Merge	3	1	430	733	30.6	36.6	D	**E**	500	1,002	31.2	40.0	D	**E**
SR-60	*Westbound*	Off-Ramp at Day Street	Diverge	4	1	593	612	13.1	14.1	B	B	755	704	14.7	15.5	B	B
		On-Ramp at Day Street	Merge	3	1	311	506	17.6	20.1	B	C	344	629	17.9	21.8	B	C
	Eastbound	Off-Ramp at Day Street	Diverge	6	2	463	903	13.4	18.2	B	B	560	959	13.7	19.1	B	B
		On-Ramp at Day Street	Merge	4	1	478	861	13.4	22.2	B	C	532	1,066	13.8	24.5	B	C

Source: Appendix L.
Notes:
Bold = Unacceptable Level of Service (LOS E or LOS F)
Bold and highlighted = significant impact
1. Density calculated based on the Highway Capacity Manual (HCM) analysis; (pc/mi/ln) = passenger car per mile per lane
2. Level of service determined using HCS 2010: Ramps and Ramp Junction software, Version 6.60

Ambient Growth

Ambient growth was added to traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth is added to the transportation network on top of traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies.

Ambient growth is usually calculated based on demographic growth forecasts prepared by regional agencies. In this case, the SCAG RTPs were used as a reference point for growth. For this analysis Cumulative Conditions includes ambient growth at a rate of 2% per year. The total ambient growth is 4.04% (compounded growth of 2% per year over two years or $1.02^{2 \text{ years}}$).

The adopted SCAG 2012 RTP (SCAG 2012) growth forecasts for the City of Riverside identifies projected growth in population of 295,500 in 2008 to 382,700 in 2035, or a 29.51% increase over the 27-year period. The change in population equates to roughly a 1% growth rate compounded annually. The recently released SCAG 2016 RTP/SCS (SCAG 2016) growth forecasts for the City of Riverside identifies projected growth in population of 310,700 in 2012 to 386,600 in 2040, or a 24.43% increase over the 28-year period.

Therefore, the use of an annual growth rate of 2% conservatively approximates the anticipated regional growth in traffic volumes within the study area, especially when considered along with the addition of Project-related traffic and traffic generated by other known development projects. As such, the growth in vehicle volumes assumed in this analysis will tend to overstate, as opposed to understate, the potential impacts to traffic.

Approved and Pending Projects

The CEQA Guidelines and City's Traffic Impact Analysis Guidelines require that other reasonably foreseeable development projects which are either approved or being processed concurrently in the study area also be included as part of a cumulative analysis. A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City. Appendix L includes a comprehensive cumulative development location map. A summary of cumulative development projects and the resulting trip generation is shown in Table 4.11-22.

Where applicable, the trips generated by individual development projects were manually added to the cumulative volumes to ensure that traffic generated by those developments were captured as part of the background traffic. Cumulative development ADT as well as AM and PM peak hour volumes are provided in Appendix L.

Table 4.11-22
Cumulative Development Trip Generation

#	Project/Location	Land Use[1]	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	*Out*	*Total*	*In*	*Out*	*Total*	
	City of Riverside Cumulative Projects									
1	6287 Day Street (P10-0090; P10-0091)	Gasoline/Service Station	2 VFP	12	12	24	14	14	28	337
2	2570 Canyon Springs Parkway (P08-0274; P08-0275)	Drive-in Bank	2.746 TSF	19	14	33	33	33	66	407
3	6211 Valley Springs Parkway3 (Steak N' Shake Restaurant; P14-0536) • Internal Capture (10%) • Pass-by Trips (25%)	Fast Food w/ Drive Thru	3.750 DU	87 (9) (22)	83 (8) (21)	170 (17) (43)	64 (6) (16)	59 (6) (15)	123 (12) (31)	1,860 (186) (465)
			Subtotal[3]	*56*	*54*	*110*	*42*	*38*	*80*	*1,209*
4	5940-5980 Sycamore Canyon Boulevard (P13-0553; P13-0554; P13-0583; P14-0065)	Apartment	275 DU	28	113	141	110	61	171	1,829
5	SE corner of Sycamore Canyon Boulevard and Box Springs Rd. (P13-0607 P13-06008; P0609; P13-0854)	Gen. Lt. Industrial	171.616 TSF	139	19	158	21	146	167	1,196
6	6465 Sycamore Canyon Boulevard	Health/Fitness Club	4 TSF	3	3	6	8	6	14	132
7	2325 Cottonwood Avenue (P12-0507; P12-0508; P12-0509; P12-0510) Warehouse Vehicle Mix (ITE LU 152)4 • Passenger Cars: • 2-Axle Trucks (PCE = 1.5) • 3-Axle Trucks (PCE = 2) • 4-Axle Trucks (PCE = 3) • Net Truck Trips PCE's	High-Cube Warehouse	235.741 TSF	 13 2 2 9 13	 6 1 1 4 6	 19 3 3 13 19	 6 1 1 5 7	 13 2 2 12 16	 19 3 3 17 23	 245 50 53 273 376
			Subtotal	*26*	*12*	*38*	*13*	*29*	*42*	*621*
8	Alessandro Boulevard (APN 263-091-008, 263-100-019, 263-100-005; P14-0841 to 0848)	Commercial	101.580 TSF	98	60	158	291	315	606	6,861

Table 4.11-22
Cumulative Development Trip Generation

#	Project/Location	Land Use[1]	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	*Out*	*Total*	*In*	*Out*	*Total*	
City of Riverside Cumulative Projects										
9	2100 Alessandro Boulevard	Junior/Community College	11.505 TSF	25	9	34	17	12	29	316
10	NW cor Alessandro Blvd and San Gorgonio Drive (TM34707; Alessandro Business Park)	Manufacturing	662.018 TSF	377	106	483	172	311	483	2,529
11	Alessandro and Gorgonio	Fast Food w/ Drive Thru	4.050 TSF	94	90	184	69	63	132	2,009
12	360 Alessandro Boulevard (P12-0419; P12-0557; P12-0558; P12-0559)	Drive-in Bank	3.858 TSF	27	20	47	47	47	94	572
13	381 Alessandro Boulevard (P07-1181; P07-0593)	Automobile Parts Sales	1.5 TSF	2	2	4	4	5	9	93
14	14601 Dauchy Avenue TM36370 (P12-0601; P12-0697; P12-0698)	SFDR	10 DU	2	6	8	6	4	10	95
15	TM32180 (P07-1073)	SFDR	9 DU	2	5	7	6	3	9	86
16	18875 Moss Road	SFDR	8 DU	2	4	6	5	3	8	76
17	South of Clarke Street, west of Crystal View Terrace (PM34583; P09-0141; P09-0173)	SFDR	3 DU	1	2	3	2	1	3	29
18	18580 Van Buren Boulevard (P08-0402; P13-0822)	Automobile Care Center	8.142 TSF	12	6	18	12	13	25	n/a
19	N. of Van Buren Boulevard; W. of Wood Street P10-0808; P10-0708)	Fast Food w/ Drive Thru	2.361 TSF	55	53	108	40	37	77	1,171
20	19985 Van Buren Boulevard (P10-0118; Gless Ranch)	Commercial	425.447 TSF	234	145	379	757	821	1,578	17,405
City of Riverside Subtotal				*1,214*	*735*	*1,949*	*1,669*	*1,962*	*3,631*	*36,973*

Table 4.11-22
Cumulative Development Trip Generation

#	Project/Location	Land Use[1]	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	*Out*	*Total*	*In*	*Out*	*Total*	
	County of Riverside Cumulative Projects									
21	PP 22925	General Office	258.102 TSF	359	49	408	62	305	367	2,700
	(Amstar/Kaliber Development)	Building	42.222 TSF	34	5	39	5	36	41	294
		Gen. Lt. Industrial	10 TSF	24	15	39	62	67	129	1,520
	Warehouse Vehicle Mix (ITE LU 150)5	Commercial	409.312 TSF							
	• Passenger Cars:	Warehousing		77	20	97	26	78	104	1,160
	• 2-Axle Trucks (PCE = 1.5)			5	1	6	2	5	7	76
	• 3-Axle Trucks (PCE = 2)			9	2	11	3	9	12	135
	• 4-Axle Trucks (PCE = 3)			36	9	45	12	36	48	539
			Passenger Car Total	**494**	**89**	**583**	**155**	**486**	**641**	**5,674**
			Truck Total (PCE)	**50**	**12**	**62**	**17**	**50**	**67**	**750**
			Subtotal	*544*	*101*	*645*	*172*	*536*	*708*	*6,424*
22	Meridian Business Park North	Industrial Park	5,985.0 TSF	4,010	898	4,908	1,077	4,010	5,087	40,878
23	Freeway Business Center									
	Southwest corner of Old 215 Frontage Rd. / Alessandro Boulevard									
	Warehouse Vehicle Mix (ITE LU 152)4	High-Cube	709.083 TSF							
	• Passenger Cars:	Warehouse		39	18	57	18	39	57	737
	• 2-Axle Trucks (PCE = 1.5)			5	2	7	3	6	9	150
	• 3-Axle Trucks (PCE = 2)			5	2	7	3	7	10	160
	• 4-Axle Trucks (PCE = 3)			27	12	39	16	35	51	821
	• Net Truck Trips PCE's			37	16	53	22	48	70	1,131
			Subtotal	*76*	*34*	*110*	*40*	*87*	*127*	*1,868*

Table 4.11-22
Cumulative Development Trip Generation

#	Project/Location	Land Use[1]	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	*Out*	*Total*	*In*	*Out*	*Total*	
	County of Riverside Cumulative Projects									
24	Airport Master Plan6	Gen. Lt. Industrial	559.000 TSF							
	• Passenger Cars:			364	49	413	54	382	436	3,129
	• Net Truck Trips PCE's			212	29	241	31	223	254	1,824
			Subtotal	*576*	*78*	*654*	*85*	*605*	*690*	*4,953*
			County of Riverside Subtotal	*5,206*	*1,111*	*6,317*	*1,374*	*5,238*	*6,612*	*54,123*
	City of Moreno Valley Cumulative Projects									
25	Edgemont Street, South of Eucalyptus Avenue	Apartment	112 DU	11	46	57	45	25	70	745
26	Moreno Valley/March Field Metrolink Station3,4	Commuter Rail Station	1 Station	170	42	212	33	62	95	1,140
27	PA 08-0047-0052 (Komar Cactus Plaza)5	Hotel	110 RM	45	31	76	47	41	88	1,577
	• Internal Capture (15%)	Fast Food w/ Drive Thru	8.000 TSF	185	178	363	136	125	261	3,969
	• Pass-by Trips (Commercial Only 25%)	Commercial	42.400 TSF	57	35	92	162	176	338	3,888
				(43)	(37)	(80)	(52)	(51)	(103)	(1,415)
				(12)	(11)	(23)	(43)	(42)	(85)	(972)
			Subtotal	*232*	*196*	*428*	*250*	*249*	*499*	*7,047*
28	373K Industrial Facility	High-Cube Warehouse	373.030 TSF							
	Warehouse Vehicle Mix (ITE LU 152)8									
	• Passenger Cars:			21	9	30	9	21	30	388
	• 2-Axle Trucks (PCE = 1.5)			3	1	4	1	3	4	79
	• 3-Axle Trucks (PCE = 2)			3	1	4	1	4	5	84
	• 4-Axle Trucks (PCE = 3)			14	6	20	8	19	27	432
	• Net Truck Trips PCE's			20	8	28	10	26	36	595
			Subtotal	*41*	*17*	*58*	*19*	*47*	*66*	*983*

Table 4.11-22
Cumulative Development Trip Generation

#	Project/Location	Land Use[1]	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	*Out*	*Total*	*In*	*Out*	*Total*	
29	PA 08-0072 (Overton Moore Properties) Warehouse Vehicle Mix (ITE LU 152)4	High-Cube Warehouse	520.000 TSF							
	• Passenger Cars:			29	13	42	13	29	42	541
	• 2-Axle Trucks (PCE = 1.5)			4	2	6	2	5	7	110
	• 3-Axle Trucks (PCE = 2)			4	2	6	2	5	7	118
	• 4-Axle Trucks (PCE = 3)			20	9	29	11	26	37	602
	• Net Truck Trips PCE's			28	13	41	15	36	51	830
			Subtotal	*57*	*26*	*83*	*28*	*65*	*93*	*1,371*
30	TR 32515	SFDR	161 DU	31	90	121	101	60	161	1,533
31	Harbor Freight Expansion Warehouse Vehicle Mix (ITE LU 152)4	High-Cube Warehouse	1,279.910 TSF							
	• Passenger Cars:			70	32	102	32	70	102	1,331
	• 2-Axle Trucks (PCE = 1.5)			9	4	13	5	12	17	270
	• 3-Axle Trucks (PCE = 2)			9	4	13	5	13	18	289
	• 4-Axle Trucks (PCE = 3)			49	22	71	28	64	92	1,482
	• Net Truck Trips PCE's			67	30	97	38	89	127	2,041
			Subtotal	*137*	*62*	*199*	*70*	*159*	*229*	*3,372*
32	PA 09-0031	Gasoline/Service Station	12 VFP	74	72	146	83	83	166	2,023
33	Centerpointe Business Park	Gen. Lt. Industrial	356 TSF	288	39	327	43	303	346	2,481
34	PA 04-0063 (Centerpointe Buildings 8 and 9)	Gen. Lt. Industrial	361.384 TSF	293	40	333	43	307	350	2,519
35	PA 08-0093 (Centerpointe Business Park II)	Gen. Lt. Industrial	99.988 TSF	81	11	92	12	85	97	697

Table 4.11-22
Cumulative Development Trip Generation

#	Project/Location	Land Use[1]	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	*Out*	*Total*	*In*	*Out*	*Total*	
36	March Lifecare Campus Specific Plan6	Medical-Dental Office	190 TSF	359	95	454	190	488	678	6,865
		Commercial	210 TSF	151	92	243	473	512	985	11,000
		R & D	200 TSF	202	42	244	32	182	214	1,622
		Hospital	50 Beds	48	19	67	24	48	72	647
		Assisted Living	660 Beds	79	40	119	99	92	191	1,808
	• Internal Capture (15%)			(126)	(43)	(169)	(123)	(198)	(321)	(3,291)
	• Pass-by Trips (Commercial Only 25%)			(31)	(30)	(61)	(123)	(123)	(246)	(2,750)
			Subtotal	*682*	*215*	*897*	*572*	*1,001*	*1,573*	*15,901*
37	TR 33771 / Creative Design Associates	SFDR	12 DU	2	7	9	8	4	12	114
38	TR 35663 / Kha	SFDR	12 DU	2	7	9	8	4	12	114
39	TR 31814 / Moreno Valley Investors	SFDR	60 DU	11	34	45	38	22	60	571
40	TM 34748	SFDR	135 DU	26	76	102	85	50	135	1,285
41	Moreno Valley Industrial Park (PA 07-0035; PA 07-0039) Warehouse Vehicle Mix (ITE LU 152)4	Gen. Lt. Industrial High-Cube Warehouse	204.66 TSF 409.92 TSF	166	23	189	25	174	199	1,426
	• Passenger Cars:			23	10	33	10	23	33	426
	• 2-Axle Trucks (PCE = 1.5)			3	1	4	2	4	6	86
	• 3-Axle Trucks (PCE = 2)			3	1	4	2	4	6	93
	• 4-Axle Trucks (PCE = 3)			16	7	23	9	20	29	475
			Passenger Car Total	**189**	**33**	**222**	**35**	**197**	**232**	**1,852**
			Truck Total (PCE)	**22**	**9**	**31**	**13**	**28**	**41**	**654**
			Subtotal	*211*	*42*	*253*	*48*	*225*	*273*	*2,506*

Table 4.11-22
Cumulative Development Trip Generation

#	Project/Location	Land Use[1]	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	*Out*	*Total*	*In*	*Out*	*Total*	
42	March Business Center	Gen. Lt. Industrial	16.732 TSF	14	2	16	2	14	16	117
	Warehouse Vehicle Mix (ITE LU 150)5	Warehousing	87.429 TSF							
	• Passenger Cars:			17	4	21	6	17	23	248
	• 2-Axle Trucks (PCE = 1.5)			1	0	1	0	1	1	16
	• 3-Axle Trucks (PCE = 2)			2	1	3	1	2	3	29
	• 4-Axle Trucks (PCE = 3)			8	2	10	3	8	11	115
	Warehouse Vehicle Mix (ITE LU 152)4	High-Cube	1,380.246 TSF							
	• Passenger Cars:	Warehouse		80	30	110	37	73	110	1,435
	• 2-Axle Trucks (PCE = 1.5)			10	4	14	6	12	18	291
	• 3-Axle Trucks (PCE = 2)			11	4	15	7	12	19	312
	• 4-Axle Trucks (PCE = 3)			55	21	76	33	66	99	1,598
			Passenger Car Total	**111**	**36**	**147**	**45**	**104**	**149**	**1,800**
			Truck Total (PCE)	**87**	**32**	**119**	**50**	**101**	**151**	**2,361**
			Subtotal	*198*	*68*	*266*	*95*	*205*	*300*	*4,161*
43	PA 07-0079 (Indian Business Park)	High-Cube	1,560.046 TSF							
	Warehouse Vehicle Mix (ITE LU 152)4	Warehouse								
	• Passenger Cars:			86	39	125	39	86	125	1,622
	• 2-Axle Trucks (PCE = 1.5)			11	5	16	6	14	20	329
	• 3-Axle Trucks (PCE = 2)			11	5	16	6	16	22	353
	• 4-Axle Trucks (PCE = 3)			59	27	86	34	78	112	1,807
	• Net Truck Trips PCE's			81	37	118	46	108	154	2,489
			Subtotal	*167*	*76*	*243*	*85*	*194*	*279*	*4,111*
44	TM 33810	SFDR	16 DU	3	9	12	10	6	16	152
45	TM 34151	SFDR	37 DU	7	21	28	23	14	37	352
46	Legacy Park / TR36760	SFDR	186 DU	35	104	139	117	69	186	1,771

Table 4.11-22
Cumulative Development Trip Generation

#	Project/Location	Land Use[1]	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	*Out*	*Total*	*In*	*Out*	*Total*	
47	Moreno Valley Walmart9	Free-Standing Discount Superstore"	189.520 TSF	197	154	351	404	421	825	9,618
		Gas/Service Station w/Food Mart and Car Wash	16 VFP	97	93	190	113	109	222	2,445
	• Internal Capture (10%)9			(30)	(24)	(54)	(51)	(53)	(104)	(1,207)
	• Pass-by (62% AM; 56% PM/Daily)9			(52)	(52)	(104)	(55)	(55)	(110)	(1,232)
			Subtotal	*212*	*171*	*383*	*411*	*422*	*833*	*9,624*
48	TM 34988	Condo/Townhouse	251 DU	18	93	111	88	43	131	1,458
49	TM 33417	Condo/Townhouse	10 DU	1	4	5	4	2	6	58
50	TM 33607	Condo/Townhouse	54 DU	4	20	24	19	9	28	314
			City of Moreno Valley Total	*2,994*	*1,588*	*4,582*	*2,338*	*3,715*	*6,053*	*66,403*
			Cumulative Development Grand Total	**9,414**	**3,434**	**12,848**	**5,381**	**10,915**	**16,296**	**157,499**

Source: Appendix L

Notes:

1. SFDR = Single Family Detached Residential; R & D = Research and Development
2. DU = Dwelling Units; TSF = Thousand Square Feet; VFP = Vehicle Fueling Positions; RM = Rooms
3. Source: Steak N' Shake Restaurant Approved Traffic Impact Study Scope, Kunzman Associates, Inc., August 4, 2014.
4. Vehicle Mix (ITE LU 152) Source: Total truck percentage source from ITE Trip Generation manual. Truck mix (by axle type) source from SCAQMD. PCE rates are per SANBAG
5. Vehicle Mix (ITE LU 150) Source: City of Fontana Truck Trip Generation Study for LU 150 (Heavy Warehouse), August 2003. PCE rates are per SANBAG
6. Source: Perris Valley Line DEIR, Kleinfelder/STV, July 2011.
7. Source: Cactus Avenue and Commerce Center Drive Commercial Center TIA, Urban Crossroads, Inc., December 9, 2008 (Revised).
8. Source: March Lifecare Campus Specific Plan Traffic Impact Analysis, Mountain Pacific, Inc., May 2009 (Revised).
9. Source: Moreno Valley Walmart Traffic Impact Analysis, Urban Crossroads, Inc., February 2014 (Revised)

Intersection Operations

LOS calculations were conducted for the study intersections to evaluate their operations under Cumulative without and Cumulative With Project Conditions. The results are presented in Table 4.11-23.

As shown in Table 4.11-23, in Cumulative Without Project Conditions the following study area intersections are anticipated to operate at an unacceptable LOS:

- I-215 ramps / Eastridge Avenue-Eucalyptus Avenue; I-215 southbound ramps/Eucalyptus Avenue (LOS F – AM peak hour)
- Valley Springs Parkway / Eucalyptus Avenue (LOS E – AM and PM peak hours)
- Day Street / Cottonwood Avenue (LOS E – PM peak hour)
- Day Street / Bay Avenue (LOS F – AM and PM peak hours)
- Day Street / Alessandro Boulevard (LOS E – AM peak hour)
- Memorial Way / Towngate Drive (LOS E – PM peak hour)

For Cumulative With Project conditions, Table 4.11-23 shows that the addition of Project trips will result in significant impacts at the following locations:

- I-215 SB Ramps / Eucalyptus Avenue (LOS F and E – AM and PM peak hour, respectively)
- Valley Springs Parkway / Eucalyptus Avenue (LOS F – AM and PM peak hours)
- Day Street / Cottonwood Avenue (LOS E – PM peak hour)
- Day Street / Bay Avenue (LOS F – AM and PM peak hours)
- Day Street / Alessandro Boulevard (LOS E – AM and PM peak hours)
- Memorial Way / Towngate Drive (LOS E – PM peak hour)

Section 4.11.4 discusses the standards for determining significant impacts. Each intersection is evaluated based on the standards for the city or cities that have jurisdiction over the intersection. The City of Riverside has two sets of standards: those for projects that conform with the General Plan and those for projects that propose uses or intensities above that contained in the General Plan. Intersections in the study area within the jurisdiction of the City of Riverside are evaluated based on the latter set of criteria.

In addition to implementing mitigation measure **MM-TRAF-1**, the incorporation of mitigation measures **MM-TRAF-2** through **MM-TRAF-7** will reduce off-site impacts associated with the development of the Project to less than significant levels for Cumulative With Project

Conditions. Impacts will be **less than significant with mitigation incorporated**. Table 4.11-23 also shows the resulting LOS and delay with these mitigations. The intersection operations analysis worksheets are provided in Appendix L.

Table 4.11-23
Cumulative Conditions Intersection Operations

ID	Intersection	Traffic Control[1]	Cumulative				Cumulative With Project			
			Delay[2] (secs.)		Level of Service		Delay[2] (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Sycamore Canyon Boulevard / Eastridge Avenue	TS	45.0	33.6	D	C	45.0	33.6	D	C
2	Box Springs Boulevard / Eastridge Avenue	TS	36.7	37.9	D	D	39.8	42.1	D	D
3	I-215 NB and SB Ramps / Eucalyptus Avenue	TS	34.2	33.1	C	C	36.2	46.0	D	D
	• I-215 SB Ramps / Eucalyptus Avenue									
	○ Without Mitigation	CSS	**>80**	30.9	**F**	D	**>80**	**37.2**	**F**	**E**
	○ With Mitigation	TS	13.9	14.5	B	B	14.2	15.3	B	B
	• I-215 NB Ramps / Eucalyptus Avenue	TS	0.3	1.0	A	A	0.3	1.2	A	A
4	Valley Springs Parkway / Eucalyptus Avenue									
	• Without Mitigation	TS	**68.6**	**76.1**	**E**	**E**	**>100**	**>100**	**F**	**F**
	• With Mitigation	TS	37.9	18.0	D	B	51.8	47.7	D	D
5	Day Street / SR-60 WB Ramps	TS	16.4	11.6	B	B	20.1	12.7	C	B
6	Day Street / SR-60 EB Ramps	TS	19.4	15.8	B	B	19.8	16.0	B	B
7	Day Street / Canyon Springs Parkway	TS	19.7	35.4	B	D	19.9	38.5	B	D
8	Day Street / Campus Parkway	TS	17.7	27.0	B	C	18.3	27.8	B	C
9	Day Street / Gateway Drive	TS	18.2	29.0	B	C	15.4	34.9	B	C
10	Day Street / Driveway 1	CSS	Does Not Exist				13.6	19.8	B	C
11	Day Street / Driveway 2	CSS	13.5	19.5	B	C	11.5	15.0	B	B
12	Day Street / Eucalyptus Avenue	TS	38.6	51.5	D	D	41.9	54.5	D	D
13	Day Street / Cottonwood Avenue									
	• Without Mitigation	TS	42.3	**58.5**	D	**E**	47.3	**63.8**	D	**E**
	• With Mitigation	TS	36.0	44.2	D	D	38.6	48.4	D	D
14	Day Street / Bay Avenue									
	• Without Mitigation	AWS	**53.7**	**54.1**	**F**	**F**	**54.0**	**54.3**	**F**	**F**
	• With Mitigation	AWS	19.6	21.3	C	C	23.1	26.1	C	D
15	Day Street / Alessandro Boulevard									
	• Without Mitigation	TS	**56.3**	53.3	**E**	D	**57.9**	**60.4**	**E**	**E**
	• With Mitigation	TS	46.5	47.8	D	D	47.5	53.7	D	D
16	Memorial Way / Towngate Drive									
	• Without Mitigation	TS	54.1	**61.4**	D	**E**	**60.9**	**68.7**	**E**	**E**
	• With Mitigation	TS	42.4	48.4	D	D	45.1	52.2	D	D
17	Corporate Centre Place / Canyon Springs Parkway	TS	40.5	35.8	D	D	40.4	35.8	D	D
18	Corporate Centre Place / Campus Parkway	AWS	8.1	9.9	A	A	8.3	10.2	A	B

Table 4.11-23
Cumulative Conditions Intersection Operations

ID	Intersection	Traffic Control[1]	Cumulative				Cumulative With Project			
			Delay[2] (secs.)		*Level of Service*		*Delay[2] (secs.)*		*Level of Service*	
			AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
19	Driveway 3 / Corporate Centre Place	CSS	Does Not Exist				9.4	10.1	A	B
20	Valley Springs Parkway / Corporate Centre Place	TS	16.1	18.4	B	B	17.7	26.7	B	C
21	Valley Springs Parkway / Driveway 4	CSS	11.7	15.0	B	B	17.8	25.4	C	D
22	Valley Springs Parkway / Gateway Drive	TS	17.3	8.9	B	A	18.1	22.8	B	C
23	Valley Springs Parkway / Driveway 5	TS	Does Not Exist				7.5	16.4	A	B
24	Driveway 6 / Gateway Drive	CSS	10.2	11.1	B	B	15.7	29.3	C	D
25	Canyon Park Drive – Driveway 7 / Gateway Drive	CSS	10.8	11.5	B	B	24.1	22.0	C	C
26	Driveway 8 / Gateway Drive	CSS	Does Not Exist				8.5	11.2	A	B
27	Driveway 9 / Gateway Drive	CSS	8.9	9.4	A	A	20.9	18.1	C	C
28	Canyon Park Drive / Campus Parkway	AWS	8.2	10.0	A	A	8.6	10.6	A	B
29	Canyon Park Drive / Driveway	CSS	Does Not Exist				9.0	9.1	A	A
30	Canyon Park Drive / Driveway 11	CSS	Does Not Exist				8.9	9.0	A	A
31	Canyon Park Drive / Driveway 12	UNC	Does Not Exist				7.5	7.5	A	A
32	Driveway 13 / Gateway Drive	CSS	Does Not Exist				10.6	12.3	B	B
33	Valley Springs Parkway / Driveway 14	CSY	Does Not Exist				Emergency Access Only			
34	Driveway 15 / Corporate Center Place	UNC	Does Not Exist				7.6	7.6	A	A

Source: Appendix L.
Notes:
Bold= LOS does not meet the applicable jurisdictional requirements (LOS E or LOS F)
Bold and highlighted = Significant impact
1. TS = Traffic Signal; CSS = Cross-street Stop; CSY: Cross-street yield; AWS = All-Way Stop; UNC = uncontrolled.
2. Per the 2010 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. Delay and level of service is calculated using Synchro 8.0 analysis software.

Roadway Segment Capacity Analysis

As shown in Table 4.11-24, the following study area roadway segments are anticipated to exceed the daily segment LOS thresholds in Cumulative Without Project Conditions:

- Eastridge Avenue – Eucalyptus Avenue, between I-215 and Valley Springs Parkway
- Day Street, south of Cottonwood Avenue.

Table 4.11-24 shows that the addition of Project trips will not cause any additional roadway segments to exceed the daily segment LOS thresholds. The roadway segment capacities are approximate figures only, and are used to assist in determining the roadway functional classification (number of through lanes) needed to meet vehicle demand. For Cumulative without

and With Project Conditions, roadway segments that are estimated to exceed the daily volume thresholds are further reviewed based on the more detailed peak hour intersection analysis, which explicitly account for factors that affect the roadway during peak periods. Review of the peak hour intersection analysis results indicate that the mitigations identified under Cumulative Conditions provide an acceptable LOS for both study area intersections and roadway segments.

Table 4.11-24
Cumulative Conditions Roadway Volume/Capacity Analysis

Roadway	Segment Limits	Through Travel Lanes[1]	LOS E Capacity[2]	Cumulative		Cumulative With Project	
				ADT[3]	*Volume/ Capacity Ratio*	*ADT*[3]	*Volume/ Capacity Ratio*
Eastridge Avenue-Eucalyptus Avenue	West of Sycamore Canyon Boulevard	5	45,800	29,100	0.64	29,300	0.64
	Between Box Springs Boulevard and I-215	4	36,600	34,400	0.94	35,700	0.98
	Between I-215 and Valley Springs Parkway	5	45,800	**45,800**	**1.00**	**54,000**	**1.18**
	West of Day Street	4	36,600	28,500	0.78	30,600	0.84
	East of Day Street	5	45,800	29,700	0.65	30,900	0.67
Valley Springs Parkway	North of Eucalyptus Avenue	5	45,800	20,800	0.45	29,700	0.65
Day Street	Between SR-60 Eastbound Ramps and Canyon Springs Parkway	6	54,900	44,100	0.80	49,200	0.90
	North of Eucalyptus Avenue	5	45,800	19,900	0.43	22,500	0.49
	South of Eucalyptus Avenue	4	36,400	19,600	0.54	21,000	0.58
	South of Cottonwood Avenue	2	11,500	**15,700**	**1.37**	**16,800**	**1.46**
Gateway Drive	West of Day Street	4	36,400	5,200	0.14	11,700	0.32

Source: Appendix L.
Notes:
Bold = Estimated to exceed the threshold daily LOS values and subject to further evaluation of peak hour performance at key intersections along these routes.
1. Number of through lanes: 2 = Existing
2. LOS E capacity has been estimated based on the City of Riverside's TIA Preparation Guide, Exhibit D – City of Riverside Roadway/Capacity.
3. Average daily traffic (ADT) expressed in vehicles per day

Traffic Signal Warrants Analysis

Two unsignalized intersections are anticipated to meet traffic signal warrants in Existing With Project Conditions. There are no additional intersections anticipated to meet traffic signal warrants in Cumulative without and With Project Conditions. The traffic signal warrant analysis worksheets are included in the Appendix L.

Basic Freeway Segment Analysis

Mainline directional volumes for the weekday AM and PM peak hours in Cumulative Without Project Conditions are shown in Figures 4.11-12 and 4.11-13, respectively. Cumulative With Project mainline directional volumes for the weekday AM and PM peak hours are shown in Figures 4.11-15 and 4.11-16, respectively. Freeway operations analysis worksheets are provided in the Appendix L.

As shown in Table 4.11-25, in comparison to the freeway mainline operations under Cumulative Without Project Conditions, there are no new freeway mainline segments anticipated to operate at an unacceptable LOS during the peak hours, with the exception of the I-215 southbound freeway mainline segment, south of Eucalyptus Avenue, which will degrade from LOS E to LOS F during AM peak hour. As such, the Project's impact is considered significant.

Without the cumulative projects, the Project alone may not cause significant impacts. However, the Project's contribution to deficiencies must be considered in relationship to other projects to determine whether the Project impacts are cumulatively considerable. Cumulatively considerable means that the incremental effects of the Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Public Resources Code 21083). The Project increases volume and density on the freeway mainline segment and causes LOS to deteriorate to E. Therefore, the Project's impacts are cumulatively considerable.

While there are planned improvements for I-215, the most recent Caltrans Transportation Concept Report for I-215 forecasts that LOS will deteriorate to F even with these planned improvements (Caltrans 2012). Other potential mitigation measures for freeway segments include additional capacity enhancements, operational improvements (ramp metering or express lanes), and measures that reduce the amount of traffic or encourage mode shifts such as TDM strategies and improvements to regional transit. The Project will implement TDM measures as described in Section 4.11.5. However, the complete mitigation of this impact is considered beyond the scope of the Project because of the inability of the City to approve freeway mainline operational and capacity improvements.

The Project will contribute to significant cumulative impacts, and operations of the highway are projected to remain at unacceptable levels due to a lack of feasible mitigations. Thus, the cumulative traffic increases are a **significant cumulative impact**, and the Project's incremental contribution to the increases will be **cumulatively considerable**. As such, a Statement of Overriding Considerations will be required should the City choose to approve the Project.

Table 4.11-25
Cumulative Conditions Basic Freeway Segment Analysis

Freeway	Direction	Mainline Segment	Lanes[1]	Cumulative Without Project						Cumulative With Project					
				Volume		Density[2]		LOS[3]		Volume		Density[2]		LOS[3]	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
I-215 Freeway	Northbound	South of Eucalyptus Avenue	3	4,364	4,629	25.3	27.4	C	D	4,576	4,748	27.0	28.4	D	D
		Between Ramps	3	3,839	3,902	21.7	22.1	C	C	3,839	3,902	21.7	22.1	C	C
		North of Eucalyptus Avenue	3	4,242	4,427	24.4	25.8	C	C	4,296	4,637	24.8	27.5	C	D
	Southbound	North of Eucalyptus Avenue	5	5,262	6,556	17.6	22.3	B	C	5,428	6,648	18.1	22.7	C	C
		Between Ramps	3	4,883	5,570	29.6	36.7	D	**E**	4,883	5,570	29.6	36.7	D	**E**
		South of Eucalyptus Avenue	3	5,358	6,379	34.3	48.9	D	**F**	5,428	6,648	35.1	54.4	**E**	**F**
SR-60 Freeway	Westbound	East of Day Street	4	3,634	3,831	14.9	15.7	B	B	3,796	3,923	15.5	16.1	B	B
		Between Ramps	3	2,950	3,133	16.1	17.1	B	B	2,950	3,133	16.1	17.1	B	B
		West of Day Street	3	3,318	3,734	18.1	20.6	C	C	3,351	3,857	18.3	21.3	C	C
	Eastbound	West of Day Street	6	3,556	5,653	9.7	15.4	A	B	3,653	5,709	10.0	15.6	A	B
		Between Ramps	4	3,012	4,660	12.3	19.1	B	C	3,012	4,660	12.3	19.1	B	C
		East of Day Street	5	3,561	5,637	11.7	18.5	B	C	3,615	5,842	11.8	19.2	B	C

Source: Appendix L.
Notes:
Bold = Unacceptable Level of Service (LOS E or LOS F)
Bold and highlighted = significant impact
1. Number of lanes are in the specified direction and is based on existing conditions.
2. Density is measured by passenger cars per mile per lane (pc/mi/ln).
3. Level of service determined using HCS 2010: Basic Freeway Segments software, Version 6.65.

Freeway Merge/Diverge Analysis

Ramp merge and diverge operations were also evaluated for Cumulative Without Project and With Project Conditions. Freeway ramp junction operations analysis worksheets are provided in Appendix L. As shown in Table 4.11-26, there are no new ramp locations anticipated to exceed acceptable LOS, other than those identified under Existing Conditions (the I-215 southbound on-

ramp at Eucalyptus Avenue will remain at an unacceptable LOS). Even though the LOS is below the Caltrans standard, because the LOS grade is maintained from Without Project Conditions and does not deteriorate, the impact is considered **less than significant**. No mitigation is required.

General Plan Buildout

This section discusses General Plan Buildout without and With Project conditions and the resulting intersection operations, roadway segment operations, freeway operations, and traffic signal warrant analyses.

Roadway Improvements

The lane configurations and traffic controls assumed to be in place for General Plan Buildout Without Project conditions are consistent with those shown in Figure 4.11-1. General Plan Buildout With Project conditions also includes Project driveways and those facilities assumed to be constructed by the Project to provide site access (e.g., intersection and roadway improvements along the Project's frontage and driveways).

Vehicle Volumes

The General Plan Buildout Without Project scenario includes traffic as forecasted from the City of Riverside General Plan 2025 traffic model, the City of Moreno Valley traffic model, and Riverside Transportation Analysis Model (RivTAM). The initial estimate of the peak hour turning movements has been reviewed for reasonableness. The reasonableness checks performed include a review of flow conservation in addition to ensuring reasonable peak-to-daily relationships and a minimum additional growth of 5% over Cumulative conditions.

Figure 4.11-17 shows the resulting weekday ADT volumes for General Plan Buildout Without Project. Figures 4.11-18 and 4.11-19 show the weekday AM and PM peak hour intersection turning movements, respectively.

Figure 4.11-20 shows ADT volumes for General Plan Buildout With Project. Figures 4.11-21 and 4.11-22 show the weekday AM and PM peak hour intersection turning movements, respectively.

Table 4.11-26
Cumulative Conditions Freeway Ramp Junction Merge/Diverge Analysis

Freeway	Direction	Ramp or Segment	Junction Type	Lanes on Freeway	Lanes on Ramp	Cumulative						Cumulative With Project					
						Volume		Density[1]		LOS[2]		Volume		Density[1]		LOS[2]	
						AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
I-215	Northbound	Off-Ramp at Eucalyptus Avenue	Diverge	3	1	525	727	31.2	32.8	D	D	737	846	32.6	33.6	D	D
		On-Ramp at Eucalyptus Avenue	Merge	3	1	403	525	26.8	28.1	C	D	457	735	27.3	29.8	C	D
	Southbound	Off-Ramp at Eucalyptus Avenue	Diverge	5	2	379	986	10.0	13.1	A	B	545	1,078	10.6	13.4	B	B
		On-Ramp at Eucalyptus Avenue	Merge	3	1	475	809	32.0	38.4	D	**E**	545	1,078	32.6	40.6	D	**E**
SR-60	Westbound	Off-Ramp at Day Street	Diverge	4	1	684	698	14.5	15.4	B	B	846	790	16.1	16.3	B	B
		On-Ramp at Day Street	Merge	3	1	368	601	18.7	21.6	B	C	401	724	19.0	22.6	B	C
	Eastbound	Off-Ramp at Day Street	Diverge	6	2	544	993	12.7	19.4	B	B	641	1,049	13.1	19.9	B	B
		On-Ramp at Day Street	Merge	4	1	549	977	14.4	23.7	B	C	603	1,182	14.8	25.4	B	C

Source: Appendix L
Notes:
Bold = Unacceptable Level of Service (LOS E or LOS F)
Bold and highlighted = significant impact
1. Density calculated based on the Highway Capacity Manual (HCM) analysis; (pc/mi/ln) = passenger car per mile per lane
2. Level of service determined using HCS 2010: Ramps and Ramp Junction software, Version 6.60

Intersection Operations Analysis

LOS calculations were conducted for the study intersections to evaluate their operations under General Plan Buildout Without Project Conditions and General Plan With Project Conditions. The results are presented in Table 4.11-27.

As shown in Table 4.11-27 the following study area intersections are anticipated to operate at unacceptable LOS in General Plan Buildout Without Project Conditions:

- I-215 southbound ramps/Eucalyptus Avenue (LOS F – AM peak hours; LOS E – PM peak hour)
- Valley Springs Parkway/Eucalyptus Avenue (LOS F – AM and PM peak hours)
- Day Street/Eucalyptus Avenue (LOS E – PM peak hour)
- Day Street/Cottonwood Avenue (LOS E – AM peak hour; LOS F – PM peak hour)
- Day Street/Bay Avenue (LOS F – AM and PM peak hours)
- Day Street/Alessandro Boulevard (LOS E – AM peak hour; LOS F – PM peak hour)
- Memorial Way/Towngate Drive (LOS E – AM and PM peak hours)

For General Plan Buildout With Project Conditions, Table 4.11-33 shows that the addition of Project traffic will result in significant impacts at the following locations:

- I-215 ramps/Eastridge Avenue-Eucalyptus Avenue; I-215 southbound ramps/Eucalyptus Avenue (LOS F – AM peak hour; LOS E – PM peak hour)
- Valley Springs Parkway/Eucalyptus Avenue (LOS F – AM and PM peak hours)
- Day Street/Eucalyptus Avenue (LOS E – PM peak hour)
- Day Street/Cottonwood Avenue (LOS E – AM peak hour; LOS F – PM peak hour)
- Day Street/Bay Avenue (LOS F – AM and PM peak hours)
- Day Street/Alessandro Boulevard (LOS E – AM peak hour; LOS F – PM peak hour)
- Memorial Way/Towngate Drive (LOS E – AM and PM peak hours)

Section 4.11.4 discusses the standards for determining significant impacts. Each intersection is evaluated based on the standards for the city or cities that have jurisdiction over the intersection. The City of Riverside has two sets of standards: those for projects that conform with the General Plan and those for projects that propose uses or intensities above that contained in the General Plan. Intersections in the study area within the jurisdiction of the City of Riverside are evaluated based on the latter set of criteria.

In addition to mitigation measures **MM-TRAF-1** through **MM-TRAF-7**, the implementation of mitigation measures **MM-TRAF-8** through **MM-TRAF-12** will reduce off-site traffic impacts associated with development of the Project to less than significant levels for General Plan Buildout With Project Conditions. Impacts will be **less than significant with mitigation incorporated**.

Table 4.11-27
General Plan Buildout Conditions Intersection Analysis

ID	Intersection	Traffic Control[3]	General Plan Buildout				General Plan Buildout With Project			
			Delay[2] (secs.)		*Level of Service*		*Delay[2] (secs.)*		*Level of Service*	
			AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
1	Sycamore Canyon Boulevard / Eastridge Avenue	TS	46.2	33.8	D	C	46.9	34.0	D	C
2	Box Springs Boulevard / Eastridge Avenue	TS	39.9	45.5	D	D	51.9	48.5	D	D
3	I-215 NB and SB Ramps / Eucalyptus Avenue	TS	37.3	46.8	D	D	40.1	54.7	D	D
	• I-215 SB Ramps / Eucalyptus Avenue									
	○ Without Mitigation	CSS	**>80**	**38.6**	**F**	**E**	**>80**	**47.8**	**F**	**E**
	○ With Mitigation	TS	14.5	15.0	B	B	14.8	15.9	B	B
	• I-215 NB Ramps / Eucalyptus Avenue	TS	0.3	1.1	A	A	0.4	1.3	A	A
4	Valley Springs Parkway / Eucalyptus Avenue									
	• Without Mitigation	TS	**>80**	**>80**	**F**	**F**	**>80**	**>80**	**F**	**F**
	• With Mitigation	TS	41.7	22.1	D	C	54.1	53.9	D	D
5	Day Street / SR-60 WB Ramps	TS	21.0	13.0	C	B	23.0	16.7	C	B
6	Day Street / SR-60 EB Ramps	TS	20.0	19.9	B	B	26.3	25.4	C	C
7	Day Street / Canyon Springs Parkway	TS	24.3	42.9	C	D	31.2	50.9	C	D
8	Day Street / Campus Parkway	TS	18.9	34.6	B	C	19.3	44.0	B	D
9	Day Street / Gateway Drive	TS	23.6	31.6	C	C	31.8	38.6	C	D
10	Day Street / Driveway 1	CSS	Does Not Exist				15.9	33.3	C	D
11	Day Street / Driveway 2	CSS	13.8	20.8	B	C	13.9	20.9	B	C
12	Day Street / Eucalyptus Avenue									
	• Without Mitigation	TS	42.0	**58.8**	D	**E**	46.6	**65.4**	D	**E**
	• With Mitigation	TS	40.0	45.7	D	D	45.6	50.6	D	D
13	Day Street / Cottonwood Avenue									
	• Without Mitigation	TS	**57.7**	**>80**	**E**	**F**	**73.0**	**>80**	**E**	**F**
	• With Mitigation	TS	34.3	43.6	C	D	36.9	47.7	D	D
14	Day Street / Bay Avenue									
	• Without Mitigations	AWS	**53.7**	**54.4**	**F**	**F**	**53.8**	**54.7**	**F**	**F**
	• With Mitigations	TS	5.8	4.7	A	A	6.3	5.2	A	A

Table 4.11-27
General Plan Buildout Conditions Intersection Analysis

ID	Intersection	Traffic Control[3]	General Plan Buildout				General Plan Buildout With Project			
			Delay[2] (secs.)		Level of Service		Delay[2] (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
15	Day Street / Alessandro Boulevard									
	• Without Mitigation	TS	**77.7**	**>80**	**E**	**F**	**>80**	**>80**	**F**	**F**
	• With Mitigation	TS	31.7	51.8	C	D	32.5	53.9	C	D
16	Memorial Way / Towngate Drive									
	• Without Mitigation	TS	**56.6**	**69.7**	**E**	**E**	**62.7**	**79.2**	**E**	**E**
	• With Mitigation	TS	41.1	50.2	D	D	51.2	54.9	D	D
17	Corporate Centre Place / Canyon Springs Parkway	TS	39.9	35.9	D	D	40.3	35.9	D	D
18	Corporate Centre Place / Campus Parkway	AWS	8.5	10.7	A	B	8.7	11.1	A	B
19	Driveway 3 / Corporate Centre Place	CSS	Does Not Exist				9.5	10.2	A	B
20	Valley Springs Parkway / Corporate Centre Place	TS	18.7	18.7	B	B	19.0	27.2	B	C
21	Valley Springs Parkway / Driveway 4	CSS	11.1	16.1	B	C	16.7	28.7	C	D
22	Valley Springs Parkway / Gateway Drive	TS	18.2	11.5	B	B	21.7	26.9	C	C
23	Valley Springs Parkway / Driveway 5		Does Not Exist				7.9	18.9	A	B
24	Driveway 6 / Gateway Drive	CSS	10.3	11.5	B	B	16.0	33.6	C	D
25	Canyon Park Drive – Driveway 7 / Gateway Drive	TS	11.0	11.4	B	B	24.0	23.8	C	C
26	Driveway 8 / Gateway Drive	CSS	Does Not Exist				8.6	11.4	A	B
27	Driveway 9 / Gateway Drive	CSS	8.9	9.5	A	A	21.3	19.2	C	C
28	Canyon Park Drive / Campus Parkway	AWS	8.7	11.0	A	B	9.1	11.8	A	B
29	Canyon Park Drive / Driveway	CSS	Does Not Exist				9.0	9.2	A	A
30	Canyon Park Drive / Driveway 11	CSS	Does Not Exist				8.9	9.0	A	A
31	Canyon Park Drive / Driveway 12	UNC	Does Not Exist				7.5	7.5	A	A
32	Driveway 13 / Gateway Drive	CSS	Does Not Exist				10.6	12.5	B	B
33	Valley Springs Parkway / Driveway 14	CSY	Does Not Exist				Emergency Access Only			
34	Driveway 15 / Corporate Center Place	UNC	Does Not Exist				7.4	7.6	A	A

Source: Appendix L

Notes:

Bold = LOS does not meet the applicable jurisdictional requirements (LOS E or LOS F)

Bold and highlighted = significant impact

1. TS = Traffic Signal; CSS = Cross-street Stop; CSY: Cross-street yield; AWS = All-Way Stop; UNC = uncontrolled.
2. Per the 2010 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. Delay and level of service is calculated using Synchro 8.0 analysis software.

Roadway Segment Capacity Analysis

The results of the General Plan Buildout without and With Project roadway segment capacity analysis are presented in Table 4.11-28.

As shown in Table 4.11-28, the following study area roadway segments are anticipated to exceed the daily LOS threshold in General Plan Buildout Without Project Conditions:

- Day Street, south of Cottonwood Avenue

The following additional roadway segments are anticipated to exceed the daily LOS threshold in in General Plan Buildout With Project Conditions:

- Eastridge Avenue-Eucalyptus Avenue, between I-215 and Valley Springs Parkway
- Day Street, south of Cottonwood Avenue

The roadway segment capacities are approximate figures only, and are used to assist in determining the roadway functional classification (number of through lanes) needed to meet vehicle demand. For General Plan Buildout Without and With Project Conditions, roadway segments that are estimated to exceed the daily volume thresholds are further reviewed based on the more detailed peak hour intersection analysis, which explicitly account for factors that affect the roadway during peak periods. Review of the peak hour intersection analysis results indicate that the mitigations identified under General Plan Buildout With Project Conditions provide acceptable LOS for both study area intersections and roadway segments.

Traffic Signal Warrants Analysis

There are no new intersections anticipated to meet traffic signal warrants under General Plan Buildout Conditions, in addition to the intersections identified under Existing With Project Conditions. The traffic signal warrant analysis worksheets are included in Appendix L.

Basic Freeway Segment Analysis

General Plan Buildout Without Project mainline directional volumes for the weekday AM and PM peak hours are shown in Figures 4.11-18 and 4.11-19, respectively. General Plan Buildout With Project mainline directional volumes for the weekday AM and PM peak hours are shown in Figures 4.11-21 and 4.11-22, respectively. Freeway operations analysis worksheets are provided in the Appendix L.

Table 4.11-28
General Plan Buildout Conditions Roadway Volume/Capacity Analysis

Roadway	Segment	Existing Through Travel Lanes	General Plan Through Travel Lanes[1]	LOS E Capacity[2]	General Plan		General Plan With Project	
					ADT[3]	*Volume/ Capacity Ratio*	*ADT*[3]	*Volume/ Capacity Ratio*
Eastridge Avenue - Eucalyptus Avenue	West of Sycamore Canyon Boulevard	5	6	54,900	31,600	0.58	31,800	0.58
	B/w Box Springs Boulevard and I-215	4	6	54,900	36,200	0.66	37,500	0.68
	B/w I-215 and Valley Springs Parkway	5	6	54,900	48,500	0.88	**56,700**	**1.03**
	West of Day Street	4	6	54,900	30,100	0.55	32,100	0.58
	East of Day Street	5	6	54,900	31,300	0.57	32,400	0.59
Valley Springs Parkway	North of Eucalyptus Avenue	5	5	45,800	22,300	0.49	31,200	0.68
Day Street	B/w SR-60 EB Ramps and Canyon Springs Parkway	6	6	54,900	46,600	0.85	51,700	0.94
	North of Eucalyptus Avenue	5	6	54,900	21,000	0.38	23,700	0.43
	South of Eucalyptus Avenue	4	4	36,400	21,000	0.58	22,400	0.62
	South of Cottonwood Avenue	2	2	11,500	**17,500**	**1.52**	**18,600**	**1.62**
Gateway Drive	West of Day Street	4	4	36,400	5,800	0.16	12,300	0.34

Source: Appendix L.
Notes:
Bold = Estimated to exceed threshold daily LOS values and subject to further evaluation of peak hour performance at key intersections along these routes.
1. General Plan through lanes are used in the capacity analysis.
2. LOS E capacity has been estimated based on the City of Riverside TIA Preparation Guide, Exhibit D - City of Riverside Roadway Capacity.
3. Average Daily Traffic (ADT) expressed in vehicles per day.

As shown in Table 4.11-29, the basic freeway segments are anticipated to operate an acceptable LOS (e.g., LOS D or better) during the peak hours, with the exception of the I-215 southbound freeway mainline segment (between the off-ramp and on-ramp on Eucalyptus Avenue), which will operate at LOS E during the PM peak hour, and the I-215 southbound freeway mainline segment (south of Eucalyptus Avenue), which will operate at LOS E and F in the AM and PM peak hours respectively.

Without the cumulative projects, the Project alone may not cause significant impacts. However, the Project's contribution to deficiencies must be considered in relationship to other projects to determine whether the Project's impacts are cumulatively considerable. Cumulatively considerable means that the incremental effects of the Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Public Resources Code 21083). The Project increases volume and density and contributes to the deterioration of freeway mainline segments operations. Therefore, the Project's impacts are cumulatively considerable.

While there are planned improvements for I-215, the most recent Caltrans Transportation Concept Report for I-215 forecasts that LOS will deteriorate to F even with these planned improvements (Caltrans 2012). Other potential mitigation measures for freeway segments include additional capacity enhancements, operational improvements (ramp metering or express lanes), and measures that reduce the amount of traffic or encourage mode shifts such as TDM strategies and improvements to regional transit. The Project will implement TDM measures as described in Section 4.11.5. However, the complete mitigation of deteriorating operations is considered beyond the scope of the Project because of the inability of the City to approve freeway mainline operational and capacity improvements.

The Project will contribute to significant cumulative impacts, and operations of the highway are projected to remain at unacceptable levels due to a lack of feasible mitigations. Thus, the cumulative traffic increases are a **significant cumulative impact**, and the Project's incremental contribution to the increases will be **cumulatively considerable**. As such, a Statement of Overriding Considerations will be required should the City choose to approve the Project.

Table 4.11-29
General Plan Buildout Basic Freeway Segment Analysis

Freeway	Direction	Mainline Segment Location	Lanes[1]	General Plan Without Project						General Plan With Project					
				Volume		Density [2]		LOS [3]		Volume		Density [2]		LOS [3]	
				AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
I-215 Freeway	*Northbound*	South of Eucalyptus Avenue	3	4,592	4,867	27.1	29.4	D	D	4,804	4,986	28.9	30.5	D	D
		Between Ramps	3	4,031	4,097	22.9	23.4	C	C	4,031	4,097	22.9	23.4	C	C
		North of Eucalyptus Avenue	3	4,488	4,667	26.3	27.7	D	D	4,542	4,877	26.7	29.5	D	D
	Southbound	North of Eucalyptus Avenue Between	5	5,585	6,889	18.7	23.7	C	C	5,751	6,981	19.3	24.0	C	C
		Ramps	3	5,127	5,849	31.9	40.3	D	**E**	5,127	5,849	31.9	40.3	D	**E**
		South of Eucalyptus Avenue	3	5,630	6,712	37.4	55.8	**E**	**F**	5,700	6,981	38.3	62.9	**E**	**F**
SR-60 Freeway	*Westbound*	East of Day Street Between Ramps	4	3,824	4,027	15.7	16.5	B	B	3,986	4,119	16.3	16.9	B	B
		West of Day Street	3	3,098	3,290	16.9	18.0	B	B	3,098	3,290	16.9	18.0	B	B
			3	3,486	3,927	19.1	21.8	C	C	3,519	4,050	19.3	22.6	C	C
	Eastbound	West of Day Street Between Ramps	6	3,739	5,938	10.2	16.2	A	B	3,836	5,994	10.5	16.4	A	B
		East of Day Street	4	3,163	4,893	13.0	20.2	B	C	3,163	4,893	13.0	20.2	B	C
			5	3,743	5,929	12.3	19.5	B	C	3,797	6,134	12.4	20.2	B	C

Source: Appendix L.
Notes:
Bold = LOS does not meet requirements (LOS E or LOS F)
Bold and highlighted = significant impact
1. Number of lanes are in the specified direction and is based on existing conditions.
2. Density is measured by passenger cars per mile per lane (pc/mi/ln).
3. Level of service determined using HCS 2010: Basic Freeway Segments software, Version 6.65

Freeway Merge/Diverge Analysis

Ramp merge and diverge operations were also evaluated for General Plan Buildout Without Project and With Project Conditions, and the results of this analysis are shown in Table 4.11-30. Freeway ramp junction operations analysis worksheets are provided in Appendix L. There are no new ramp locations anticipated to exceed acceptable LOS, in addition to the ramp location identified as operating at an unacceptable LOS during the peak hours under Existing Conditions (the I-215 southbound on-ramp at Eucalyptus Avenue will remain at an unacceptable LOS). However, the Project's contribution to the existing deficiencies is considered cumulatively considerable due to increase in volume and density from the Project. Cumulatively considerable means that the incremental effects of the Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Public Resources Code 21083).

The Project will contribute to significant cumulative impacts, and operations of the highway are projected to remain at unacceptable levels due to a lack of feasible mitigations. Thus, the cumulative traffic increases are a **significant cumulative impact**, and the Project's incremental contribution to the increases will be **cumulatively considerable**. As such, a Statement of Overriding Considerations will be required should the City choose to approve the Project.

Table 4.11-30
General Plan Buildout Freeway Ramp Junction Merge/Diverge Analysis

Freeway	Direction	Ramp Location	Junction Type	Lanes on Freeway	Lanes on Ramp	General Plan Buildout Without Project						General Plan Buildout With Project					
						Volume		Density [1]		LOS [2]		Volume		Density [1]		LOS [2]	
						AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
I-215 Freeway	Northbound	Off Ramp at Eucalyptus Avenue	Diverge	3	1	561	770	32.3	34.0	D	D	773	889	33.7	34.8	D	D
		On Ramp at Eucalyptus Avenue	Merge	3	1	457	570	28.3	29.5	D	D	511	780	28.7	31.2	D	D
	Southbound	Off Ramp at Eucalyptus Avenue	Diverge	5	2	458	1,040	11.1	14.2	B	B	624	1,132	11.7	14.5	B	B
		On Ramp at Eucalyptus Avenue	Merge	3	1	503	863	33.5	40.9	D	**E**	573	1,132	34.1	43.1	D	**E**
SR-60 Freeway	Westbound	Off Ramp at Day Street	Diverge	4	1	726	737	15.6	16.5	B	B	888	829	17.1	17.4	B	B
		On Ramp at Day Street	Merge	3	1	388	637	19.7	22.7	B	C	421	760	19.9	23.7	B	C
	Eastbound	Off Ramp at Day Street	Diverge	6	2	576	1,045	13.4	20.4	B	C	673	1,101	13.7	20.9	B	C
		On Ramp at Day Street	Merge	4	1	580	1,036	15.2	25.1	B	C	634	1,241	15.6	26.7	B	C

Source: Appendix L.
Notes:
Bold = LOS does not meet requirements (LOS E or LOS F)
Bold and highlighted = significant impact
1. Density calculated based on the Highway Capacity Manual (HCM) analysis; (pc/mi/ln) = passenger car per mile per lane
2. Level of service determined using HCS2010 : Ramps and Ramp Junction software, Version 6.60

Progression Analysis along Eucalyptus Avenue and Day Street

A traffic signal progression analysis was conducted for the following locations under Cumulative With Project Conditions and General Plan Buildout With Project Conditions, with the identified intersection improvements, to evaluate vehicular queuing by considering the signal timing and physical spacing of intersections:

- Eastridge Avenue-Eucalyptus Avenue, between Box Springs Boulevard and Valley Springs Parkway
- Day Street, between SR-60 Westbound ramps and Cottonwood Avenue

The progression analysis conducted along Eucalyptus Avenue and Day Street through the study area were utilized to evaluate the turning pocket lengths necessary to accommodate 95th percentile peak hour queues and to demonstrate acceptable peak hour operations in the study area. The progression analysis was conducted for the weekday AM and PM peak hours. The traffic modeling and signal timing optimization software package Synchro plus SimTraffic (Version 8 Build 801) was utilized for the progression analysis.

The recommended traffic signal timing for the intersections along Eastridge Avenue-Eucalyptus Avenue, between Box Springs Boulevard and Valley Springs Parkway and Day Street, and between the SR-60 westbound ramps and Cottonwood Avenue have been included in Appendix L. The progression analysis results on Tables 4.11-31 and 4.11-32 summarize the resulting 95th percentile queue lengths for Cumulative With Project and General Plan Buildout With Project Conditions, respectively. Review of the Synchro SimTraffic peak hour simulation results indicate that the turn lane queues at these locations are anticipated to clear efficiently and that the turn bay pocket lengths provide adequate storage. These findings have been reviewed and accepted by City staff.

Table 4.11-31
Progression Analysis Results For Cumulative With Project Conditions[1]

ID	Location	Turning Movement Lane	Existing Storage Length[2]	95th Percentile Queue Length	
				AM	*PM*
Eastridge Avenue - Eucalyptus Avenue					
2	Box Springs Boulevard	EBL	90	156	61
		EBT	1,220	279	514
		WBL	150	115	123
		WBT	760	505	285

Table 4.11-31
Progression Analysis Results For Cumulative With Project Conditions[1]

ID	Location	Turning Movement Lane	Existing Storage Length[2]	95th Percentile Queue Length	
				AM	*PM*
3	I-215 NB and SB Ramps	EBL	260	121	178
		EBT	800	196	207
		WBL	275	234	290
		WBT	820	309	201
4	Valley Springs Parkway	EBL	300	561	263
		EBT	515	668	271
		EBR	360	34	73
		WBL	100	80	162
		WBT	1,990	565	852
Day Street					
5	SR-60 WB Ramps	NBT	850	104	108
		NBR	175	88	171
		SBL	200	120	128
		SBT	970	139	138
6	SR-60 EB Ramp	NBT	375	178	380
		NBR	375	230	297
		SBL	425	144	165
		SBT	850	121	130
7	Canyon Springs Parkway	NBL	170	79	152
		NBT	590	118	509
		SBL	170	197	241
		SBT	375	152	255
8	Campus Parkway	NBL	130	79	121
		NBT	890	109	236
		SBL	190	64	170
		SBT	590	83	263
		SBR	590	12	51
9	Gateway Drive	NBL	190	135	142
		NBT	1,100	160	245
		SBL	260	65	122
		SBT	890	356	229
12	Eucalyptus Avenue	NBL	100	201	173
		NBT	520	273	252
		SBL	200	97	395
		SBT	1,100	267	456
13	Cottonwood Avenue	NBL	80	73	148
		NBT	1,240	368	614
		SBL	100	178	168
		SBT	1,225	215	219

Source: Appendix L.
Notes:
1. Queue length calculated using SimTraffic.
2. Existing pocket length storage (for turning movements) or link distance (for through movements).

Table 4.11-32
Progression Analysis Results For General Plan Buildout With Project Conditions[1]

ID	Location	Turning Movement Lane	Existing Storage Length[2]	95th Percentile Queue Length	
				AM	*PM*
Eastridge Avenue - Eucalyptus Avenue					
2	Box Springs Boulevard	EBL	90	161	67
		EBT	1,220	361	441
		WBL	150	163	42
		WBT	760	474	260
3	I-215 NB and SB Ramps	EBL	260	133	155
		EBT	800	177	204
		WBL	275	193	333
		WBT	820	346	191
4	Valley Springs Parkway	EBL	300	557	286
		EBT	515	591	254
		EBR	360	31	69
		WBL	100	83	148
		WBT	1,990	914	554
Day Street					
5	SR-60 WB Ramps	NBT	850	82	121
		NBR	175	113	147
		SBL	200	152	111
		SBT	970	152	160
6	SR-60 EB Ramps	NBT	375	194	332
		NBR	375	127	267
		SBL	425	137	214
		SBT	850	113	146
7	Canyon Springs Parkway	NBL	170	95	194
		NBT	590	163	552
		SBL	170	184	287
		SBT	375	110	349
8	Campus Parkway	NBL	130	87	104
		NBT	890	94	211
		SBL	190	70	141
		SBT	590	76	256
		SBR	590	15	29
9	Gateway Drive	NBL	190	160	124
		NBT	1,100	158	247
		SBL	260	84	125
		SBT	890	288	268
12	Eucalyptus Avenue	NBL	100	196	140
		NBT	520	267	245
		SBL	200	120	348
		SBT	1,100	221	438

Table 4.11-32
Progression Analysis Results For General Plan Buildout With Project Conditions[1]

ID	Location	Turning Movement Lane	Existing Storage Length[2]	95th Percentile Queue Length	
				AM	*PM*
13	Cottonwood Avenue	NBL	80	124	137
		NBT	1,240	503	817
		SBL	100	194	173
		SBT	1,225	260	304

Source: Appendix L.
Notes:
1. Queue length calculated using SimTraffic.
2. Existing pocket length storage (for turning movements) or link distance (for through movements).

Site Access and Circulation

The Project site will provide access from Day Street, Corporate Centre Place, Valley Springs Parkway, Gateway Drive, and Canyon Park Drive. Regional access to the Project site will be provided by the I-215 freeway via Eucalyptus Avenue and the SR-60 freeway via Day Street. The roadways adjacent to the site - Valley Springs Parkway, Gateway Drive, Corporate Centre Place, Canyon Park Drive, and Day Street - are built to their ultimate cross-sections.

Section 4.11.5, Project Elements that Can Reduce Impacts, describes a number of improvements that will be constructed as part of the Project. Additionally, on-site signing and striping shall be implemented in conjunction with detailed construction plans for the Project site. With the incorporation of these Project elements, impacts to site access and circulation will be **less than significant**. No mitigation is required.

Bicycle, Pedestrian, and Transit Circulation

Existing bicycle, pedestrian and transit conditions are described in more detail in section 4.11.1. Implementation of the Project will not conflict with the applicable Bicycle Master Plans nor will it disrupt bicycle, pedestrian or transit circulation or planned facilities. The Project will include new sidewalks and crosswalks to improve pedestrian circulation on and adjacent to the Project site. The Project also includes a bus stop on the northbound side of Valley Springs Parkway south of the intersection with Gateway Drive. The bus stop will be ADA compliant with an 8-foot by 5-foot boarding pad across the area that would otherwise be a landscaped buffer. Amenities will include a bench and a garbage can. The Project will improve circulation and access for pedestrians and transit users and will not conflict with any applicable plans for bicyclists, pedestrians and transit. Therefore there is **no impact** associated with bicycle, pedestrian and transit circulation.

Threshold TRAF-2: ***Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?***

The focus of the Riverside County CMP is the development of an Enhanced Traffic Monitoring System in which real-time traffic count data can be accessed by the Riverside County Transportation Commission to evaluate the condition of the Congestion Management System, as well as meet other monitoring requirements at the State and Federal levels. RCTC's adopted minimum LOS threshold is LOS E. Therefore, when a CMP street or highway segment falls to LOS F, a deficiency plan must be prepared. Preparation of a deficiency plan is the responsibility of the local agency where the deficiency is located. Other agencies identified as contributors to the deficiency are also required to coordinate in the development of the plan. The plan must contain mitigation measures, including consideration of Transportation Demand Management strategies and transit alternatives, and a schedule for mitigating the deficiency. To ensure that the CMP is appropriately monitored to reduce the occurrence of LOS deficiencies, it is the responsibility of local agencies, when reviewing and approving development proposals, to consider the traffic impacts on the CMP System.

As shown in Exhibit 2-1 of the 2011 CMP, the I-215 and SR-60 freeways are identified as Interstate and Highway CMP facilities, respectively. As such, any contribution to substantial deficiencies to these facilities will be considered a significant Project impact. As previously discussed above, the I-215 southbound freeway mainline segment, south of Eucalyptus Avenue, will deteriorate from LOS E during the PM peak hour in Existing Conditions to LOS F during the PM peak hour in Existing With Project Conditions. In Cumulative Conditions the same segment deteriorates from LOS D to LOS E in the AM peak hour with the Project, whereas the I-215 southbound segment between the ramps for Eucalyptus Avenue maintains LOS E. In General Plan buildout, the southbound I-215 segments between the ramps and south of Eucalyptus Avenue operate at unacceptable levels without the Project and continue to maintain the same LOS with the Project. In Cumulative and General Plan Buildout Conditions, the I-215 southbound on-ramp at Eucalyptus Avenue will remain at unacceptable LOS. Even though deficient LOS is maintained on I-215, south of Eucalyptus and the associated on-ramp, the Project increases volume and associated density, and therefore the Project's contribution to deficiencies is considered **cumulatively considerable**. As such, a Statement of Overriding Considerations will be required should the City choose to approve the Project.

As required by mitigation measure **MM-TRAF-2**, the Project applicant will be required to pay its fair share of the cost to install a traffic signal to serve the southbound right turn only off-ramp and westbound through traffic at the I-215 southbound ramps and Eucalyptus Avenue, and thus,

will minimize potential traffic impacts to CMP facilities. Additionally, the Project applicant shall participate in the funding of off-site improvements, including the City of Riverside's DIF and regional TUMF programs by paying applicable fees, supplemented by participation in additional intersection improvement costs, as needed. Payment into the regional fee program includes improvements to I-215. However, even with planned improvements to I-215, Caltrans' forecasts show the freeway operating at LOS F in 2035 (Caltrans 2012). Other potential mitigation measures for freeway segments include additional capacity enhancements, operational improvements (ramp metering or express lanes), and measures that reduce the amount of traffic or encourage mode shifts such as TDM strategies and improvements to regional transit. The Project will implement TDM measures as described in Section 4.11.5. However, the complete mitigation of deteriorating operations is considered beyond the scope of the Project because of the inability of the City to approve freeway mainline operational and capacity improvements.

Therefore, even with the implementation of mitigation measures, the Project will contribute to significant cumulative impacts, and operations of the highway are projected to remain at unacceptable levels due to a lack of additional feasible mitigation measures. Thus, the cumulative traffic increases are a **significant cumulative impact**, and the Project's incremental contribution to the increases will be **cumulatively considerable.** Additionally, since the Project will cause a CMP facility to deteriorate below LOS E in Existing With Project Conditions, a deficiency plan will be prepared by the City. As such, a Statement of Overriding Considerations will be required should the City choose to approve the Project

Threshold TRAF-3: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The Project site is located approximately 1.6 miles north of the March Air Reserve Base/Inland Port (March ARB) and is located within the March ARB Land Use Compatibility Plan (Mead & Hunt 2014); specifically the Project is within Zone D – Flight Corridor Buffer (Zone D). The Project and its various project components are permitted uses within Zone D. Under the Zone D, hazards to flight include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land use development that may cause the attraction of birds to increase is also prohibited. Each of these issues is discussed further below.

Bird Attraction

Built features must be designed to avoid the heightened attraction of birds (Mead & Hunt 2014). The City will review the Project plans prior to plan check approval to ensure that there are no features on the Project site that will result in a heightened attraction to birds, thereby causing a change in air traffic patterns that results in a substantial safety risk.

Hazards to Flight

The Project does not include any tall objects. However, since completion of the IS, a helistop/helipad has been added to the Project description. The Canyon Springs Healthcare Campus' 94-foot tall hospital will have an approximately 65-foot by 65-foot (4,225 square-foot) rooftop helistop to accommodate EMS helicopters for rapid patient transport to and from other facilities with different medical specialties or capabilities. The frequency of helicopter landings on the proposed Canyon Springs Healthcare Campus hospital is estimated at four to six helicopter landings per month (Appendix N). Should the Canyon Springs Healthcare Campus include a trauma status, helicopter activities could be expected to increase to 8-30 landings per month.

The Project is located within a sector of March ARB Class C airspace, which is different from the zones contained in the Land Use Compatibility Plan Policy documentation. Exhibit H-1 of Appendix N depicts March ARB flight paths and shows the three different kinds of flight paths. All three flight paths are clear of the Project site. The closest point of the March ARB flight paths will be approximately 0.6 mile from the Project site. An analysis of flight arrival and departure patterns shows that March ARB flight paths will not interfere with helicopter flight paths.

However, pilots may not operate within this airspace without radio contact with March ARB Air Traffic Control. Therefore, pilots operating to and from the Canyon Springs Healthcare Campus hospital helistop will be in radio contact with March ARB Air Traffic Control. Additionally, Air Traffic Control will provide traffic coordination including appropriate separation between fixed wing and helicopter traffic. Per mitigation measure **MM-TRAF-13**, prior to design approval, the Project plans will be submitted and approved by the March ARB Air Traffic Control. These plans and a subsequent letter of agreement will define specific flight paths and communication procedures.

Additionally, there are several regulatory procedures that must be followed prior to construction, as well as during or after construction, including obtaining a permit for flight operations from the Caltrans Division of Aeronautics These regulatory requirements are included as mitigation measure **MM-TRAF-14**.

Since the Project uses are permitted within the March ARB/Inland Port Airport Land Use Compatibility Plan, the required regulatory actions will be taken, and mitigation measures **MM-TRAF-13** and **MM-TRAF-14** will be implemented, impacts will be **less than significant with mitigation incorporated**.

4.11.7 Mitigation Measures

Section 15126.4 of the State CEQA Guidelines requires EIRs to describe feasible measures that can minimize significant adverse impacts. Mitigation measures for the Project are described below.

Project mitigation may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. Improvements constructed by development should be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the City's discretion). When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Preliminary cost calculations associated with each mitigation measure, as well as the fair share calculations, are provided in Appendix L.

Existing With Project Conditions

MM-TRAF-1: **Valley Springs Parkway/Eucalyptus Avenue (#4):** Prior to opening the Project for operation, the Project developer/applicant shall pay for and install two five-section signal heads as well as modify the signal phasing such that there is an overlap phase for the existing dual right turn lanes on the southbound approach. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements.

Cumulative With Project Conditions

MM-TRAF-2: **I-215 Southbound Ramps/Eucalyptus Avenue (#3):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost for the installation of a traffic signal, and construct the traffic signal, to serve the southbound right turn only off-ramp and westbound through traffic. This configuration will be similar to the existing I-215 northbound right turn only off-ramp / Eucalyptus Avenue intersection design.

MM-TRAF-3: **Valley Springs Parkway/Eucalyptus Avenue (#4):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to modify striping to provide a second left turn lane, in addition to the existing two through lanes on the northbound approach.

The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.

MM-TRAF-4: **Day Street/Cottonwood Avenue (#13):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to widen Day Street to provide a separate right turn lane, in addition to the existing left turn lane and one through lane on the northbound approach. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.

MM-TRAF-5: **Day Street / Bay Avenue (#14):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to complete the following improvements:

- Northbound approach: Install a traffic signal and widen Day Street to provide a second through lane.
- Southbound approach: Widen Day Street to provide a second through lane.

The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.

MM-TRAF-6: **Day Street/Alessandro Boulevard (#15):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to modify striping and the existing raised median to provide a second left turn lane, in addition to the existing three through lanes on the eastbound approach. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.

MM-TRAF-7: **Memorial Way/Towngate Drive (#16):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to implement signal modifications for protected/permitted operations for both the north/south movements and the east/west movements as well as modify the intersection to include the following geometrics:

- Southbound approach: Convert the existing second through lane to provide a dedicated right turn late with overlap phasing, in addition to the existing left turn lane and one through lane.
- Eastbound approach: Retain existing two through lanes and defacto right turn lane.

- Westbound approach: Retain existing two through lanes and defacto right turn lane.

The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.

General Plan Buildout Conditions

MM-TRAF-8: **Day Street/Eucalyptus Avenue (#12):** Prior to opening the Project for operation, the Project developer shall pay fees for the TUMF program which includes modification of this intersection to provide a dedicated right turn lane with overlap phasing on the northbound approach. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.

MM-TRAF-9: **Day Street/Cottonwood Avenue (#13):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to complete the following improvements:

- Eastbound approach: Widen Cottonwood Avenue to provide a separate right turn lane, in addition to the existing left turn lane and one through lane.
- Westbound approach: Provide overlap phasing for the existing right turn lane.

The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.

MM-TRAF-10: **Day Street/Alessandro Boulevard (#15):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to complete the following improvements:

- Northbound approach: Modify striping to provide a second through lane, in addition to the existing left turn lane and through lane.
- Southbound approach: Widen Day Street to provide a dedicated right turn lane.
- Westbound approach: Modify striping and existing raised median to provide a second left turn lane and widen Alessandro Boulevard to provide a third receiving lane.

The Project developer will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.

MM-TRAF-11: **Valley Springs Parkway/Driveway 5 (#23):** Prior to opening the Project for operation, the Project developer shall pay for and install a traffic signal. Intersection geometries will be constructed as described in Section 4.11.5, *Project Design Features that Will Reduce Impacts*.

MM-TRAF-12: **Canyon Park Drive – Driveway 7/Gateway Drive (#25):** Prior to opening the Project for operation, the Project developer shall pay for and install a traffic signal. Intersection geometries will be constructed as described in Section 4.11.5, *Project Design Features that Will Reduce Impacts*.

MM-TRAF-13: Prior to design approval of the helistop by the City of Riverside Planning Department, the developer/applicant shall submit plans to the March ARB Air Traffic Control for review and approval of plans related to the proposed helistop location and proposed helicopter flight path alignments to ensure no conflicts occur between the proposed helicopter flight paths and March ARB flight operations. A copy of the approved plans from March ARB Air Traffic Control shall be submitted to the City of Riverside Planning Department. A letter of agreement shall be developed between March ARB Air Traffic Control and the Canyon Springs Healthcare Campus operator. The letter of agreement will define specific flight paths and communication procedures for helicopter operations to and from the hospital. The Canyon Springs Healthcare Campus operator will require all helicopter operators using the helistop to sign the letter of agreement.

MM-TRAF-14: Prior to helistop approval by the City of Riverside Planning Commission/City Council, the following agency actions will be required with regards to the design, construction, and operation of the helistop:

- An FAA Form 7460-1 will be submitted.
- An airspace study by FAA staff per Part 157, Notice of Landing Area Proposal, of the Federal Aviation Regulations (FARs). This study results in an "airspace determination letter."
- Project review and finding of consistency with the March ARB/Inland Port Airport Land Use Compatibility Plan by Riverside County Airport Land Use Commission as required by California Public Utilities Code.

- Application for and receipt of Heliport Site Approval Permit from Caltrans Division of Aeronautics authorizing heliport construction.
- After construction of the helipad a final inspection and approval of a Heliport Permit authorizing flight operations by Caltrans Division of Aeronautics.

4.11.8 Environmental Impacts After Mitigation Is Incorporated

In Existing With Project Conditions, the Project causes a significant impact at the intersection of Valley Springs Parkway/Eucalyptus Avenue (#4). With the implementation of mitigation measure **MM-TRAF-1**, the Project's impacts will be reduced to **less than significant** levels.

In Cumulative With Project conditions, the Project will result in significant impacts at the following intersections: I-215 SB Ramps/Eucalyptus Avenue; Valley Springs Parkway/Eucalyptus Avenue; Day Street/Cottonwood Avenue; Day Street/Bay Avenue; Day Street/Alessandro Boulevard; and Memorial Way/Towngate Drive. With the implementation of mitigation measures **MM-TRAF-2** through **MM-TRAF-7,** the Project's impacts at these intersections will be reduced to **less than significant** levels.

The Project also contributes to unacceptable LOS on the I-215 southbound freeway mainline, south of Eucalyptus Avenue in Cumulative With Project conditions. The operation of the highway is projected to remain at unacceptable levels due to a lack of feasible mitigation measures. Thus, the cumulative traffic increases are a **significant cumulative impact**, and the Project's incremental contribution to the increases will be **cumulatively considerable.**

In General Plan Buildout With Project Conditions, the Project will result in significant impacts at the following intersections: I-215 southbound ramps/Eucalyptus Avenue; Valley Springs Parkway/Eucalyptus Avenue; Day Street/Eucalyptus Avenue; Day Street/Cottonwood Avenue; Day Street/Bay Avenue; Day Street/Alessandro Boulevard; and Memorial Way/Towngate Drive. With the implementation of mitigation measures **MM-TRAF-8** through **MM-TRAF-12,** the Project's impacts at these intersections will be reduced to **less than significant** levels.

The Project also contributes to unacceptable LOS on the I-215 southbound freeway mainline, south of Eucalyptus Avenue and between the off-ramp and on-ramp on Eucalyptus Avenue in General Plan With Project conditions. The operation of the highway is projected to remain at unacceptable levels due to a lack of feasible mitigation measures. Thus, the cumulative traffic increases are a **significant cumulative impact**, and the Project's incremental contribution to the increases will be **cumulatively considerable.**

The Project is located within a sector of March ARB Class C airspace, which is different from the zones contained in the Land Use Compatibility Plan Policy documentation. However, the Project uses are permitted within the March ARB/Inland Port Airport Land Use Compatibility Plan, the required regulatory actions will be taken, and mitigation measures **MM-TRAF-13** and **MM-TRAF-14** will be implemented, and therefore, impacts will be **less than significant**.

4.11.9 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act (CEQA), as amended.

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4.12 UTILITIES AND SERVICE SYSTEMS

The focus of the following discussion and analysis is based on the Initial Study and Notice of Preparation (NOP) (Appendix A) and comments received during the NOP public comment period. This section:

- Describes the existing utilities and service systems setting
- Identifies relevant regulatory requirements
- Evaluates potentially adverse impacts related to water supply and solid waste disposal
- Identifies mitigation measures related to implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (Project)

The Initial Study and NOP (Appendix A) found the Project to have less than significant impacts related to:

- The exceedance of wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB)
- The construction of new water or wastewater treatment facilities or expansion of existing facilities
- The construction of new stormwater drainage facilities or expansion of existing facilities and wastewater treatment capacity
- Compliance with federal, state, and local statutes and regulations related to solid waste

These impacts will be considered less than significant and are, therefore, not discussed further in this Draft Environmental Impact Report (EIR).

4.12.1 Setting

The discussion related to potable water and solid waste in the following subsections describes the existing environmental conditions at the time the NOP was published and is, therefore, considered the baseline.

Potable Water

The Project site is located within the Eastern Municipal Water District (EMWD) service area. EMWD was formed in 1950 and annexed into the Metropolitan Water District of Southern California (MWD) in 1951 to deliver imported water. EMWD's service area encompasses 540 square miles with an estimated population of over 755,000. EMWD has four sources of water

supply: imported water purchased from MWD, local potable groundwater, local desalted groundwater, and recycled water. Imported water accounts for approximately 67%, local potable groundwater accounts for approximately 12%, desalted groundwater accounts for 3%, and recycled water accounts for 19% of supply (Appendix O).

EMWD relies on MWD to provide the majority of its potable water supply and a small percentage of its non-potable water supply. The majority of EMWD's potable water is supplied in the northern part of EMWD by the Mills MWD Water Treatment Facility and in the southeastern portion of EMWD by the MWD Lake Skinner Water Treatment Facility. Untreated water from MWD is treated at EMWD's Perris and Hemet Microfiltration plants for use as a potable source of water (Appendix O).

In an effort to reduce dependency on imported water from MWD, EMWD has developed several programs designed to take advantage of local resources. High-quality groundwater is a source of water for local customers in the Hemet/San Jacinto area. In the West San Jacinto Basin, groundwater is blended with imported water for use in the western portion of EMWD. EMWD has also constructed two desalination facilities to recover poor-quality groundwater with high total dissolved solids levels in the West San Jacinto groundwater basin areas. The product water from the desalinators enters EMWD's potable distribution system (Appendix O).

In June of 2011, the EMWD Board of Directors adopted the 2010 Urban Water Management Plan (UWMP). This plan details EMWD's demand projections and provides information regarding EMWD's supply. The majority of EMWD's current and future projected demand is met through imported water delivered by MWD. EMWD's 2010 UWMP relies heavily on information and assurances included in the 2010 MWD Regional UWMP when determining supply reliability. Demand for EMWD included in the 2010 UWMP is calculated across the district and is not project specific (Appendix O).

The Project will connect to existing water lines adjacent to the Project site. Existing EMWD potable water lines are located south of the Project site, along Eucalyptus Avenue; west of the Project site, along Valley Springs Parkway; north of the Project site, along Campus Parkway and Corporate Center Place; east of the Project, along Day Street; and through the Project site, along Gateway Drive and Canyon Park Drive. The estimated demand for the Project is 216 acre-feet per year (AFY) (Appendix O).

It is anticipated that the majority of the water demands within EMWD's jurisdiction caused by future development will be met through additional water imports from MWD. Imported sources will be supplemented by an increase in desalination of brackish groundwater, recycled water use, and water use efficiency. In the 2010 MWD Regional UWMP, MWD analyzed the reliability of water delivery through the State Water Project and the Colorado River Aqueduct and concluded

that with the storage and transfer programs developed by MWD, MWD will have a reliable source of water to serve its member agencies' needs through 2030 during normal, historic single-dry and historic multiple dry years within a 20-year projection.

Wastewater Services

Wastewater from the Project will be treated at the City of Riverside (City) Regional Water Quality Control Plant. Existing sewer pipelines are located along Valley Springs Parkway, Gateway Drive, Corporate Centre Place, and Day Street. The main existing sewer collectors of 12-inch-diameter and 15-inch-diameter vitrified clay pipe are located along Valley Springs Parkway, which is where all the sewage from the Project will collect before draining toward the 15-inch-diameter trunk sewer along Eucalyptus Avenue and Eastridge Avenue.

Solid Waste

The City has authorized commercial hauling services to Athens Services, Burrtec Waste Industries (Burrtec), and CR&R Waste Services (City of Riverside 2016). It is not yet known which hauling service will serve the Project for solid waste collection. Regardless of the solid waste hauling service, solid waste is collected and taken to the Robert A. Nelson Transfer Station, which is owned by the County of Riverside and operated under a 20-year franchise by Burrtec. Burrtec then transfers the waste to the Badlands Landfill, El Sobrante Landfill, or the Lamb Canyon Landfill (City of Riverside 2007a). These three landfills have a combined remaining capacity of 69.1 million tons, as shown in Table 4.12-1.

Table 4.12-1
Existing Landfills

Landfill	Location	Estimated Close Date	Maximum Permitted Daily Load (tons/day)	Estimated Total Capacity (tons)	Current Remaining Capacity (tons)
Badlands Landfill	31125 Ironwood Avenue Moreno Valley, CA	2022	4,500	17.6 million	5.7 million as of July 2016
El Sobrante Landfill	10910 Dawson Canyon Road Corona, CA	2045	16,054	209.9 million	57.5 million as of July 2016
Lamb Canyon Landfill	16411 Lamb Canyon Road (State Route 79) San Jacinto, CA	2029	5,000	15.7 million	5.9 million as of July 2016
		Total	**25,554**	**243.2 million**	**69.1 million**

Source: CalRecycle 2016a, 2016b, 2016c; Hesterly, pers. comm. 2016.

The Project will generate approximately 5,166 tons of solid waste annually (Appendix J).

4.12.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

Clean Water Act

Section 401 of the Clean Water Act (CWA) requires that an applicant for any federal permit (e.g., a U.S. Army Corps of Engineers Section 404 permit) obtain certification from the state that the discharge will comply with other provisions of the CWA and with state water quality standards. For example, an applicant for a permit under CWA Section 404 must also obtain water quality certification per CWA Section 401. Section 404 requires a permit from the U.S. Army Corps of Engineers prior to discharging dredged or fill material into waters of the United States, unless such a discharge is exempt from CWA Section 404.[1] For the Project area, the Santa Ana RWQCB must provide the water quality certification required under CWA Section 401. Water quality certification under Section 401, and the associated requirements and terms, is required to minimize or eliminate the potential water quality impacts associated with the action(s) requiring a federal permit.

CWA Section 402 established the National Pollutant Discharge Elimination System to regulate the discharge of pollutants from point sources. CWA Section 404 established a permit program to regulate the discharge of dredged or fill material into waters of the United States. CWA Section 303 requires states to identify surface waters that have been impaired. Under Section 303(d), states, territories, and authorized tribes are required to develop a list of water quality segments that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology (33 U.S.C. Section 1251 et seq.).

State

Recycled Water Policy

On January 22, 2013, the California State Water Resources Control Board adopted a revision of a 2009 statewide recycled water policy, with the ultimate goal of increasing the use of recycled water from municipal wastewater sources. Included in the statewide policy is the mandate to increase the use of recycled water in California from 2002 levels by one million AFY by 2020, and an additional two million AFY by 2030. The plan also states that the State Water Regional Control Board expects to increase the use of stormwater from 2007 levels to at least 500,000 AFY by 2020 and one million AFY by 2030 (SWRCB 2013).

[1] The term "waters of the United States" as defined in the Code of Federal Regulations (40 CFR 230.3(s)) includes all navigable waters and their tributaries.

Senate Bill X7-7

Senate Bill (SB) X7-7, effective February 3, 2010, is the water conservation component to the Delta legislative package (SB 1, Delta Governance/Delta Plan). It seeks to implement water use reduction goals established in 2008 to achieve a 20% statewide reduction in urban per capita water use by December 31, 2020. The bill requires each urban retail water supplier to develop urban water use targets to help meet the 20% goal by 2020 and an interim 10% goal by 2015. The bill establishes methods for urban retail water suppliers to determine targets to help achieve water reduction targets. The retail water supplier must select one of the four compliance options. The retail agency may choose to comply with SB X7-7 as an individual or as a region in collaboration with other water suppliers. Under the regional compliance option, the retail water supplier still has to report the water use target for its individual service area. The bill also includes reporting requirements in the 2010, 2015, and 2020 UWMPs.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989, also known as Assembly Bill (AB) 939, requires that each city or county prepare a new integrated waste management plan. The act further required each city to prepare a Source Reduction and Recycling Element by July 1, 1991. Each Source Reduction and Recycling Element includes a plan for achieving a solid waste goal of 25% by January 1, 1995, and 50% by January 1, 2000. A number of changes to the municipal solid waste diversion requirements under the Integrated Waste Management Act were adopted, including a revision to the statutory requirement for 50% diversion of solid waste. In 2011, AB 341 was passed, requiring the California Department of Resources Recycling and Recovery to require local agencies to include strategies to enable the diversion of 75% of all solid waste by 2020.

Assembly Bill 341

As of July 2012, AB 341 requires all businesses in California to recycle. A business is defined as including any commercial or public entity that generates more than four cubic yards of solid waste per week. The law requires that such businesses source separate their recycling and/or compostable materials and donate or haul the material to recycling facilities.

Local

EMWD Water Conservation Policies (Title 5, Article 6 of the EMWD Administrative Code)

EMWD's water conservation policies, practices, and procedures include the following (EMWD 2016):

- Water use efficiency requirements

- Enforcement through water budget-based tiered rate formulas and landscape efficiency factors
- Penalties for water runoff
- Mandatory water-efficient landscaping requirements

These policies were originally adopted in 1991 and have been periodically modified to provide long-term water reliability for existing and future customers. Water use efficiency requirements include the following:

1. Hosing down driveways and other hard surfaces is prohibited except for health or sanitary reasons.
2. Repair water leaks within 48 hours of occurrence.
3. Irrigate landscape only between 9:00 p.m. and 6:00 a.m. except when:
    - Manually watering
    - Establishing new landscape
    - Temperatures are predicted to fall below freezing
    - Adjusting or repairing an irrigation system, and then only for very short periods of time
4. Unattended irrigation systems using potable water are prohibited unless they are limited to no more than 15 minutes watering per day, per station. This limitation can be extended for very low flow drip irrigation systems when no emitter produces more than 2 gallons of water per hour, or for weather-based controllers or stream rotor sprinklers that meet a 70% efficiency. Run-off or over watering is not permitted in any case.
5. Irrigation systems should operate efficiently and avoid over watering or watering of hardscape and the resulting runoff.
6. Excessive water flow or runoff is prohibited.
7. Decorative fountains must be equipped with a recycling system.
8. Allowing water to run while washing vehicles is prohibited.
9. Install new landscaping with low-water demand trees and plants. New turf shall only be installed for functional purposes.
10. Watering during rain, or within 48 hours after measurable rain, is prohibited.
11. The requirements listed above should be followed at all times.

Riverside Municipal Code, Title 19 Zoning Code, Chapter 19.570 Water Efficient Landscaping and Irrigation

The Water Efficient Landscaping and Irrigation Ordinance outlines landscaping requirements to promote the conservation and efficient use of water. An applicant proposing any new or rehabilitated landscape in the City is required to prepare and submit an application, including a planting plan, irrigation plan, and soils management plan to the Planning Division for review and approval.

Riverside Municipal Code, Title 18 Subdivision Code Drainage Fees

This section of the Municipal Code requires the payment of fees for the construction of drainage facilities as a condition of the division of land. Whenever land that is proposed to be divided lies within the boundaries of an area drainage plan, adopted by resolution of the City Council, a drainage fee in the amount set forth in the adopted plan shall be paid as a condition of approval of the filing of a final map or parcel map, or as a condition of the waiver of the filing of a parcel map.

Riverside Municipal Code, Title 6 Health and Sanitation Code

The Health and Sanitation Code (Title 6, Section 6.04 et seq.) specifies the requirements for handling solid waste and recycling materials.

City of Riverside General Plan 2025

The City's General Plan 2025 has relevant utilities-focused policies that promote water conservation. There are no applicable solid waste policies from the City's General Plan 2025 (City of Riverside 2007b) that apply to the Project.

The following City's General Plan 2025 Public Facilities and Infrastructure Element policies pertain to water supply and are applicable to Project:

Policy PF-1.1 Coordinate the demands of new development with the capacity of the water system.

Policy PF-1.3 Continue to require that new development fund fair-share costs associated with the provision of water service.

Policy PF-1.5 Implement water conservation programs aimed at reducing demands from new and existing development.

Policy PF-1.7 Protect local groundwater resources from localized and regional contamination sources such as septic tanks, underground storage tanks, industrial businesses, and urban runoff.

Riverside County Waste Management Department – Design Guidelines

The Riverside County Waste Management Department (RCWMD) Design Guidelines for Refuse and Recyclables Collection and Loading Areas are intended to assist project proponents in identifying space and other design considerations for refuse/recyclables collection and loading areas per the California Solid Waste Reuse and Recycling Act of 1991. The Design Guidelines require one 4-cubic-yard refuse bin and one 4-cubic-yard recyclables bin per each 20,000 square feet of office, general commercial, or industrial space. Compliance with the Design Guidelines is necessary for obtaining an RCWMD clearance for issuance of a building permit. Prior to building permit issuance, a site plan that indicates the location and capacity of solid waste/recycling collection and loading areas must be submitted to the RCWMD for review and approval (RCWMD 2016).

Riverside County Waste Management Department – Construction and Demolition Recycling

The RCWMD also requires projects that have the potential to generate construction and demolition waste to complete a waste recycling plan to identify the estimated quality and location of recycling of construction and demolition waste from the project. A waste recycling report is then required upon completion of the project that demonstrates that the project recycled a minimum of 50% of its construction and demolition waste (RCWMD 2016).

4.12.3 Thresholds of Significance

The Initial Study/NOP for the Project (Appendix A) found that the Project will result in less than significant impacts to the following utility services. Therefore, these services are not discussed further in this Draft EIR.

- Exceed wastewater treatment requirements of the applicable RWQCB.
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- 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.
- Comply with federal, state, and local statutes and regulations related to solid waste.

The following significance criteria are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) and are used to determine the significance of potential impacts related to water supply and solid waste disposal. Based on the Initial Study prepared for the Project (Appendix A) and Appendix G of the State CEQA Guidelines, a development project could have a significant impact related to water supply or solid waste disposal if the project will:

- Have sufficient water supplies available to serve the project from existing entitlements and resources, or new or expanded entitlements are needed
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs

4.12.4 Project Features that Will Reduce Impacts

Potable Water

- New buildings will meet the California Green Building Standards Code and the minimum standard for certification under the Leadership in Energy and Environmental Design (LEED) rating system for New Commercial Construction, Healthcare, and Major Renovations, as established by the United States Green Building Council, or an equivalent standard. Official certification for individual buildings is strongly encouraged, but not required. Other LEED rating systems or equivalent rating systems are encouraged for specific purposes when applicable, such as the LEED rating system for Multiple Buildings/Campuses. Create water-efficient landscapes in compliance with the City's Water Efficient Landscape and Irrigation Ordinance 19.570.
- Surface parking lots will be landscaped in accordance with City standards to reduce heat island effect.
- Install water-efficient irrigation systems and devices such as soil moisture based irrigation controls and sensors for landscaping according to the City's Water Efficient Landscape and Irrigation Ordinance 19.570.
- Design buildings to be water-efficient. Install water-efficient fixtures and appliances (e.g., Environmental Protection Agency WaterSense labeled products).
- Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Provide education about water conservation and available programs and incentives to the building operators to distribute to employees.

Solid Waste

Construction-Related Solid Waste

The designated Canyon Springs Healthcare Campus operator on the Project site will assign a solid waste management coordinator to execute the Project's City-approved waste management plan. The solid waste management coordinator will work with contractors to estimate quantities of each type of material to be salvaged, recycled, or disposed of as waste; oversee plans for separation of materials; and review procedures for periodic collection and transportation of materials.

4.12.5 Impact Analysis

Threshold UTL-1 Would the Project have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?

As discussed in Section 4.12.1, the Project will be served by EMWD. EMWD has four sources of water supply: imported water purchased from MWD, local potable groundwater, local desalted groundwater, and recycled water. Imported water accounts for approximately 67%, local potable groundwater accounts for approximately 12%, desalted groundwater accounts for approximately 3%, and recycled water accounts for approximately 19% (Appendix O).

A Water Supply Assessment Report was prepared by EMWD to satisfy the requirements under SB 610, Water Code Section 10910 et seq., and SB 221, Government Code Section 66473.7 that adequate water supplies are, or will be, available to meet the water demand associated with the Project (Appendix O).

EMWD used the Riverside County Center for Demographic Research (RCCDR) 2010 Projection to estimate the future population. RCCDR considers land use and land agency information to develop projections. The RCCDR projection has been adopted by the Western Riverside Council of Governments. As evidenced by the population projection, EMWD is located in a developing area. Approximately 40% of EMWD's service area remains undeveloped. As population and the associated water demand increase, EMWD will increase the amount of water imported through MWD to meet demands (Appendix O). Table 4.12-2 shows the projected water demand within the EMWD service area for years 2005 through 2035.

Table 4.12-2
2005–2035 EMWD Service Area Water Demand (AFY)

	Actual		Projected				
	2005	*2010*	*2015*	*2020*	*2025*	*2030*	*2035*
Retail potable water sales	84,900	77,700	113,800	120,700	136,100	150,300	162,200
Water sales to other agencies	29,400	27,100	47,600	61,600	65,000	69,000	72,400
Other water uses/losses	47,300	49,900	52,500	59,100	64,200	66,300	67,600
Total	**161,600**	**154,700**	**213,900**	**241,400**	**265,300**	**285,600**	**302,200**

Source: Appendix O.

The estimated demand for the Project is 216 AFY as shown in Table 4.12-3. The land use considered for the Project area in the 2010 UWMP demand projection was commercial-retail. The estimated demand for the Project exceeds the projected demand accounted for in the 2010 UWMP, and will therefore, exceed the projected demand shown in Table 4.12-2.

Table 4.12-3
Proposed Project Potable Water Demand

Description	Quantity	Demand Factor per Unit	Average Day Demand (gallons per day	Annual Demand (million gallons)	Annual Demand (AFY)
Two-phase acute care hospital	280 beds	98.2/bed	27,496	10.0	31
Hospital (other demands)	5 acres	1,875/acre of land	8,736	3.2	10
Assisted living facility	300 beds*	250/bed	74,990	27.4	84
Age-restricted multifamily	250 beds*	250/bed	62,492	22.9	70
Outpatient services and medical offices	8.49 acres	2,170/acre of land	18,427	6.7	21
Surface/structured parking	1,400 spaces	0	0	0.0	0
		Total	**192,142**	**70.1**	**216**

Source: Appendix O.
Note: The proposed potable water demand calculations are higher in this analysis. The actual number of beds for the independent living/memory care, assisted living, and skilled nursing facility (Site B) will be 290; and the number of units for the senior housing facility (Site A) will be 234.

Mitigation measure **MM-UTL-1** will require the Project developed to meet with EMWD staff to develop a plan of service, detailing water, wastewater, and recycled water requirements to serve the Project. Additionally, mitigation measure **MM-AQ-3** will require the installation of water efficient devices and landscaping. Please refer to Section 4.2, Air Quality, for a description of mitigation measure **MM-AQ-3**.

Implementation of mitigation measures **MM-UTL-1** and **MM-AQ-3** is required to minimize impacts to a less than significant level. As such, impacts will be considered **less than significant with mitigation incorporated.**

Threshold UTL-2: Would the Project be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?

As previously discussed in Section 4.12.1, the City has authorized commercial hauling services to Athens Services, Burrtec, and CR&R Waste Services (City of Riverside 2016). It is not yet known which hauling service will serve the Project for solid waste collection. Regardless of which solid waste hauling service provides these services for the Project, solid waste is collected and taken to the Robert A. Nelson Transfer Station, which is owned by the County of Riverside and operated under a 20-year franchise by Burrtec. Burrtec then transfers the waste to the Badlands Landfill, El Sobrante Landfill, or Lamb Canyon Landfill (City of Riverside 2007a). Table 4.12-1 provides information on the existing landfills and identifies that the three landfills that will serve the Project site have a total combined remaining capacity of 69.1 million tons.

Construction of all phases of the Project will generate construction waste (e.g., concrete rubble, asphalt rubble, wood, and drywall) that will result in an increased demand for solid waste collection and disposal. As stated in Section 4.12.1, the RCWMD will require the completion and submittal of a waste recycling plan to the RCWMD for approval prior to issuance of building permits for the Project site, which will be required as a Condition of Approval and is therefore included as mitigation measure **MM-UTL-2**. The waste recycling plan will identify and estimate the materials to be recycled during construction and demolition activities, and will specify where and how the recyclable materials will be stored on site. A waste recycling report that demonstrates that the Project recycled a minimum of 50% of its construction and demolition waste will then be approved by the RCWMD prior to issuance of occupancy permits.

Table 4.12-4 lists the anticipated solid waste quantities generated at the Project site. Solid waste generation associated with operation of the Project is based on the California Emissions Estimator Model modeling outputs presented in the Canyon Springs Healthcare Campus and Senior Living Greenhouse Gas Analysis (Appendix J).

Table 4.12-4
Proposed Project Anticipated Solid Waste Generation

Land Use	Total Anticipated Solid Waste Generated (tons/year)	Total Anticipated Solid Waste Generated (tons/day)
Congregate care (assisted living) (Site B)	244	0.7
Enclosed parking structure (Site C)	0	0
Hospital (Site C)	818	2.2

Table 4.12-4
Proposed Project Anticipated Solid Waste Generation

Land Use	Total Anticipated Solid Waste Generated (tons/year)	Total Anticipated Solid Waste Generated (tons/day)
Medical office building (Site C)	3,996	10.9
Retirement community (Site A)	108	0.3
Total	**5,166**	**14.1**

Source: Appendix J.

As stated above, all non-hazardous solid waste generated from the Project site (e.g., plastic/glass bottles and jars, paper, newspaper, metal containers, and cardboard) will be recycled per local and state regulations previously mentioned, with a goal of 75%, in compliance with the Integrated Waste Management Act. Remaining non-hazardous solid waste will be disposed of at one of the Riverside County landfills; hazardous waste will be disposed of in compliance with all applicable federal, state, and local laws and is discussed in greater detail in Section 4.6, Hazards and Hazardous Materials, of this EIR. The RCWMD will review building plans and ensure that proper space is set aside to allow for the collection and storage of recyclable materials prior to issuance of building permits, which has been included as mitigation measure **MM-UTL-3**, to ensure that there is adequate space for recycling on the Project site.

If a recycling rate of 75% is assumed, per compliance with the Integrated Waste Management Act, then the Project will send approximately 4 tons per day to an area landfill. This amount represents approximately 0.02% of the total maximum permitted capacity (26,054 tons/day) of the three local landfills listed in Table 4.12-1. Therefore, the amount of solid waste generated and disposed of in nearby landfills during operation of the Project is expected to be within the permitted capacity of the landfills. With recycling required by RCWMD implemented during construction and operation of the Project, potential impacts associated with solid waste capacity will be considered less than significant. However, incorporation of mitigation measures **MM-UTL-2** and **MM-UTL-3**, requiring the preparation of a recycling plan and subsequent review of building plans by the City, will ensure adequate space is allotted for recycling on site. As such, impacts are considered to be **less than significant with mitigation incorporated.**

4.12.6 Mitigation Measures

Section 15126.4 of the State CEQA Guidelines requires EIRs to describe feasible measures that can minimize significant adverse impacts. The following mitigation measures are included to ensure a potable water service plan and waste recycling plans are prepared and water use is minimized:

MM-UTL-1 The developer/applicant of the Project shall be required to meet with Eastern Municipal Water District (EMWD) staff to develop a plan of service, which shall detail water, wastewater, and recycled water requirements to serve the Project.

MM-UTL-2 Prior to issuance of building permits, the developer/applicant shall complete a Construction Waste Recycling Plan and submit the plan to the Riverside County Waste Management Department (RCWMD) for approval. The plan shall identify and estimate the materials to be recycled during construction and demolition activities and shall specify where and how the recyclable materials will be stored on the Project site. Compliance with the plan shall be a requirement in all construction contracts. The RCWMD-approved plan shall be attached to all construction plans and distributed to all construction contractors. Once construction is complete, the developer/applicant shall be responsible for preparing a Waste Recycling Report that demonstrates that the Project recycled a minimum of 50% of its construction and demolition waste. The waste recycling report must be submitted to, and approved by, the RCWMD prior to issuance of occupancy permits.

MM-UTL-3 Prior to issuance of building permits, the developer/applicant shall submit building plans to the Riverside County Waste Management Department (RCWMD) and obtain approval from the RCWMD for compliance with the Riverside County Design Guidelines for Refuse and Recyclables Collection and Loading Areas, which include specifications for recyclable storage space, location and access, signage, protection and security, compatibility, and overall compliance with federal, state, and local laws.

Mitigation measure **MM-AQ-3** will reduce impacts to water consumption to a level below significance. Please refer to Section 4.1, Air Quality, for a description of mitigation measure **MM-AQ-3**.

4.12.7 Environmental Impacts after Mitigation is Incorporated

Since the mitigation measures identified above require coordination with EMWD, the installation of water-efficient devices and landscaping and the preparation and submittal of plans that outline and provide for the recycling of construction and operation waste will reduce impacts related to water supply and solid waste. As a result, impacts remaining after mitigation are considered **less than significant**.

4.12.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

33 U.S.C. Section 1251–1387. Federal Water Pollution Control Act, as amended (commonly referred to as the Clean Water Act).

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CalRecycle. 2016b. Facility/Site Summary Details: El Sobrante Landfill (33-AA-0217). Accessed July 2016. http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0217/Detail/.

CalRecycle. 2016c. "Facility/Site Summary Details: Lamb Canyon Sanitary Landfill (33-AA-0007)." Accessed June 2017. http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0007/Detail/.

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City of Riverside. 2007b. *City of Riverside General Plan 2025*. Adopted November 2007. Riverside, California: City of Riverside Community Development Department. Accessed August 27, 2013. http://www.riversideca.gov/planning/gp2025program/general-plan.asp.

City of Riverside. 2016. Trash and Recycling: Authorized Haulers. http://www.riversideca.gov/publicworks/trash/Authorized-Haulers.asp.

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SWRCB (State Water Resource Control Board). 2013. Recycled Water Policy. Modified January 22, 2013. http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/2013/rs2013_0003_a.pdf.

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4.13 ENERGY CONSERVATION

The following discussion and analysis is based on the State California Environmental Quality Act (CEQA) Guidelines, Section 15126.4, and Appendix F of the State CEQA Guidelines, which require that environmental impact reports (EIRs) include a discussion of the potential energy impacts of projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (14 CCR 15000 et seq.). The section is also related to the potential impacts to energy consumption, including electricity, natural gas, and gasoline, from implementation of the proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan Project (Project).

The City of Riverside (City) has not established local CEQA significance thresholds as described in State CEQA Guidelines Section 15064.7. The State CEQA Guidelines provide no specific thresholds for impacts associated with energy consumption. However, Appendix F of the State CEQA Guidelines (14 CCR 15000 et seq.) provides guidance for evaluating whether a development project may result in significant impacts with regard to energy. The Initial Study (Appendix A) did not scope out any of the issues related to energy conservation, and therefore, the three thresholds related to energy conservation are analyzed in this Draft EIR.

4.13.1 Setting

According to the U.S. Energy Information Administration (EIA 2015), California ranked 48th for energy consumption in 2013, likely because of California's mild climate. By sector, transportation-related uses account for 38.7% of the state's energy, followed by 24.4% from industrial uses, 18.6% from commercial uses, and 18.3% from residential land uses (EIA 2015).

Energy sources are classified as nonrenewable if they cannot be replenished in a short period of time. Therefore, nonrenewable energy resources include fossil fuels. Fossil fuels, which consist of oil, coal, and natural gas and associated byproducts, provide the energy required for the vast majority of motorized vehicles and generation of electricity at power plants. Thus, the discussion of energy conservation most relevant to the Project is focused on Project-generated electricity demand, natural gas demand, and fuel consumption.

Electricity

According to the California Energy Commission's (CEC's) Tracking Progress Statewide Energy Demand (CEC 2016a), California used approximately 280,536 gigawatts per hour of electricity in 2014. Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Because of the state's energy efficiency standards and efficiency and conservation programs, California's per-capita energy use has remained stable for more than 30 years, while the national average has steadily increased.

Electrical service in most of the City is provided by the City-owned Public Utilities Department. Southern California Edison generally serves customers outside of the City limits. The City's electric service system, established in 1895, includes almost 90 miles of transmission lines and over 1,000 miles of distribution lines. The Riverside Public Utilities Department has provided power to residential and business customers for over one hundred years. As of 2006, the largest proportion (68%) of the local electrical supply was generated from the burning of coal, followed by nuclear power (13%) and natural gas combustion and hydroelectric (3% each). Renewable energy sources, including geothermal, wind, biomass/waste, small-scale hydroelectric and solar power, account for 12% (City of Riverside 2007a).

Existing electrical lines located along Gateway Drive, Valley Springs Parkway, Corporate Center Place, Canyon Park Drive, and Day Street would serve the Project.

Natural Gas

One third of energy commodities consumed in California is natural gas and mainly falls into four sectors: residential, commercial, industrial, and electric power generation. In addition, natural gas is a viable alternative to petroleum for use in cars, trucks, and buses (CEC 2016b). According to the U.S. Energy Information Administration, California used approximately 2.382 quadrillion British thermal units (BTU) of natural gas in 2015 (EIA 2017). By sector, industrial uses utilized approximately 35.8% of the state's natural gas, followed by approximately 35.0% from electric power, approximately 17.5% from residential uses, approximately 10.3% from commercial uses, and approximately 1.5% from transportation uses (EIA 2017).

Southern California Gas Company (SoCalGas) provides natural gas service for residential, commercial, and industrial uses in the City. SoCalGas purchases natural gas from several bordering states. Interstate pipelines that currently serve California include El Paso Natural Gas Company, Kern River Transmission Company, Mojave Pipeline Company, Gas Transmission Northwest, Transwestern Pipeline Company, Southern Trails Pipeline, and Tuscarora Pipeline. Most of the major natural gas transmission pipelines within the City are owned and operated by SoCalGas. The California Public Utilities Commission regulates SoCalGas, which is the default provider required by state law, for natural gas delivery to the City. SoCalGas has the capacity and resources to deliver gas except in certain situations that are noted in state law. As development occurs, SoCalGas will continue to extend its service to accommodate development and supply the necessary gas lines. SoCalGas does not base its service levels on the demands of the City; rather it makes periodic upgrades to provide service for particular projects and new development. SoCalGas is continuously expanding its network of gas pipelines to meet the needs of new commercial and residential developments in Southern California (City of Riverside 2007b).

Existing natural gas lines located along Gateway Drive, Valley Springs Parkway, Corporate Center Place, Canyon Park Drive, and Day Street would serve the Project.

Petroleum

According to the U.S. Energy Information Administration, California used approximately 629.5 million barrels of petroleum in 2014 (EIA 2016). By sector, industrial uses utilize 12.5% of the state's petroleum, followed by 0.6% from residential uses, 0.9% from commercial uses, 86.0% from transportation uses, and 0.02% for electric power generation (EIA 2016). In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. According to the *2014 Integrated Energy Policy Report*, petroleum-based fuels accounted for about 92% of the U.S. transportation fuel use in 2013 (CEC 2015). From January 2011 to June 2014, the production of crude oil in the United States increased from 5.5 million barrels per day in January 2011 to 8.7 million barrels per day by June 2014, an increase of 3.2 million barrels per day (CEC 2015). California has enacted an aggressive array of policies for petroleum use, such as reducing petroleum fuel use in California to 15% below 2003 levels by 2020, providing 36 billion gallons of renewable fuel by 2022, and accommodating one million electric vehicles by 2020 and 1.5 million electric vehicles by 2025 in California (CEC 2015).

4.13.2 Relevant Regulations, Plans, Policies, and Ordinances

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which grants specific authority to the president of the United States to fulfill obligations of the United States under the international energy program; provide for the creation of a Strategic Petroleum Reserve capable of reducing the impact of severe energy supply interruptions; conserve energy supplies through energy conservation programs; provide for improved energy efficiency of motor vehicles, major appliances, and other consumer products; provide a means for verification of energy data to ensure the reliability of energy data; and to conserve water by improving the water efficiency of certain plumbing products and appliances. Further, the Energy Policy and Conservation Act established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards. The NHTSA has set new fuel economy standards that are estimated to require a combined passenger car and light truck average fuel economy level of 34.1 mpg by 2016 (NHTSA 2010). It should be noted that heavy-duty vehicles (i.e., vehicles

and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

On the basis of the information generated under the program, the U.S. Department of Transportation is authorized to assess penalties for noncompliance. In the course of over a 30-year history, this regulatory program has resulted in vastly improved fuel economy throughout the United States' vehicle fleet, and also has protected against inefficient, wasteful, and unnecessary use of energy.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act (EISA) of 2007 was signed into law. In addition to setting increased corporate average fuel economy (CAFE) standards for motor vehicles, the act includes other provisions related to energy efficiency:

- Renewable fuel standard (RFS) (Section 202)
- Appliance and lighting efficiency standards (Sections 301–325)
- Building energy efficiency (Sections 411–441).

This federal legislation requires ever-increasing levels of renewable fuels to replace petroleum (Section 202, RFS). The U.S. Environmental Protection Agency (EPA) is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under EISA, the RFS program was expanded in several key ways that laid the foundation for achieving significant reductions of greenhouse gas (GHG) emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of our nation's renewable fuels sector. The updated program is referred to as RFS2 and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline;
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;

- EISA established new categories of renewable fuel, and set separate volume requirements for each one; and
- EISA required the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces (EPA 2013).

Additional provisions of EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

EPA and NHTSA Joint Final Rule for Vehicle Standards

The EPA and NHTSA announced a joint final rule to establish a national program consisting of new standards for light-duty vehicles model years 2012 through 2016 (April 2010) that is intended to reduce GHG emissions and improve fuel economy. The EPA approved the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA approved CAFE standards under the Energy Policy and Conservation Act, which became effective on July 6, 2010 (75 FR 25324–25728).

The EPA's GHG standards require new passenger cars, light-duty trucks, and medium-duty passenger vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO_2) per mile in model year 2016. The CAFE standards for passenger cars and light trucks were phased in between 2012 and 2016. The rules will simultaneously reduce GHG emissions, improve energy security, increase fuel savings, and provide clarity and predictability for manufacturers (EPA 2013). In August 2012, the EPA and NHTSA approved a second round of GHG and CAFE standards for model years 2017 and beyond (77 FR 62624–63200). These standards will reduce motor vehicle GHG emissions for cars and light-duty trucks by model year 2025.

State

Title 24 of the California Code of Regulations

Energy consumption by new buildings in California is regulated by the State Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations (CCR). The efficiency standards apply to new construction of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in Title 24 guidelines.

It should be noted that some of the hospital facility components of the Project are not generally subject to the energy efficiency requirements applied to other nonresidential building types specified in Title 24.

Senate Bill 1368

On September 29, 2006, Governor Arnold Schwarzenegger signed into law Senate Bill 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the state's utilities to power plants that meet an emissions performance standard jointly established by the CEC and the California Public Utilities Commission.

The CEC has designed regulations that:

- Establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 pounds CO_2 per megawatt-hour (MWh). This will encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of GHGs;
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This will facilitate public awareness of utility efforts to meet customer needs for energy over the long term while meeting the state's standards for environmental impact; and
- Establish a public process for determining the compliance of proposed investments with the EPS [emissions performance standard] (Perata, Chapter 598, Statutes of 2006).

Assembly Bill 1493

Adopted in 2002 by the state legislature, Assembly Bill 1493 ("Pavley" regulations) required that the California Air Resources Board (CARB) develop and adopt, no later than January 1, 2005, regulations to achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles.

The first California request to implement GHG standards for passenger vehicles, known as a waiver request, was made in December 2005 and was initially denied by the EPA in March 2008. That decision was based on a finding that California's request to reduce GHG emissions from passenger vehicles did not meet the Clean Air Act requirement of showing that the waiver was needed to meet "compelling and extraordinary conditions."

The EPA granted California the authority to implement GHG emission reduction standards for new passenger cars, pickup trucks, and sport utility vehicles on June 30, 2009. On September 24, 2009, CARB adopted amendments to the Pavley regulations that reduce GHG

emissions in new passenger vehicles from 2009 through 2016. These amendments are part of California's commitment to a nationwide program to reduce new passenger vehicle GHGs from 2012 through 2016. CARB's September 2009 amendments will allow for California's enforcement of the Pavley rule while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to harmonize its rules with the federal rules for passenger vehicles.

Pavley regulations reduced GHG emissions from California passenger vehicles by about 22% in 2012. It is expected that Pavley regulations will reduce GHG emissions from California passenger vehicles by about 30% in 2016, all while improving fuel efficiency and reducing motorists' costs.

CARB has adopted a new approach to passenger vehicles—cars and light trucks—by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California (CARB 2013).

Renewables Portfolio Standard

In 2002, California enacted legislation that requires investor-owned utilities and other electric service providers to procure at least 20% of retail electricity supplies from eligible renewable energy sources by 2017 and 33% by 2020. Utilities are required to disclose to consumers "accurate, reliable, and simple to understand information on the sources of energy that are being used" (Public Utilities Code Section 398.1 (b)).

Local

City of Riverside General Plan 2025

The *City of Riverside General Plan 2025* sets forth objectives and policies to promote minimizing the use of energy and instead generate electricity from renewable resources to ensure plentiful future supply and reducing the negative impacts on the environment (City of Riverside 2007). Specifically, the Open Space and Conservation Element focuses on conserving, among other items, energy resources. In addition, the Public Facilities and Infrastructure Element addresses energy conservation efforts and policies by the City and Riverside Public Utilities. The City's efforts to promote cleaner, green sources of energy can be traced back to the 1970s. Reducing energy usage through efficiency and utilizing renewable sources represents the most environmentally sound and cost-effective way to limit the negative consequences of consuming non-renewable energy resources and to protect the reliability of the electric power grid to ensure that adequate power is available to all residents, businesses, and institutions. The relevant City

General Plan (General Plan 2025) objective and policies, which are intended to conserve energy in the City, are discussed below.

Open Space and Conservation Element (OS)

Objective OS-8: Encourage the efficient use of energy resources by residential and commercial users.

Policy OS-8.1: Support the development and use of non-polluting, renewable energy sources.

Policy OS-8.2: Require incorporation of energy conservation features in the design of all new construction and substantial rehabilitation projects pursuant to Title 24, and encourage the installation of conservation devices in existing developments.

Policy OS-8.3: Encourage private energy conservation programs that minimize high energy demand and that use alternative energy sources.

Policy OS-8.4: Incorporate solar considerations into development regulations that allow existing and proposed buildings to use solar facilities.

Policy OS-8.5: Develop landscaping guidelines that support the use of vegetation for shading and wind reduction and otherwise help reduce energy consumption in new development for compatibility with renewable energy sources (i.e., solar pools).

Policy OS-8.6: Require all new development to incorporate energy efficient lighting, heating and cooling systems pursuant to the Uniform Building Code and Title 24.

Policy OS-8.7: Encourage mixed use development as a means of reducing the need for auto travel.

Policy OS-8.9: Encourage construction and subdivision design that allows the use of solar energy systems.

Policy OS-8.10: Support the use of public transportation, bicycling and other alternative transportation modes in order to reduce the consumption of non-renewable energy supplies.

Policy OS-8.11: Support public education programs for City residents and businesses to provide information on energy conservation and on alternative to nonrenewable energy resources.

Policy OS-8.12: Require bicycle parking in new non-residential development.

Public Facilities and Infrastructure Element (PF)

Policy PF-6.1: Continue to support the development of green power and expand the use of green power in the City's energy portfolio.

Policy PF-6.3: Promote and encourage energy conservation.

Policy PF-6.4: Encourage energy-efficient development through its site plan and building design standard guidelines.

Policy PF-6.5: Promote green building design.

Riverside Green Action Plan

The City is committed to becoming a clean, green, and sustainable community. In 2007, the City Council approved the Sustainable Riverside Policy Statement, which was framed by the City's Clean and Green Task Force. The statement included a practical emphasis on how the City could implement cleaner, greener, and more sustainable programs. The City's first Green Action Plan, a 38-point plan, identified 8 focus areas: Energy, Greenhouse Gas Emissions, Waste Reduction, Urban Design, Urban Nature, Transportation, Water, and Healthy Communities (City of Riverside 2012). The Green Action Plan was completed in 2009 and updated in 2012 when the California Department of Conservation chose the City as the first "Emerald City." In all, the Green Action Plan encompasses 19 goals with specific associated tasks. The relevant focus areas and goals to which the Project will beneficially contribute are discussed below.

<u>Energy</u>

Goal 1: Increase the use of non-greenhouse gas emitting energy by 2020 to 50 percent with at least 33 percent coming from renewable sources.

Goal 2: Save 1 percent of communities load annually based on a 2004 baseline, and reduce the City's peak electrical load demand by 10 percent overall.

Waste Reduction

Goal 6: Implement programs to reduce waste, based on the 2007 per capita baseline, by 75 percent by 2020.

Goal 7: Implement educational programs throughout the community to encourage green practices.

Urban Design

Goal 9: Meet the environmentally sensitive goals of the General Plan 2025 specified in the Mitigation Monitoring Program of the Environmental Impact Report, and the Implementation Plan following the timelines set forth in each.

4.13.3 Thresholds of Significance

The City has not established local CEQA significance thresholds as described in State CEQA Guidelines Section 15064.7. The State CEQA Guidelines provide no specific thresholds for impacts associated with energy consumption. However, Appendix F of the State CEQA Guidelines (14 CCR 15000 et seq.) provides guidance for evaluating whether a development project may result in significant impacts with regard to energy. Appendix F, Section II C, provides suggestions of the environmental impact areas associated with energy consumption that could be assessed as part of and EIR:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials maybe discussed.
- The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the project on peak and base period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

Three thresholds have been developed to assess the six areas above, with the exception of item 3.[1] Based on Appendix F, significant impact on energy conservation will occur if the Project will:

- **EC-1.** Result in wasteful, inefficient, or unnecessary consumption of energy
- **EC-2.** Conflict with existing energy standards and regulations
- **EC-3.** Place a significant demand on local and regional energy supplies or require a substantial amount of additional capacity.

4.13.4 Project Features That Will Reduce Impacts

As discussed in Section 6, Public Utilities and Services, of the Canyon Springs Healthcare Campus Specific Plan (Specific Plan), in an effort to become a more sustainable hospital campus, Canyon Springs will take into consideration the following sustainable features:

Energy Efficiency

- Design building shells and components, such as windows, roof systems, and electrical systems, to meet California Title 24 Standards for nonresidential buildings.
- Install efficient lighting and lighting control systems. Solar or light-emitting diodes (LEDs) will be installed for outdoor lighting. The site and buildings will be designed to take advantage of daylight, such that use of daylight is an integral part of the lighting systems in buildings. Lighting will incorporate motion sensors that turn them off when not in use.
- Use trees and landscaping on east, west, and south exterior building walls to reduce energy use.
- Install light colored "cool" roofs over office area spaces and cool pavements.
- For future office improvement, install energy-efficient heating and cooling systems, appliances and equipment, and control systems that are Energy Star-rated.
- For future office improvement, refrigerants and HVAC equipment will be selected to minimize or eliminate the emission of compounds that contribute to ozone depletion and global warming. Ventilation and HVAC systems will be designed to meet or exceed the minimum outdoor air ventilation rates described in the American Society of Heating, Refrigeration, and Air Conditioning Engineers standards and/or per California Title 24 requirements.

[1] Item 3 cannot be assessed since peak and base period demands are not available.

- Provide vegetative or human-made exterior wall shading devices or window treatments for east, south, and west-facing walls with windows.
- Incorporate Energy Star-rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.

Renewable Energy

- Design buildings to have "solar ready" roofs, where feasible, that will structurally accommodate later installation of rooftop solar panels. Building operators providing rooftop solar panels will submit plans for solar panels prior to occupancy.

Water Conservation and Efficiency

- Create water-efficient landscapes in compliance with the City's Water Efficient Landscape and Irrigation Ordinance 19.570.
- Surface parking lots will be landscaped in accordance with City standards to reduce heat island effect.
- Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls and sensors for landscaping according to the City's Water Efficient Landscape and Irrigation Ordinance 19.570.
- Design buildings to be water efficient. Install water-efficient fixtures and appliances (e.g., EPA WaterSense-labeled products).
- Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Provide education about water conservation and available programs and incentives to the building operators to distribute to employees.

Solid Waste Measures

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.
- The property operator will provide readily available information provided by the City for employee education about reducing waste and available recycling services.

The Canyon Springs energy and water conservation standards will meet the California Green Building Standards Code (Part 11 of Title 24, CCR), the EPA Energy Policy Act of 2005, and Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management) requirements.

Transportation and Motor Vehicles

As discussed in Section 5, Circulation, of the Specific Plan, transportation demand management (TDM) is a strategy design to reduce single-occupancy vehicle trips during peak hours. TDM seeks to shift commuters to transportation modes other than cars, and encourage ride-sharing and carpooling programs. The Specific Plan incorporates the following TDM measures:

- Canyon Springs Healthcare will implement two ride-sharing rewards programs in coordination with Inland Empire Transit. Both programs are promoted through informational flyers and at new hire orientation. A TDM coordinator shall be designated by the hospital operator or another party operating within the Canyon Springs Healthcare Campus to facilitate the distribution of information and make sure it remains current.
    - 2 Dollars/Day Program: Participants log their modes of commuting for 3 months and are awarded points for using alternative modes of transportation, such as the Metrolink, bus, bike routes, and carpooling. The program enables employees to connect for carpools. At the end of the 3-month period, participants are awarded gift cards based on the points accrued.
    - Ride-Share Plus Program: Participants are provided with tools for carpooling, bicycling, and other alternative modes of transportation. Participants in this program have usually completed the 2 Dollars/Day Program and continue to log hours to accumulate rewards, such as a coupon book (valued at $1,000). The coupon book offers savings at local businesses as well as the ability to register the coupon book online to access discounts at more than 135,000 merchants nationwide.

The City's TDM Regulations (City of Riverside 2007c, Chapter 19.880) provide regulations to protect the public health, safety, and welfare by reducing air pollution caused by vehicle trips and vehicles miles traveled. In addition to the current ride-sharing and carpooling programs, the Project will incorporate the following transportation demand measures to help achieve the required vehicle-reduction targets:

- Provide up to three electric vehicle charging facilities to encourage the use of low or zero-emission vehicles.
- Preferential parking for carpool vehicles. Designate parking for 10 or more vehicular parking spaces, for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.2.2 of CalGreen Building Code Division 5.1.

- Bicycle parking per the CalGreen Code Standards and shower facilities for employees.
- Local transportation management and roadway improvements.
- On-site amenities such as cafeterias, restaurants, automated teller machines and other services that would eliminate the need for additional trips.

4.13.5 Impact Analysis

Threshold EC-1: Would the Project result in wasteful, inefficient, or unnecessary consumption of energy?

Implementation of the Project will increase the demand for electricity and natural gas at the Project site and gasoline consumption in the region during construction and operation.

Electricity

The construction phase will require electricity for the manufacture and transportation of building materials, preparation of the site, and construction of the buildings and infrastructure. The operational phase will require electricity for multiple purposes including, but not limited to, building heating and cooling, lighting, appliances, electronics, and hospital equipment.

Table 4.13-1 presents the electricity usage for the year 2016 (Appendix H).[2] Electricity consumption associated with the Project is based on the California Emissions Estimator Model (CalEEMod) outputs presented in the *Canyon Springs Healthcare Campus & Senior Living Greenhouse Gas Analysis* (Appendix H).[3] Electricity consumption rates were customized to adjust for Title 24 requirements rather than using default electricity consumption rates in the South Coast Air Quality Management District. Title 24 Electricity Energy Intensity was adjusted by 21.8%, to reflect 2013 Title 24 (CEC 2013).

[2] As indicated in the *Canyon Springs Healthcare and Senior Living Supplemental AQ and GHG Memo* included in Appendix H, the Air Quality and Greenhouse Gas Technical Reports prepared by Urban Crossroads for the Project commenced in year 2015, and at that time, assumed Project operations would initiate in 2016. CalEEMod (version 2013) was also the model available at that time, whereas the updated CalEEMod (version 2016) has since been released. Although the 2016 opening year is no longer possible, the underlying technical calculations using the 2016 opening year are conservative and would overstate rather than understate the potential impacts of the Project, since emissions are generally reduced as the analysis year increases based on the natural turnover of older equipment and vehicles being replaced with newer, less polluting ones. Similarly, the underlying energy demand calculations are based on the 2013 Title 24 standards, which were in effect at the time, and would be reduced based on the most current 2016 Title 24 standards that became effective January 1, 2017. As such, the emissions and energy calculations in the Urban Crossroads 2016 Air Quality and Greenhouse Gas Technical Reports incorporated herein, are conservative, overstate potential impacts, and do not require additional analysis.

[3] The air quality and GHG analysis for this Project assumed a Project buildout year of 2016 as a worst-case analysis.

Table 4.13-1
Project Anticipated Electricity Consumption (Year 2016)

Land Use	Total Anticipated Electricity Consumption (kilowatt hours/year)
Congregate Care (Assisted Living)	996,674
Enclosed Parking Structure	6,753,360
Hospital	8,663,760
Medical Office Building	3,651,900
Senior Housing	1,102,870
Total	**21,168,564**

Source: Appendix H.

According to these estimations, the Project would consume approximately 21,168,564 kilowatt hours per year during project operation.

Natural Gas

Natural gas would be consumed throughout construction and operation of the Project. Energy would be required during construction for the production of building materials and construction of buildings and infrastructure. Natural gas consumption during construction would be required for various purposes, including, but not limited to, building heating and cooling. Natural gas consumption would also be attributed to boilers.

Table 4.13-2 presents the natural gas usage for the year 2016 (Appendix H).[4] Natural gas consumption associated with the Project is based on the CalEEMod outputs presented in the *Canyon Springs Healthcare Campus & Senior Living Greenhouse Gas Analysis* (Appendix H). Natural gas consumption rates were customized to adjust for Title 24 requirements rather than using default natural gas consumption rates in the South Coast Air Quality Management District. Title 24 Natural Gas Energy Intensity was adjusted by 16.8%, to reflect 2013 Title 24 (CEC 2013).

[4] As indicated in the *Canyon Springs Healthcare and Senior Living Supplemental AQ and GHG Memo* included in Appendix H, the Air Quality and Greenhouse Gas Technical Reports prepared by Urban Crossroads for the Project commenced in year 2015, and at that time, assumed Project operations would begin in 2016. CalEEMod (version 2013) was also the model available at that time, whereas the updated CalEEMod (version 2016) has since been released. Although the 2016 opening year is no longer possible, the underlying technical calculations using the 2016 opening year are conservative and would overstate rather than understate the potential impacts of the Project, since emissions are generally reduced as the analysis year increases based on the natural turnover of older equipment and vehicles being replaced with newer, less polluting ones. Similarly, the underlying energy demand calculations are based on the 2013 Title 24 standards, which were in effect at the time, and would be reduced based on the most current 2016 Title 24 standards that became effective January 1, 2017. As such, the emissions and energy calculations in the Urban Crossroads 2016 Air Quality and Greenhouse Gas Technical Reports incorporated herein, are conservative, overstate potential impacts, and do not require additional analysis.

Table 4.13-2
Project Anticipated Natural Gas Consumption (Year 2016)

Land Use	Total Anticipated Electricity Consumption (kilo-British Thermal Units /year)
Congregate Care (Assisted Living)	2,744,150
Enclosed Parking Structure	0
Hospital	32,326,600
Medical Office Building	1,124,800
Senior Housing	4,127,660
Boilers	50,000,000
Total	**90,323,210**

Source: Appendix H.

According to these estimations, the Project would consume approximately 90,323,210 kilo-British Thermal Units per year during operation.

Petroleum

Petroleum would be consumed throughout construction and operations of the Project. Energy would be required during construction for the transportation of building materials and construction of buildings and infrastructure. Gasoline and diesel use would account for the vast majority of construction-period energy needs. During operations, the majority of fuel consumption resulting from the Project would involve the use of motor vehicles traveling to and from the Project site.

Petroleum fuel consumption associated with the Project is a function of the vehicle miles traveled as a result of Project construction and operations. As discussed in Sections 4.2, Air Quality; 4.5, Greenhouse Gas Emissions; and 4.11, Transportation and Traffic, the analysis has estimated the number of trips associated with the Project which would result in additional fuel consumption and energy use associated with transportation. According to the traffic impact analysis (included as Appendix L), the Project would result in 18,528 trip ends.

Statewide emission reduction measures proposed in the CARB-adopted amendments to the Pavley regulations include measures aimed at reducing GHG emissions associated with transportation. These amendments are part of California's commitment to a nationwide program to reduce new passenger vehicle GHGs from 2012 through 2016. Pavley regulations reduced GHG emissions from California passenger vehicles by about 22% in 2012. It is expected that Pavley regulations will reduce GHG emissions from California passenger vehicles by about 30% in 2016, all the while improving fuel efficiency and reducing motorists' costs. In response to Senate Bill 375, CARB has adopted the goal of reducing per-capita GHG emissions from 2005 levels by 8% by the year 2020 and 13% by the year 2035 for light-duty passenger vehicles in the Southern California Association of Governments planning area. This reduction

would occur by reducing vehicle miles traveled through the integration of land use planning and transportation (SCAG 2012). As such, vehicle trips associated with the Project are expected to use less petroleum due to advances in fuel economy over time.

CARB has adopted a new approach to passenger vehicles—cars and light trucks—by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California (CARB 2013).

The Canyon Springs Healthcare Campus will incorporate TDM measures, as mentioned above and included in the Specific Plan, in order to help achieve the required vehicle reduction targets from the City's TDM Regulations.

There are no statewide mandatory energy requirements for hospitals, as these occupancies are exempt from Title 24, Part 6, of the California Code of Regulations. Title 24, Part 6 would be applicable to other land uses associated with the Project, including but not limited to the senior facility and medical office building. To ensure that the Project does not result in wasteful, inefficient, or unnecessary consumption of electricity or natural gas, the implementation of mitigation measure **MM-AQ-2** would require that the proposed facilities are designed to achieve 5% efficiency beyond the 2016 California Building Code Title 24 requirements for nonresidential uses. In addition, to reduce electricity consumption associated with water usage, **MM-AQ-3** would be implemented. To reduce vehicle miles traveled and petroleum consumption, the implementation of mitigation measure **MM-AQ-4** would require that pedestrian and bicycle connections be provided to surrounding areas consistent with the City's General Plan 2025. Please refer to Section 4.2, Air Quality, for a description of mitigation measures **MM-AQ-2**, **MM-AQ-3**, and **MM-AQ-4**.

Upon implementation of mitigation measures **MM-AQ-2**, **MM-AQ-3**, and **MM-AQ-4**, the Project will not contribute to inefficient or wasteful consumption of electricity, natural gas, or petroleum, and impacts will be **less than significant with mitigation incorporated**. No further mitigation is required.

Threshold EC-2: Would the Project conflict with existing energy standards and regulations?

There are no statewide mandatory energy requirements for hospitals, as these occupancies are exempt from Title 24, Part 6, of the CCR. Title 24, Part 6 would be applicable to other land uses associated with the Project, including but not limited to the senior facility and medical office building. As discussed under Threshold EC-1, the Project will result in demand for electricity, natural gas, and petroleum. Implementation of mitigation measure **MM-AQ-2** would require that the proposed facilities are designed to achieve 5% efficiency beyond the

2016 California Building Code Title 24 requirements for nonresidential uses. Please refer to Section 4.2, Air Quality, for a description of mitigation measure **MM-AQ-2**.

Upon implementation of mitigation measure **MM-AQ-2**, the Project will voluntarily reduce energy consumption beyond what is required by the state and will also be consistent with existing energy standards and regulations. Therefore, impacts related to a conflict with existing energy standards and regulations will be **less than significant with mitigation incorporated** (**MM-AQ-2**). No further mitigation is required.

Threshold EC-3: Would the project place a significant demand on local and regional energy supplies or require a substantial amount of additional capacity?

As discussed under Thresholds EC-1 and EC-2, the Project will result in an increased demand for electricity, natural gas, and petroleum.

The City receives electricity primarily from Riverside Public Utilities, Electric Division. According to the Final Program EIR for the City's General Plan 2025 (Final General Plan 2025 PEIR), Riverside Public Utilities' annual power usage was 1,962,000 MWh for the 2004–2005 fiscal year (City of Riverside 2007b). Typical electrical energy use for the year 2025, upon buildout of the General Plan, would be approximately 4,824,478 MWh per year for the entire City, including unincorporated communities north and south of the City. According to CalEEMod estimates (Appendix H), implementation of the Project will result in an electricity demand of 21,169 MWh per year, which is 0.44% of the City's estimated energy use for 2025. Therefore, the Project will not significantly exceed energy demands as projected by the City's Final General Plan 2025 PEIR (City of Riverside 2007b). However, to ensure that the Project will not result in wasteful, inefficient, or unnecessary consumption of electricity, implementation of mitigation measure **MM-AQ-2** would require that the proposed facilities are designed to achieve 5% efficiency beyond the 2016 California Building Code Title 24 requirements for nonresidential uses. In addition, to reduce electricity consumption associated with water usage, mitigation measure **MM-AQ-3** would be implemented. Please refer to Section 4.2, Air Quality, for a description of mitigation measures **MM-AQ-2** and **MM-AQ-3**.

SoCalGas is the main provider of natural gas to the City. According to the City's Final General Plan 2025 EIR, typical natural gas usage for the year 2025, upon buildout of the General Plan, would be a net increase of approximately 41.39 million cubic feet per day, or 15.107 trillion BTU per year from existing natural gas usage for the entire City including unincorporated communities north and south of the City (City of Riverside 2007b). According to CalEEMod estimations (Appendix H), the implementation of the Project will result in a natural gas demand of 90,323 million BTU per year, which is 0.60% of the City's estimated energy use for 2025. Therefore, the Project will not exceed demands as projected by the City's Final General Plan 2025 PEIR (City of Riverside 2007b). However, to ensure that the Project will not result in wasteful, inefficient, or unnecessary

consumption of natural gas, implementation of mitigation measure **MM-AQ-2** would require that the proposed facilities are designed to achieve 5% efficiency beyond the 2016 California Building Code Title 24 requirements for non-residential uses. Please refer to Section 4.2, Air Quality, for a description of mitigation measure **MM-AQ-2**.

According to the Project's traffic impact analysis (Appendix L), upon buildout of the Project, a total of 18,528 trip ends will be generated. Vehicles traveling to and from the Project site would be the primary source of petroleum consumption. It was expected that the Pavley regulations will reduce GHG emissions from California passenger vehicles by about 30% in 2016, which can be attributed to improvements in fuel efficiency. As a result of these regulations, CARB has adopted a new approach to passenger vehicles—cars and light trucks—by including efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California (CARB 2013). Although the Project would see an increase in vehicle trips, vehicles associated with the Project are expected to use less petroleum due to advances in fuel economy over time.

The Canyon Springs Healthcare Campus will incorporate TDM measures, as mentioned above and included in the Specific Plan, in order to help achieve the required vehicle reduction targets from the City's TDM Regulations. To reduce vehicle miles traveled and petroleum consumption, implementation of mitigation measure **MM-AQ-4** would require that pedestrian and bicycle connections be provided to surrounding areas consistent with the City's General Plan. Therefore, impacts related to energy supplies and capacity will be **less than significant with mitigation incorporated** (**MM AQ-2**, **MM AQ-3**, and **MM AQ-4**). Please refer to Section 4.2, Air Quality, for a description of mitigation measures **MM-AQ-2**, **MM-AQ-3**, and **MM-AQ-4**. No further mitigation is required.

4.13.6 Mitigation Measures

Mitigation measures **MM-AQ-2**, **MM-AQ-3**, and **MM-AQ-4** would reduce impacts to energy conservation to a level below significance. Please refer to Section 4.2, Air Quality. for a description of mitigation measures **MM-AQ-2**, **MM-AQ-3**, and **MM-AQ-4**.

4.13.7 Environmental Impacts After Mitigation Is Incorporated

Impacts related to demand on local and regional energy supplies can be mitigated to **less than significant** levels by incorporating **MM-AQ-2**, **MM-AQ-3**, and **MM-AQ-4** as described in Section 4.13.6. Upon implementation of **MM-AQ-2** and **MM-AQ-3,** anticipated electricity and natural gas consumption are expected to decrease as compared to the Project without mitigation. Tables 4.13-3 and 4.13-4 show the anticipated electricity and natural gas consumption, respectively, upon implementation of **MM-AQ-2** and **MM-AQ-3.**

Table 4.13-3
Project Anticipated Electricity Consumption (Year 2016)

Land Use	Total Anticipated Electricity Consumption (kilowatt hours/year)
Congregate Care (Assisted Living)	984,991
Enclosed Parking Structure	6,389,630
Hospital	8,319,020
Medical Office Building	3,543,490
Senior Housing	1,089,150
Total	**20,326,281**

Source: Appendix H.

Table 4.13-4
Project Anticipated Natural Gas Consumption (Year 2016)

Land Use	Total Anticipated Electricity Consumption (kilo-British Thermal Units/year)
Congregate Care (Assisted Living)	2,517,230
Enclosed Parking Structure	0
Hospital	29,397,800
Medical Office Building	1,012,320
Senior Housing	3,783,950
Boilers	50,000,000
Total	**86,711,300**

Source: Appendix H.

4.13.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

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