3.13 Transportation

Environmental Setting

MOBILITY

This section describes transportation and traffic conditions in Carlsbad and identifies the related potential environmental impacts that would occur as a result of implementation of the proposed General Plan. The setting information is partly based on Envision Carlsbad Working Paper 5: Walking, Biking, Public Transportation, and Connectivity prepared by Dyett & Bhatia and Fehr & Peers. Information presented in the discussion and subsequent analysis was drawn from technical analyses performed by Fehr & Peers and provided in Appendix F of this Program EIR.

PHYSICAL SETTING

Carlsbad's transportation system consists of highways, streets, pedestrian paths, transit routes, the airport, and bikeways. These key facilities are summarized below.

Streets

Regional accessibility to the city is provided primarily by local freeways (I-5 and SR-78) via interchanges with local streets. Other sources of regional access are the McClellen Palomar Airport and the railroad (via Amtrak, the Coaster, and Sprinter systems). Sub-regional accessibility is provided by regional arterial streets, such as El Camino Real, Palomar Airport Road, and Rancho Santa Fe Road. Other key facilities, such as Carlsbad Village Drive and Carlsbad Boulevard, serve some sub-regional traffic, but are primarily used to access unique areas of the city such as the Village, the lagoons, and the city's coastline. Most of the city-owned street system has bicycle lanes and pedestrian facilities providing accessibility for pedestrians and bicyclists. Figure 3.13-1 shows the existing street system.

These key facilities are described in detail below:

Freeways

I-5 – Interstate 5 is a regional facility that begins near the southern state border between California/Mexico and extends north through California and into Oregon and Washington. In Carlsbad, I-5 is generally an eight-lane freeway with interchanges at Las Flores Drive, Carlsbad Village Drive, Tamarack Avenue, Cannon Road, Palomar Airport Road, Poinsettia Lane, and La Costa Avenue.

SR-78 – State Route 78 is a regional freeway beginning at I-5 and extending east to Escondido. It provides a regional east-west corridor connecting I-5 to I-15 in the north area of the county. Although SR-78 is not within Carlsbad's city boundary, it does provide accessibility to Carlsbad via interchanges at College Boulevard, El Camino Real, and Jefferson Street. It is generally a six-lane freeway adjacent to the city's northern boundary.

Arterials

El Camino Real – El Camino Real is a north-south facility in the city providing sub-regional accessibility between Carlsbad and its neighboring jurisdictions. El Camino Real begins north of Carlsbad in Oceanside, and continues south, through Carlsbad, to Encinitas. This facility varies along its alignment between four and six lanes. South of Cannon Road, El Camino Real is generally a four-lane arterial street with bicycle lanes to provide regional bicycle accessibility. Additionally, this facility is considered a historic and scenic corridor through Carlsbad.

College Boulevard – College Boulevard is a north-south facility which begins in Oceanside and connects Carlsbad from the northeast to the southwest portions of the city, terminating at Palomar Airport Road and Aviara Parkway. In Carlsbad, it is a four-lane street with a landscaped median, sidewalks, and bicycle lanes. A planned, unbuilt portion of the street remains between Cannon Road and El Camino Real.

Melrose Drive – Melrose Drive begins in the north part of Vista and extends south, through Vista and Carlsbad, until it terminates at Rancho Santa Fe Road. In Carlsbad, it is generally a six-lane street with a center median and bicycle lanes.

Cannon Road – Cannon Road is a four-lane arterial with bicycle lanes, which begins at Carlsbad Boulevard to the west and traverses eastward where it terminates just east of College Boulevard.

Palomar Airport Road – Palomar Airport Road is an east-west arterial in the city providing sub-regional access between Carlsbad and San Marcos. In Carlsbad, it is generally a six-lane arterial with bicycle lanes and provides direct access to the Palomar Airport area.

La Costa Avenue – La Costa Avenue is a four-lane east-west street that runs along the southern portion of the city from I-5 to beyond Rancho Santa Fe Road. This street functions as an arterial between I-5 and El Camino Real.

Rancho Santa Fe Road – Rancho Santa Fe Road is a north-south arterial street connecting Carlsbad to San Marcos to the east, and to Encinitas at the southern end of the city. Rancho Santa Fe Road is a six-lane street with bicycle lanes.

Major Local Streets

Carlsbad Village Drive – Carlsbad Village Drive is an east-west facility providing connectivity in the north part of the city to/from the Village area. It is generally a four-lane facility, beginning at Ocean Street and extending east, through the Village area, to College Boulevard. In the Village area, the proposed General Plan classifies Carlsbad Village Drive as a Gateway Street. East of the

Village area, it is designated as a connector street. The facility has either Class II bicycle lanes or is designated as a Class III bicycle route.

Carlsbad Boulevard – Carlsbad Boulevard is a north-south facility connecting to Encinitas to the south and Oceanside to the north. Although it used to be part of the regional highway system, it now primarily serves to provide accessibility to Carlsbad's Village area, the city's three lagoons and coastline. Although this street is part of the Pacific Coast Highway, the State relinquished it to the City of Carlsbad when the I-5 freeway was built to replace the highway. Carlsbad Boulevard is generally a four-lane facility with wide bicycle lanes through the city. Although portions of the road are two or three lanes (such as north of State Street and between Cerezo Drive and Cannon Road), most of the facility is a four lane street. In the existing General Plan, Carlsbad Boulevard was designated as an arterial street; however, the proposed General Plan identifies it as a Coastal Street (south of the Village area) and a Gateway Street in the Village area.

Transit

Transit in Carlsbad includes bus service, ADA paratransit service, the COASTER commuter rail, and Amtrak rail service; indirectly, transit service is also provided by the Sprinter light rail system and Metrolink commuter rail. These services are described below:

Bus Service: Bus service is provided by the North County Transit District (NCTD) and is referred to as their BREEZE service. Breeze currently operates approximately ten bus routes within the city, as described below:

- Route 101 – Provides service along Carlsbad Boulevard via stops at both COASTER stations. It generally operates seven days a week on 30 minute headways between 5:00 AM and 11:00 PM.
- Route 302 – Provides access primarily to Oceanside and Vista, but connects to Carlsbad at the Plaza Camino Real transit station at the north end of the city. It generally operates on 30-minute headways between 4:30 AM and midnight, Monday through Friday, with slightly reduced service on Saturdays, Sundays, and holidays.
- Route 304 – Provides primary access from San Marcos to Encinitas via Rancho Santa Fe Road, but connects to Carlsbad with stops at La Costa Avenue and extended service to La Costa Canyon High School during school trip hours. It operates on 30- to 60-minute headways between 5:00 AM and 9:00 PM during weekdays only.
- Route 309 – Provides access between Oceanside, Carlsbad, and Encinitas via El Camino Real, with extended service to the Palomar Airport Area. It generally operates on 30-minute headways between 4:00 AM and 10:00 PM, Monday through Friday; and on 60-minute headways on Saturdays, Sundays, and Holidays.
- Route 323 – Provides access between Quarry Creek, Vista and Oceanside with extended service to Carlsbad High School during school hours. It generally operates on 30-, 60- and 120-minute headways from 5:30 AM to 6:30 PM, Monday through Friday.
- Route 325 – Provides access between the College Boulevard Sprinter Station and the Village area via Carlsbad Village Drive and Jefferson Street with extended service to

Carlsbad High School. It operates on 30- to 40-minute headways, between 5:20 AM and 9:00 PM on weekdays with a reduced schedule on Saturdays (60-minute headways with service between 7:00 AM and 7:00 PM).

- Route 373 FLEX – Provides flexible service, by reservation only (30-minute advance notice), between 4:50 AM and 8:30 PM, Monday through Friday. This service generally serves all of Carlsbad.
- Route 444 – Provides service to Carlsbad via Cannon Road, Faraday Drive, College Boulevard, and Palomar Airport Road. It generally connects this area of the city to the Carlsbad Poinsettia COASTER station. As such, it operates northbound in the AM peak period only, with two route start times at 7:20 AM and 8:35 AM. In the PM peak period, it operates in the southbound direction only, terminating at the COASTER station at 5:16 PM and 5:51 PM. This route only operates on weekdays.
- Route 445 – Provides service from the Palomar College in San Marcos to the Carlsbad Poinsettia COASTER station via Palomar Airport Road. It operates during weekdays only, with eastbound service only, connecting to the COASTER station at 7:19 AM, 8:35 AM, and 3:09 PM. In the westbound direction, it connects to the COASTER station at 7:27 AM, 9:32 AM, 5:16 PM, and 5:51 PM.
- Route 446 – Provides service from the Carlsbad Poinsettia COASTER station to the city's outlet stores, LEGOLAND, and the Gemological Institute of America via Avenida Encinas, Paseo Del Norte, and Armada. It operates on weekdays only, with service in the eastbound direction during the AM peak period only connecting from the COASTER station at 7:19 AM and 8:35 AM. In the westbound direction, it terminates at the COASTER station at 5:16 PM and 5:51 PM.

Paratransit Service: NCTD also offers LIFT, a curb-to-curb service for disabled persons who are unable to utilize the BREEZE serve and are certified as eligible to use the service, as required by the ADA.

COASTER Commuter Rail: This is a north-south commuter rail transit service connecting from Oceanside to Santa Fe Depot in San Diego. Carlsbad is served by two COASTER stations, one located north of Poinsettia Lane (just west of I-5) and the other is located in the Village area. The COASTER service primarily operates during commute periods on approximately 40-minute headways between 5:15 AM and 6:45 PM. It operates on reduced service hours on weekends and holidays with longer headways.

Sprinter: This is an east-west light rail transit service connecting Oceanside to Escondido and many educational destinations such as Mira Costa College and California State University San Marcos. Although the Sprinter does not run within the city limits, it runs just north of Carlsbad and connections are provided via the COASTER and Breeze services in addition to bicycle accessibility.

Amtrak: Amtrak is a national passenger rail service connecting San Diego to San Luis Obispo. Amtrak is currently adding stops in Carlsbad, and they will be updating their service to include these stops once completed.

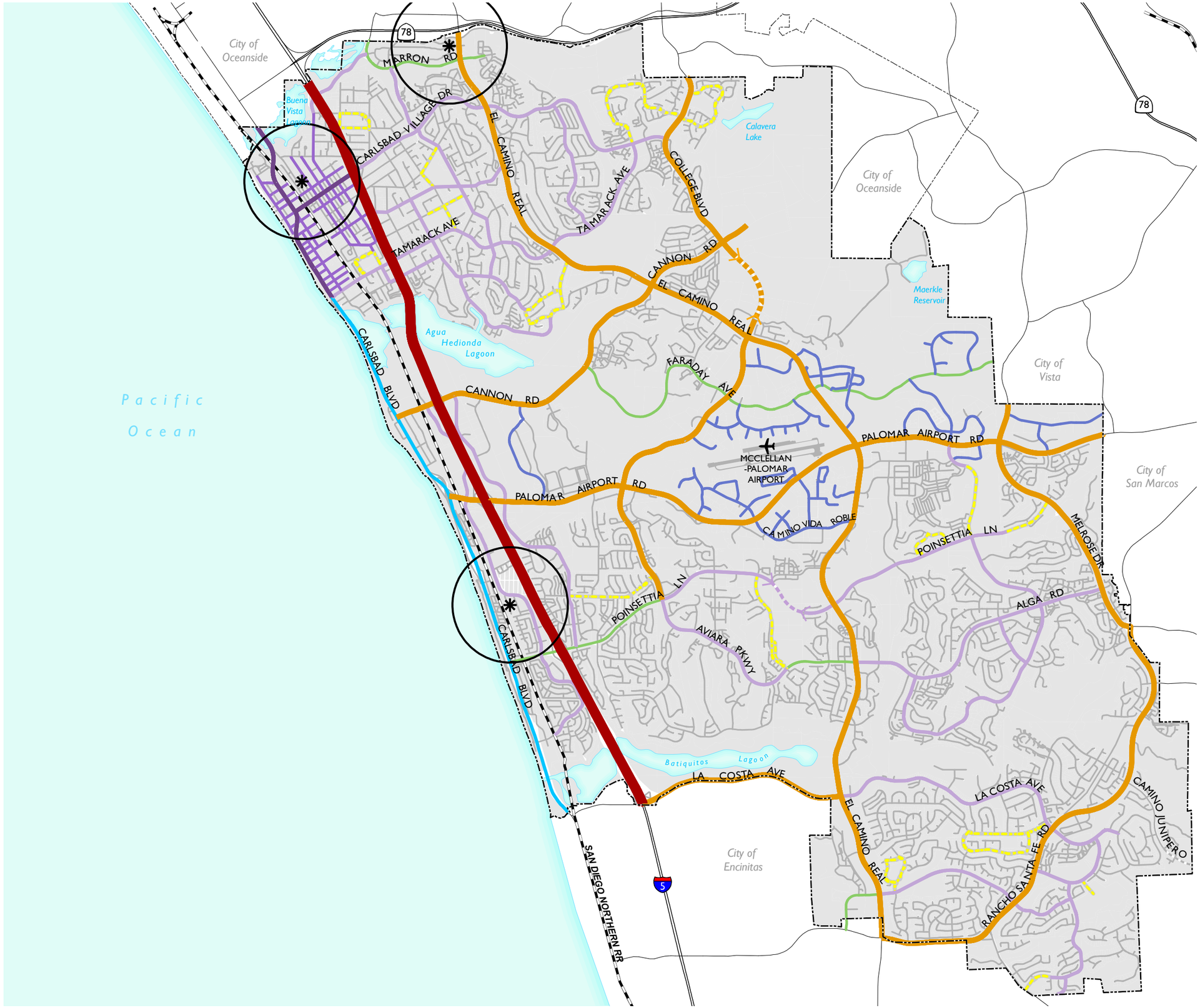

Figure 3.13-1

PROPOSED GENERAL PLAN
Existing Street System

- Freeway
- Arterial Streets
- Identity Streets
- Village Streets
- Connector Streets
- Coastal Street
- School Streets
- Employment Oriented Street
- Industrial Street
- Local/Neighborhood Street
- Planned Arterial Streets
- Planned Connector Streets
- Planned Local/Neighborhood Street
- Highways
- Railroad
- Transit Centers
- 1/2 Mile Radius
- City Limits

500 ACRES

100 ACRES

0 0.5 1 2

Miles

Source: City of Carlsbad, 2013; SANDAG, 2013; Fehr & Peers, 2013; Dyett & Bhatia, 2013.

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Air Travel

Air travel in Carlsbad is provided via the McClellan-Palomar Airport. The Federal Aviation Administration (FAA) classifies the airport as a commercial service airport that mainly serves smaller aircraft with a maximum takeoff weight of 12,000 pounds or less. However, some aircraft larger than 12,500 pounds, but less than 60,000, do operate at the airport. McClellan-Palomar Airport is the only airport with an instrument landing system between Lindbergh Field and Santa Ana that can accommodate the majority of the business aircraft fleet of over 12,500 pounds. United Airlines operates service to Los Angeles from Carlsbad. Medevac and transient helicopters also operate at the heliport/helipad located east of the runway. Because of the potential significant adverse impacts that could occur if the airport increased aircraft and/or ancillary services, the Carlsbad Municipal Code prohibits the City Council from approving any legislative act (such as a zone change or general plan amendment) authorizing the expansion of McClellan-Palomar Airport without voter approval.

Bicycles and Pedestrians

Bicycle travel in Carlsbad is provided via trails, Class I off-street bicycle paths, Class II on-street bicycle lanes, and Class III on-street bicycle routes. The city has an extensive network of bicycle facilities. Existing and planned facilities are presented on Figure 3.13-1.

Pedestrian travel within the city is provided via sidewalks, crosswalks, and dedicated pedestrian trails. The city's design criteria have provided sidewalks along most facilities within the city, but some streets that were developed prior to the city's incorporation lack sidewalks.

Additionally, several pedestrian and bicycle barriers exist in Carlsbad that prohibit direct travel in the city. Although some of these barriers are natural in nature (such as the topography of the inland area and the city's three lagoons), some of the barriers are man-made (such as I-5 and the railroad).

Truck Routes

Goods movement is also accommodated in the city via designated truck routes. This designation assures that goods can be moved safely and efficiently in the city. Many of Carlsbad's businesses and residents rely on goods movement whether for deliveries or importing/exporting product.

Section 10.32.091 of the Carlsbad Municipal Code (CMC) enumerates the designated and established truck routes in Carlsbad as listed below:

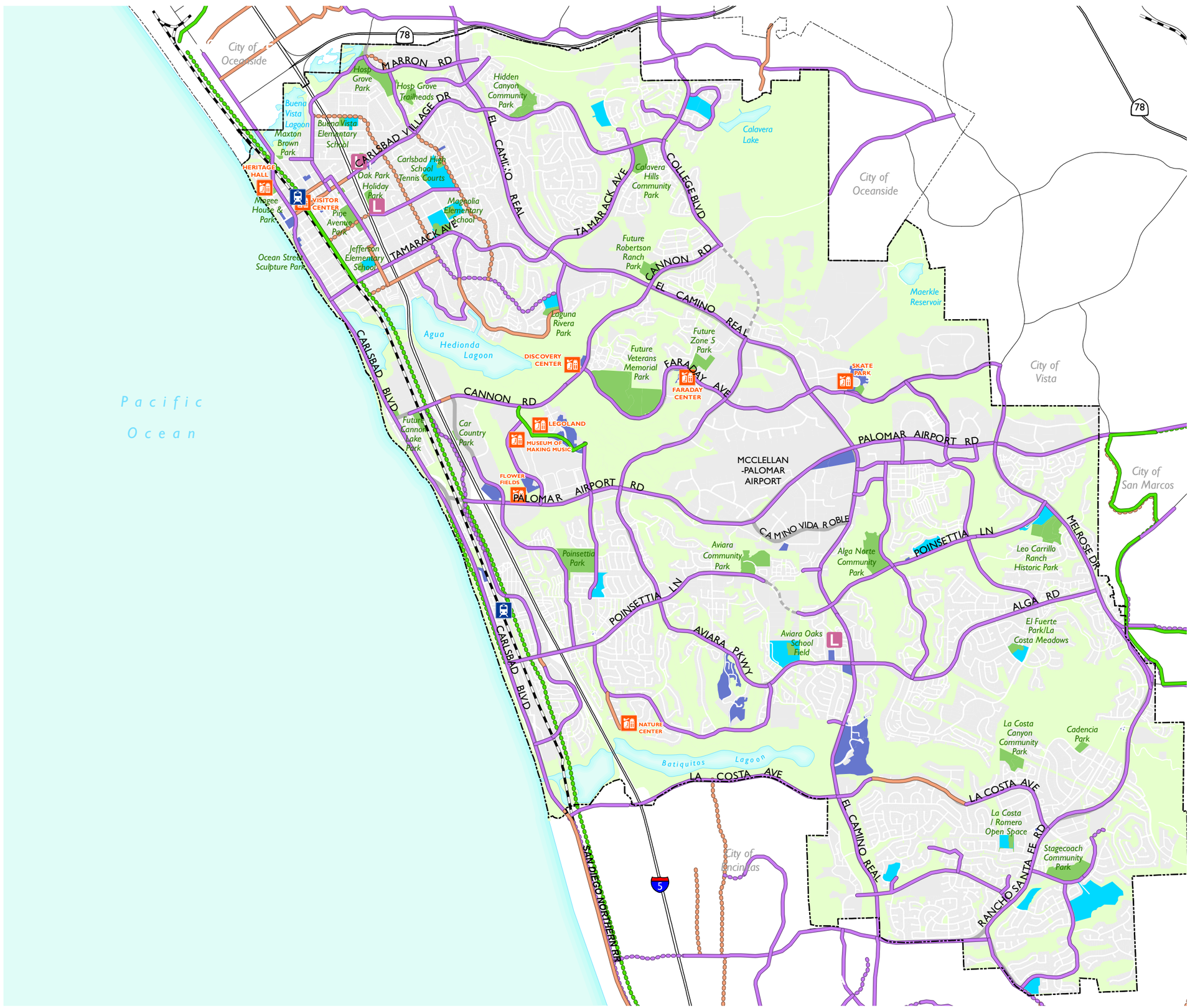
- I-5 Freeway, between the northerly city limits and the southerly city limits
- Carlsbad Boulevard, between the northerly city limits and the southerly city limits
- Carlsbad Village Drive, between Carlsbad Boulevard and I-5 Freeway
- Tamarack Avenue, between Carlsbad Boulevard and I-5 Freeway
- Cannon Road, between Carlsbad Boulevard and El Camino Real

- Palomar Airport Road, between Carlsbad Boulevard and the easterly city limits
- El Camino Real, between the northerly city limits and the southerly city limits
- La Costa Avenue, between the westerly city limits and El Camino Real
- Rancho Santa Fe Road, between the southerly city limits and the northerly city limits
- Olivenhain Road, between the westerly city limits and Rancho Santa Fe Road
- Melrose Drive, between Palomar Airport Road and the northerly city limits
- Faraday Avenue, between Cannon Road and the easterly city limits
- College Boulevard, between Palomar Airport Road and El Camino Real
- El Fuerte Street, between Palomar Airport Road and Faraday Avenue

The designated truck routes provide access from I-5 and SR 78 to commercial areas, the Village, business park areas, McClellan-Palomar Airport, and points beyond the city limits.

Figure 3.13-2

PROPOSED GENERAL PLAN
Bicycle System



Existing Bike Trails
- Bike Path - Class I
- Bike Lane - Class II
- Bike Route - Class III

Proposed Bike Trails
- Bike Path - Class I
- Bike Lane - Class II
- Bike Route - Class III

Existing Facilities
- Carlsbad Coaster Station
- Public Attractions
- City Library
- Public Schools
- Civic Uses
- Existing and Planned Parks
- Open Space

- Highways
- Major Roads
- Planned Roads
- Railroad
- City Limits

500 ACRES

100 ACRES

0 0.5 1 2

Miles

Source: City of Carlsbad, 2013; SANDAG, 2013; Fehr's & Peers, 2013; Dyett & Bhatia, 2013.

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REGULATORY SETTING

This section summarizes existing regulations that apply to the transportation system.

Federal Regulations

Department of Transportation Act of 1966

Section 4(f) of the Department of Transportation Act of 1966 specifies that a transportation project requiring the use of publicly owned parks, recreation areas, historic sites (including those owned privately), wildlife and waterfowl refuges, and many other types of resources can be approved only if there is no feasible and prudent alternate to using that land and if the project is planned to minimize harm to the property.

General procedures are as follows:

A specific finding is required. Section 4(f) lands may be used for federal aid highways only if:

a. There is no prudent and feasible alternative to using that land; and

b. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Each project proposal must include a Section 4(f) avoidance alternative (Caltrans 2011).

Surface Transportation Assistance Act (STAA)

In 1982, the federal government passed the STAA. This act requires states to allow larger trucks on the "national network," which is compared of the interstate system plus the non-interstate federal-aid primary system. "Larger trucks" includes (1) doubles with 28.5 foot trailers, (2) singles with 48-foot semi-trailers and unlimited kingpin-to-rear axle distance, (3) unlimited length for both vehicle combinations, and (4) widths up to 102 inches. I-5 and SR-78 are defined as STAA routes.

State Regulations

California Department of Transportation (Caltrans)

Caltrans is the primary state agency responsible for transportation issues. One of its duties is the construction and maintenance of the state highway system. Caltrans has established standards for street traffic flow and has developed procedures to determine if intersections require improvements. For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. For projects that would not physically affect facilities, but may influence traffic flow and levels of services at such facilities, Caltrans may recommend measures to mitigate the traffic impacts of such projects.

California Transportation Commission (CTC)

The CTC consists of nine members appointed by the California Governor. CTC is responsible for the programming and allocating of funds for the construction of highway, passenger rail, and transit improvements throughout the state. CTC is responsible for adopting the State Transportation Improvement Program and the State Highway Operation and Protection Program.

Assembly Bill (AB) 32

With AB 32, the Global Warming Solutions Act of 2006, the State of California committed itself to reducing greenhouse gas (GHG) emissions to 1990 levels by 2020. The California Air Resources Board (CARB) is coordinating the response to comply with AB 32.

In 2007, CARB adopted a list of early action programs that could be put in place by January 1, 2010. In 2008, CARB defined its 1990 baseline level of emissions, and by 2011 it completed its major rule making for reducing GHG emissions. Rules on emissions, as well as market-based mechanisms like the proposed cap and trade program, took effect in 2012.

On December 11, 2008, CARB adopted its Proposed Scoping Plan for AB 32. This scoping plan included the approval of Senate Bill (SB) 375 as the means for achieving regional transportation-related GHG targets. SB 375 provides guidance on how curbing emissions from cars and light trucks can help the state comply with AB 32.

AB 1358 – California Complete Streets Act of 2008

Supporting some of the previously referenced regulations/requirements, the California Complete Streets Act of 2008 (AB 1358) requires circulation elements as of January 1, 2011, to accommodate the transportation system from a multi-modal perspective, including public transit, walking and biking, which have traditionally been marginalized in comparison to autos in contemporary American urban planning.

SB 375

SB 375 has four key components. First, SB 375 requires regional GHG emissions targets. CARB's Regional Targets Advisory Committee will guide the adoption of targets to be met by 2020 and 2035 for each Metropolitan Planning Organization (MPO) in the state. For Carlsbad, the MPO is SANDAG (see below). These targets, which MPOs may propose themselves, will be updated every eight years in conjunction with the revision schedule for housing and transportation elements.

Second, MPOs will be required to create a Sustainable Communities Strategy (SCS) that provides a plan for meeting regional targets. The SCS and the Regional Transportation Plan (RTP) must be consistent with each other, including action items and financing decisions. If the SCS does not meet the regional target, the MPO must produce an alternative planning strategy that details an alternative plan to meet the target.

Third, SB 375 requires that regional housing elements and transportation plans (also prepared by SANDAG as the MPO for San Diego County) be synchronized on eight-year schedules. In addition, Regional Housing Needs Assessment allocation numbers must conform to the SCS. If local jurisdictions are required to rezone land as a result of changes in the housing element, rezoning must take place within three years.

Finally, MPOs must use transportation and air emissions modeling techniques consistent with guidelines prepared by the CTC. Regional transportation planning agencies (such as SANDAG) are encouraged, but not required, to use travel demand models consistent with the CTC guidelines.

The SANDAG region was the first region in the state that adopted a Sustainable Communities Strategies (SCS) and Regional Transportation Plan (RTP) update under SB 375.

Local Regulations

SANDAG Regional Transportation Plan

SANDAG is the regional transportation planning agency in San Diego County. As such, they are responsible for planning and funding transportation projects throughout the region. SANDAG has completed its 2050 RTP. The RTP was adopted on October 28, 2011. The following projects have been identified in the Carlsbad area to improve mobility:

- Peak period bus rapid transit (BRT) on I-5 and along an east-west corridor somewhere near Palomar Airport Road
- Managed lanes on I-5 and SR-78 (including upgrades to the I-5/SR-78 interchange)

City of Carlsbad Municipal Code

As previously discussed, the city's Municipal Code identifies numerous components affecting transportation. This includes parking requirements, truck routes, and changes to use at the McClellan-Palomar Airport.

Growth Management Plan

The city's Growth Management Plan was adopted by Carlsbad voters in the 1980s to limit the amount of residential growth in the city and to ensure that public infrastructure was delivered concurrent with development. The Growth Management Plan also requires annual monitoring to ensure that growth is being managed consistent with the plan. Currently, traffic is monitored annually and volume-to-capacity calculations are completed to measure and monitor the effects of growth on the transportation system.

Carlsbad Bicycle Master Plan

The city adopted a Bicycle Master Plan in 2007, which guides the future development of the city's bicycle facilities and enhancement of the existing bikeway network. The master plan identifies

existing and planned bicycle facilities and addresses gaps, constrained areas, and improvements at intersections. The master plan complies with the requirements of the Bicycle Transportation Account, which is an annual program providing state funds for bicycle facilities improvements.

Carlsbad Pedestrian Master Plan

The city's Pedestrian Master Plan was completed in August 2008. The master plan is intended to assist the city in implementing and improving their pedestrian facilities into the future.

Carlsbad ADA Transition Plan

Carlsbad recently completed an Americans with Disabilities Act (ADA) transition plan, which identifies facilities that require improvements to meet current ADA standards, and a plan for transitioning those facilities to become ADA compliant into the future.

Methodology

Street Typologies and Prioritized Modes of Travel

Traditionally, transportation systems have been designed to achieve a level of service from the perspective of the driver, not pedestrians or bicyclists. The California Complete Streets Act (2008) requires cities in California to plan for a balanced, multi-modal transportation system that meets the needs of all travel modes; and in 2010, national guidelines were developed by the Transportation Research Board to encourage cities to establish levels of service for all travel modes. The proposed General Plan Mobility Element is consistent with and further enhances the state and federal requirements for complete streets by implementing a "livable streets" strategy – recognizing the street as a public space and ensuring that the public space serves all users of the system (elderly, children, bicycles, pedestrians, etc.) within the urban context of that system (e.g. accounting for the adjacent land uses). The proposed General Plan Mobility Element identifies a street typology appropriate for the uniqueness of the street and surrounding land uses and identifies which modes of travel (pedestrian, bicycle, vehicles, etc.) should be prioritized on that street.

The proposed General Plan Mobility Element recognizes that optimum service levels cannot be provided for all travel modes on all streets within the city. This is due to competing interests that arise when different travel modes mix. For example, pedestrian-friendly streets typically have slow vehicle travel speeds, short-distance pedestrian crossings, and include some type of buffer between the vehicle travel way and the pedestrian walkway. However, automobile-friendly streets typically have wide travel lanes, multiple turn lanes (increasing the pedestrian crossing distance), and high automobile speeds. Therefore, the proposed General Plan Mobility Element identifies a mode-prioritization approach that identifies preferred travel modes for each street typology and identifies that preferred modes should be prioritized. Non-preferred travel modes are accommodated along the street, but their service is not prioritized (i.e., a lower service level for non-prioritized modes is acceptable to ensure that the service level for prioritized modes is enhanced).

Table 3.13-1 describes the city's livable street typologies and Figure 3.13-2 depicts the city's livable street system, as identified in the proposed General Plan.

Carlsbad Multi-Modal Level of Service (MMLOS)

The proposed General Plan Mobility Element establishes that a new approach (Carlsbad MMLOS) shall be utilized to evaluate the transportation facilities in the city. The city's MMLOS methodology will provide a qualitative "grade" assigned to prioritized travel modes, ranging from a level of service (LOS) A to LOS F. LOS A reflects a high service standard for a travel mode (e.g. outstanding characteristics and experience for that mode) and LOS F would reflect a poor service standard for a travel mode (e.g. congestion for vehicles, no bicycle, pedestrian, or transit facilities, etc.). The proposed General Plan requires a LOS D or better only for the prioritized travel mode. The following summarizes the methods used to evaluate LOS for each prioritized mode:

- *Prioritized Mode: Vehicles:* The LOS for intersections is determined by using the Highway Capacity Manual (Transportation Research Board), and the LOS for street segments is determined by using SANTEC guidelines, which are considered state of the practice for evaluating roadway traffic operations in San Diego County.
- *Prioritized Mode: Bicycles:* The LOS for bicycle facilities is determined by using the City of Carlsbad MMLOS criteria.
- *Prioritized Mode: Pedestrians;* The LOS for pedestrian facilities is determined by using the City of Carlsbad MMLOS criteria.
- *Prioritized Mode: Transit:* The LOS for transit facilities is determined by using the City of Carlsbad MMLOS criteria.

These methodologies are described in detail below.

Method to Evaluate Vehicle Level of Service

Vehicle LOS is a general measure of vehicle traffic operating conditions whereby a letter grade, from LOS A (no congestion) to F (high levels of congestion), is assigned. The flow of vehicles without significant impediments is considered "stable" whereas when traffic encounters interference that limits the capacity acutely, the flow becomes "unstable". These grades represent the perspective of drivers only and are an indication of the comfort and convenience associated with driving, as well as speed, travel time, traffic interruptions, and freedom to maneuver. The level of service grades are generally defined as follows:

- LOS A represents free flow travel for vehicles. Individual users are virtually unaffected by others in the traffic stream.
- LOS B represents stable flow, but the presence of other users in the traffic stream begins to be noticeable.
- LOS C represents a range in which the influence of traffic density on operations becomes noticeable. The ability to maneuver within the traffic stream and to select an operating speed is now clearly affected by the presence of other vehicles.

- LOS D borders on unstable flow. Speeds and ability to maneuver are severely restricted because of traffic congestion.
- LOS E represents unstable operating conditions at or near the capacity level where maneuverability is severely limited.
- LOS F is used to define forced or a breakdown traffic flow.

The street segment capacities utilized to evaluate vehicle-prioritized streets are summarized in Table 3.13-1 below.

Table 3.13-1: Daily Street Segment Capacity

Street Typology	*Typical Lane Configuration*	*Level of Service*				
		LOS A	*LOS B*	*LOS C*	*LOS D*	*LOS E*
Arterial	6 lanes	25,000	35,000	50,000	55,000	60,000
Arterial	4 lanes	15,000	21,000	30,000	35,000	40,000
Industrial	4 lanes	10,000	14,000	20,000	25,000	30,000
Industrial	2 lanes	5,000	7,000	10,000	12,500	15,000
Connector	4 lanes	10,000	14,000	20,000	25,000	30,000
Connector	2 lanes	5,000	7,000	10,000	13,000	15,000
Freeway	Mixed-Flow Lane[2]	-	-	17,600	19,800	22,000
Freeway	HOV Lanes[2]	-	-	14,400	16,200	18,000

[1] LOS thresholds were calculated based on V/C ratios of the daily threshold volumes for the corresponding street classification.

[2] Per lane capacities presented.

Note – These are general capacities for planning purposes. Specific operational characteristics, such as signal coordination, can enhance operations significantly.

Source: SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region, 2000.

Method to Evaluate Pedestrian, Bicycle and Transit Level of Service

The Carlsbad MMLOS approach identifies attributes of a location and identifies a qualitative LOS grade based on the attributes of the pedestrian, bicycle or transit facility. Each attribute contributes to a point system that, when the total points for all attributes are added together, corresponds to a qualitative letter grade as shown in Table 3.13-2 below. The specifics for each MMLOS component are further described below.

Table 3.13-2: MMLOS Point System and LOS Rating

Point Score	*LOS*
9.0-10	A
8.0-8.99	B
7.0-7.99	C
6.0-6.99	D
5.0-5.99	E
0-4.99	F

Pedestrian MMLOS

For pedestrian priority streets, the MMLOS criteria evaluates the *quality* of the pedestrian system (e.g. number of vehicle lanes that need to be crossed and the speed of adjacent traffic) and the *friendliness* of the infrastructure at intersections (e.g. pedestrian countdown heads, dedicated pedestrian phases (e.g. a scramble phase), curb extensions, refuge median). The pedestrian level of service criteria are outlined below in Table 3.13-3.

Table 3.13-3: Pedestrian MMLOS Criteria

Criteria Evaluated	*Point System*
Total number of lanes (including travel lanes and turn lanes) at a pedestrian crossing	• 4 points for roads with two lanes or fewer; or • 3 points for roads with three lanes; or • 2 points for roads with four lanes; or • 1 point for roads with five lanes; or • 0 points for roads with more than five lanes
Crossing Quality	• 0.5 points for presence of a pedestrian refuge • 0.5 points for well-marked crossways and mid-block crossings at safe and convenient locations • 0.5 points for signing, striping, sidewalks, and other elements that suggest the presence of a pedestrian crossing • 0.5 points for rectangular rapid flashing beacons at an uncontrolled crossing • 0.5 points for drivers and pedestrians having unobstructed views of each other • 0.5 points for posted speeds of 25 miles per hour or less • 0.25 points for posted speeds of 30 miles per hour or less

Table 3.13-3: Pedestrian MMLOS Criteria

Criteria Evaluated	*Point System*
Other Elements	• 1 point for active building frontages (e.g. buildings that front the street) • 0.5 for pedestrian lighting at night • 0.5 points for street trees and/or quality street furniture facing the land uses • 0.5 points for twinkle lights in trees along the corridor • 0.5 points for sidewalks that are at least 10 feet wide adjacent to retail, at least six feet wide adjacent to residential uses, or at least eight feet wide everywhere else • 0.5 points for a sense of security by the presence of other people and clear sight lines • 0.5 points for on-street parking and/or landscaping as a "buffer" from vehicle traffic and pedestrian walkway.

Bicycle MMLOS

For bicycle priority streets, the MMLOS criteria evaluates the *quality* of the bicycle system (e.g. bicycle route, bicycle lanes, or bicycle pathway; presence of bicycle buffers from the vehicle travel way), the *amenities* of the system (e.g. presence of bicycle parking), and the *friendliness* of the infrastructure (e.g. bicycle detection at intersections, pavement conditions, presence of vehicle parking). Bicycle level of service criteria are outlined below in Table 3.13-4.

Table 3.13-4: Bicycle MMLOS Criteria

Criteria Evaluated	*Point System*
Type of bicycle facility	• 6 points for multiple bicycle facilities (e.g. a bike path and bike lanes or something similar) along the corridor; or • 5 points for a Class I facility (off-street path) or a Class II facility (on-street bicycle lanes) with a bicycle buffer (e.g. striped median buffering the bicycles from the vehicles either on the right side or left side of the bike lane depending on if parallel parking exists); or • 4 points for a Class II facility that incorporates a painted lane that is at least 6 feet wide and signage or a Class III facility (bike route designated by signage only) that incorporates sharrows; or • 3 points for Class II bike lanes that are under 6 feet wide or a Class III facility
Connectivity	• 0.5 points if the street is directly connected to bicycle facilities in all four directions at intersections

Table 3.13-4: Bicycle MMLOS Criteria

Criteria Evaluated	*Point System*
Amenities	• 0.5 points if bicycle racks are provided along the street segment corridor • 0.5 points if signage denoting the bicycle facility is provided • 0.5 points for bike-friendly intersections (e.g. bicycles are not trapped by right-turn lanes, there is space for bicycles to bypass the vehicle queue, etc.) • 0.5 points for enhanced bicycle detection or video detection at an intersection
Other Elements	• 0.5 points for posted speed limits of 25 miles per hour or less • 0.25 points for posted speed limits of 30 miles per hour or less • 0.5 points for good pavement conditions
Adjacent Vehicle Parking	• 1.5 points for no parking along the street; or • 1 point for backed-in angled parking; or 0.5 points for parallel parking

Transit MMLOS

For transit priority streets, the MMLOS criteria evaluates the *transit vehicle right-of-way* (e.g. dedicated or shared, signal priority), *hours and frequency of service* (e.g. weekday/weekend hours, peak period headway); *performance* (e.g. on-time or late); *amenities and safety* (e.g. lighting, covered stop, bench, on-board bike/surfboard storage); and *connectivity* (e.g. to other transit routes, employment areas, schools, visitor attractions, and other major destinations). The transit level of service criteria are outlined below in Table 3.13-5:

Table 3.13-5: Transit MMLOS Criteria

Criteria Evaluated	*Point System*
Right of Way	0.5 points for dedicated right of way for transit only
Service	• 1.5 points for at least 15 minute headways during the peak hours • 1 point for at least 30 minute headways during the peak hours • 0.5 for at least 60 minute headways during the peak hours • 1.5 points for good on-time performance • 1.5 points if the route provides for a single transfer to reach one of the COASTER stations
Visual Interest Adjacent Land Use and Amenity	• 0.5 points for covered bus stops • 0.5 points for a bench • 0.5 points for a well-lit stop that provides a sense of security, as observed by analyst

Table 3.13-5: Transit MMLOS Criteria

Criteria Evaluated	*Point System*
Other Elements	• 0.5 points for a corridor that has transit preemption to reduce delays • 0.5 points for routes that have available seats on the bus • 0.5 points for the availability to directly access multiple routes (e.g. the stop serves more than one bus route) • 1 point for bike parking availability at the bus stop • 1 point for buses that provide on-board bike racks

Existing Operations

The operations of the city's existing street system are summarized below based on the prioritized modes identified in the proposed General Plan Mobility Element.

Prioritized Mode: Vehicles

Counts along the major vehicle prioritized streets in the city were obtained from the city's Traffic Monitoring Program (December 18, 2012) prepared for the City of Carlsbad by RBF. This data was supplemented with freeway data from the Caltrans Freeway Performance Measurement System and published Caltrans traffic counts. The existing segment level of service results are summarized in Table 3.13-6, which is based on average daily traffic (ADT) volumes.[1]

Table 3.13-6: Existing Roadway Operations

Roadway	*From*	*To*	*Number of Lanes*	*Street Typology*	*Existing ADT*	*Existing LOS*
City of Carlsbad Roadways						
Cannon Road	I-5	El Camino Real	4	Arterial	25,420	LOS C
Cannon Road	El Camino Real	College Blvd	4	Arterial	17,764	LOS B
College Blvd	Palomar Airport Rd	El Camino Real	4	Arterial	13,806	LOS A
College Blvd	N. City Limits	Cannon Rd	4	Arterial	24,670	LOS C
Palomar Airport Road	I-5	College Blvd	6	Arterial	48,626	LOS C
Palomar Airport Road	College Blvd	El Camino Real	6	Arterial	35,154	LOS C

[1] ADT capacities are generally based on peak hour capacities that are extrapolated to daily volumes.

Table 3.13-6: Existing Roadway Operations

Roadway	*From*	*To*	*Number of Lanes*	*Street Typology*	*Existing ADT*	*Existing LOS*
Palomar Airport Road	El Camino Real	Melrose Dr	6	Arterial	52,786	LOS D
Palomar Airport Road	Melrose Dr	W. City Limits	6	Arterial	31,880	LOS B
La Costa Ave	I-5	El Camino Real	4	Arterial	35,371	**LOS E**
El Camino Real	N. City Limits	Tamarack Ave	4	Arterial	29,245	LOS C
El Camino Real	Tamarack Ave	Cannon Rd	4	Arterial	22,514	LOS C
El Camino Real	Cannon Rd	College Blvd	6	Arterial	32,393	LOS B
El Camino Real	College Blvd	Palomar Airport Rd	6	Arterial	30,477	LOS B
El Camino Real	Palomar Airport Rd	La Costa Ave	6	Arterial	49,760	LOS C
El Camino Real	La Costa Ave	Rancho Santa Fe Rd	6	Arterial	35,997	LOS C
Rancho Santa Fe Rd	Palomar Airport Rd	El Camino Real	6	Arterial	24,801	LOS A
Caltrans Roadways						
Interstate 5 (mixed flow lanes)	Las Flores Dr	Carlsbad Village Dr	8	Freeway	197,000	**LOS F**
Interstate 5 (mixed flow lanes)	Carlsbad Village Dr	Tamarack Ave	8	Freeway	195,000	**LOS F**
Interstate 5 (mixed flow lanes)	Tamarack Ave	Cannon Rd	8	Freeway	197,000	**LOS F**
Interstate 5 (mixed flow lanes)	Cannon Rd	Palomar Airport Rd	8	Freeway	200,000	**LOS F**
Interstate 5 (mixed flow lanes)	Palomar Airport Rd	Poinsettia Ln	8	Freeway	192,000	**LOS F**
Interstate 5 (mixed flow lanes)	Poinsettia Ln	La Costa Ave	8	Freeway	195,000	**LOS F**

Table 3.13-6: Existing Roadway Operations

Roadway	*From*	*To*	*Number of Lanes*	*Street Typology*	*Existing ADT*	*Existing LOS*
SR-78 (mixed flow lanes)	I-5	Jefferson	6	Freeway	132,000	**LOS F**
SR-78 (mixed flow lanes)	Jefferson	El Camino Real	6	Freeway	123,000	**LOS E**
SR-78 (mixed flow lanes)	El Camino Real	College Blvd	6	Freeway	134,000	**LOS F**

As shown in Table 3.13-6, all of the transportation facilities currently operate at and acceptable vehicle LOS D or better except for the freeway facilities and La Costa Avenue, between I-5 and El Camino Real.

Prioritized Mode: Bicycles

Bicycle levels of service for major bicycle-prioritized streets in the city are presented in Table 3.13-7, which are based on observations completed in the fall of 2013.

Table 3.13-7: Bicycle Operations

Street	*From*	*To*	*Street Typology*	*Existing Points*	*Existing LOS*
Carlsbad Boulevard	La Costa	Poinsettia	Coastal Street	6.0	D
Carlsbad Boulevard	Poinsettia	Palomar Airport	Coastal Street	5.5	**E**
Carlsbad Boulevard	Palomar Airport	Cannon	Coastal Street	6.0	D
Carlsbad Boulevard	Cannon	Tamarack	Coastal Street	7.0	C
Carlsbad Boulevard	Tamarack	Carlsbad Village	Coastal Street	7.0	C
Carlsbad Boulevard	Carlsbad Village	City Limit	Coastal Street	7.0	C
Carlsbad Village Drive	Carlsbad Boulevard	I-5	Village Street	8.0	B
Faraday Avenue	Cannon	College	Employment Street	6.0	D
Tamarack Avenue	Carlsbad Boulevard	I-5	Connector Street	6.5	D

As shown in Table 3.13-7, all of the major bicycle prioritized streets operate at an acceptable bicycle LOS D or better, except for the segment of Carlsbad Boulevard between Poinsettia and Palomar Airport Road (which operates at a bicycle LOS E).

Prioritized Mode: Pedestrian

Pedestrian levels of service for major pedestrian-prioritized streets in the city are presented in Table 3.13-8.

Table 3.13-8: Pedestrian Operations

Street	*From*	*To*	*Street Typology*	*Existing Points*	*Existing LOS*
Carlsbad Boulevard	La Costa	Poinsettia	Coastal Street	5.0	**E**
Carlsbad Boulevard	Poinsettia	Palomar Airport	Coastal Street	5.0	**E**
Carlsbad Boulevard	Palomar Airport	Cannon	Coastal Street	5.5	**E**
Carlsbad Boulevard	Cannon	Tamarack	Coastal Street	4.5	**F**
Carlsbad Boulevard	Tamarack	Carlsbad Village	Coastal Street	6.0	D
Carlsbad Boulevard	Carlsbad Village	City Limit	Coastal Street	6.5	D
Carlsbad Village Drive	Carlsbad Boulevard	I-5	Village Street	6.0	D
Faraday Avenue	Cannon	College	Employment Street	6.0	D
Tamarack Avenue	Carlsbad Boulevard	I-5	Connector Street	6.5	D

As shown in Table 3.13-8, Carlsbad Boulevard, south of Tamarack, operates at an unacceptable pedestrian level of service. Otherwise, the other studied pedestrian facilities are operating at an acceptable pedestrian level of service.

Prioritized Mode: Transit

Transit levels of service for major transit-prioritized streets in the city are presented in Table 3.13-9.

Table 3.13-9: Transit Operations

Street	*From*	*To*	*Street Typology*	*Existing Points*	*Existing LOS*
Carlsbad Boulevard	City Limit	Carlsbad Village Drive	Coastal Street	5.25	**E**
Carlsbad Boulevard	Carlsbad Village Drive	Tamarack	Coastal Street	5.0	**E**
Carlsbad Village Drive	Carlsbad Boulevard	I-5	Village Street	5.75	**E**
El Camino Real	SR-78	Cannon	Arterial	5.6	**E**
El Camino Real	Cannon	College	Arterial	5.5	**E**
El Camino Real	College	Palomar Airport Road	Arterial	5.2	**E**
El Camino Real	Palomar Airport Road	La Costa	Arterial	5.35	**E**
El Camino Real	La Costa	City Limit	Arterial	5.5	**E**
Palomar Airport Road	College Boulevard	El Camino Real	Arterial	5.7	**E**
Faraday	Cannon	College	Employment Oriented Street	5.0	**E**
College Boulevard	Palomar Airport Road	Faraday	Connector Street	5.0	**E**

As shown in Table 3.13-9, transit level of service along major transit prioritized streets all operate at transit LOS E, an unacceptable level.

Impact Analysis

SIGNIFICANCE CRITERIA

A significant impact would occur with full implementation of the proposed General Plan if it would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness 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 as defined below:

  - Degradation of level of service to below a LOS D for a prioritized travel mode at a facility that is not exempt from the LOS D standard; or
  - Adds prioritized travel mode usage to a facility that is not exempt from the LOS D standard and is operating at a level of service below LOS D;
  - Degrades operations of Caltrans' facilities below LOS C or adds traffic to facilities already operating at an unacceptable level.
- Conflict with an applicable congestion management program (CMP) including, but not limited to level of service standards and travel demand measures, or 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; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

METHODOLOGY AND ASSUMPTIONS

The transportation impact analysis is focused on potential level of service impacts for vehicles, pedestrians, bicycle, and transit travel modes. The future traffic volumes were developed using the SANDAG travel demand forecasting model (Series 12), incorporating the proposed General Plan land use information and the proposed General Plan street network. The city's MMLOS methodology was used to provide a qualitative "grade" assigned to prioritized travel modes for pedestrians, bicycle, and transit, evaluated with respect to the increase in demand from the proposed General Plan above existing conditions. Programmatic impacts are discussed in broad, qualitative terms. This assessment does not satisfy the need for project-level California Environmental Quality Act (CEQA) analysis for individual projects. Individual projects under the proposed General Plan will require a project-level analysis at the time they are proposed based on the details of these projects and the existing conditions at the time such projects are pursued.

SUMMARY OF IMPACTS

Future development under the proposed General Plan will change how the street system is utilized in Carlsbad. As such, the proposed General Plan prioritizes modes by street facility type and identifies performance standards associated with prioritized modes. The County of San Diego has opted out of the CMP requirements, therefore this criteria does not apply and is not discussed further.

IMPACTS

Impact 3.13-1 The proposed General Plan would exceed an applicable plan, ordinance, or policy establishing measures of effectiveness 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 as defined below:

- **Degradation of level of service to below a LOS D for a prioritized travel mode at a facility that is not exempt from the LOS D standard; or**
- **Adds prioritized travel mode usage to a facility that is not exempt from the LOS D standard and is operating at a level of service below LOS D, or**
- **Degrades traffic on a Caltrans' facility to a level of service below LOS C (Caltrans' acceptable operating standard) or adds traffic to a Caltrans' facility operating at an unacceptable LOS D, E, or F (*Significant and Unavoidable*)**

To evaluate the effects of the proposed General Plan to the city's transportation system, the prioritized travel modes were evaluated: a) vehicles, b) pedestrians, c) bicycles, and d) transit. The results are summarized below:

a) Vehicle Levels of Service

Table 3.13-10 summarizes the future traffic volumes on vehicle-prioritized streets with buildout of the proposed General Plan (and accounting for other regional growth in the area). The future traffic volumes were developed using the SANDAG travel demand forecasting model (Series 12) and incorporates the proposed General Plan land use information and the proposed General Plan street network. As shown in the table, at buildout of the proposed General Plan, vehicle level of service on vehicle-prioritized streets is anticipated to operate at LOS D or better, except for the following streets, which are anticipated to operate below LOS D, which is considered a significant impact.

- Two segments of Palomar Airport Road
- One segment of La Costa Avenue
- One segment of El Camino Real
- I-5 through Carlsbad
- SR-78 near the City

The facilities listed above would generally be congested during peak periods; however, during most hours of the day, the facility would have sufficient capacity to serve the vehicle demand. The city does not have regulatory authority over Interstate-5 or SR-78 and has no control over managing traffic on those facilities. The Carlsbad arterial streets listed above would need to be widened beyond their four- or six-lane cross-sections to operate at the city's standard for vehicle level of service on those facilities (LOS D or better); however, creating streets wider than six lanes is inconsistent with the goals of the proposed General Plan. In addition, widening these streets beyond six lanes creates new challenges for intersection operations, maintenance, and storm water management. Therefore, rather than widening these arterial streets, the proposed General Plan promotes implementation of transportation demand management (e.g. promote travel by modes other than the single-occupant vehicle), transportation system management (e.g. signal timing coordination and improved transit service) and livable streets techniques to better manage the transportation system as a whole. The impacts to I-5 and SR-78 are considered significant and unavoidable, as the city cannot guarantee implementation of improvement to reduce impacts to a facility they do not control. While the proposed General Plan policies would reduce these impacts, they would remain significant and unavoidable.

Table 3.13-10: Future Street Operations

Street	*From*	*To*	*Number of Lanes*	*Classification*	*Future ADT*	*Future LOS*
City of Carlsbad Streets						
Cannon Road	I-5	El Camino Real	4	Arterial	33,420	LOS D
Cannon Road	El Camino Real	College Blvd	4	Arterial	17,770	LOS B
College Blvd	Palomar Airport Rd	El Camino Real	4	Arterial	16,410	LOS B
College Blvd	N. City Limits	Cannon Rd	4	Arterial	34,570	LOS D
Palomar Airport Road	I-5	College Blvd	6	Arterial	58,430	LOS E
Palomar Airport Road	College Blvd	El Camino Real	6	Arterial	45,360	LOS C
Palomar Airport Road	El Camino Real	Melrose Dr	6	Arterial	69,190	LOS F
Palomar Airport Road	Melrose Dr	W. City Limits	6	Arterial	46,580	LOS C
La Costa Ave	I-5	El Camino Real	4	Arterial	39,180	LOS E
El Camino Real	N. City Limits	Tamarack Ave	6	Arterial	37,150	LOS C
El Camino Real	Tamarack Ave	Cannon Rd	6	Arterial	35,020	LOS C

Table 3.13-10: Future Street Operations

Street	*From*	*To*	*Number of Lanes*	*Classification*	*Future ADT*	*Future LOS*
El Camino Real	Cannon Rd	College Blvd	6	Arterial	35,600	LOS C
El Camino Real	College Blvd	Palomar Airport Rd	6	Arterial	49,980	LOS C
El Camino Real	Palomar Airport Rd	La Costa Ave	6	Arterial	63,600	LOS F
El Camino Real	La Costa Ave	Rancho Santa Fe Rd	6	Arterial	43,600	LOS C
Rancho Santa Fe Rd	Palomar Airport Rd	El Camino Real	6	Arterial	30,110	LOS B
Caltrans Roadways						
Interstate 5 (mixed flow lanes)	Las Flores Dr	Carlsbad Village Dr	8	Freeway	207,800	LOS F
Interstate 5 (mixed flow lanes)	Carlsbad Village Dr	Tamarack Ave	8	Freeway	207,500	LOS F
Interstate 5 (mixed flow lanes)	Tamarack Ave	Cannon Rd	8	Freeway	216,000	LOS F
Interstate 5 (mixed flow lanes)	Cannon Rd	Palomar Airport Rd	8	Freeway	221,700	LOS F
Interstate 5 (mixed flow lanes)	Palomar Airport Rd	Poinsettia Ln	8	Freeway	213,800	LOS F
Interstate 5 (mixed flow lanes)	Poinsettia Ln	La Costa Ave	8	Freeway	204,700	LOS F
SR-78 (mixed flow lanes)	I-5	Jefferson	6	Freeway	174,900	LOS F
SR-78 (mixed flow lanes)	Jefferson	El Camino Real	6	Freeway	155,300	LOS E
SR-78 (mixed flow lanes)	El Camino Real	College Blvd	6	Freeway	172,100	LOS F

Proposed General Plan Policies that Reduce the Impact

Mobility Element Policies

3-P.4 Implement the city's MMLOS methodology by evaluating level of service (LOS) for prioritized modes. Maintain LOS D or better only for the prioritized modes of travel by street typology as outlined in Table 3-1 and Figure 3-1 [of the proposed General Plan].

3-P.6 Utilize transportation demand management strategies, non-automotive enhancements (bicycle, pedestrian, transit, train, trails, and connectivity), and traffic signal management techniques as long-term transportation solutions and traffic mitigation measures to carry out the Carlsbad Community Vision.

3-P.7 Develop and maintain a list of LOS exempt intersections and streets approved by the City Council. For LOS exempt intersections and streets, the city will not implement motor vehicle capacity improvements to maintain the LOS standard outlined in Policy 3-P.4 if such improvements are beyond what is identified as appropriate at build out of the General Plan; however, other non-vehicle capacity-building improvements may be required to improve mobility, to the extent feasible, and/or to implement the livable streets goals and policies of this Mobility Element. To be considered LOS exempt, an intersection or street must be identified as built-out by the City Council because:

a. Acquiring the rights of way is not feasible; or

b. The proposed improvements would significantly impact the environment in an unacceptable way and mitigation would not contribute to the nine core values of the Carlsbad Community Vision; or

c. The proposed improvements would result in unacceptable impacts to other community values or General Plan policies; or

d. The proposed improvements would require more than three through travel lanes in each direction.

3-P.8 Allow the following streets to be LOS exempt facilities from the LOS standard identified in Policy 3-P.4, subject to the requirements described in Policy 3-P.7:

- La Costa Avenue between Interstate-5 and El Camino Real
- El Camino Real between Palomar Airport Road and La Costa Avenue
- Palomar Airport Road between Interstate-5 and College Boulevard
- Palomar Airport Road between El Camino Real and Melrose Drive

3-P.9 Require new development that adds traffic to LOS-exempt locations (consistent with 3-P.7) to implement transportation demand management strategies that

reduce the reliance on the automobile and assists in achieving the city's livable streets vision.

3-P.10 Update the Citywide Facilities and Improvements Plan to ensure consistency with the General Plan. This includes updating the circulation LOS standards methodologies to reflect a more balanced/multimodal approach.

3-P.15 Encourage Caltrans, SANDAG, NCTD, and adjacent cities to improve regional connectivity and service consistent with regional planning efforts. This includes expansion of Interstate-5 with two HOV lanes in each direction and associated enhancements, a Bus Rapid Transit (BRT) route along Palomar Airport Road, shuttle bus services from COASTER stations, and other enhancements to improve services in the area.

Mitigation Measures

The city shall implement all policies identified in the Mobility Element to reduce the demand for vehicles on I-5. However, even with implementation of these policies, the impact will remain significant and unavoidable.

b) Pedestrian Levels of Service

For the future pedestrian LOS assessment, it is assumed that the existing pedestrian facilities would remain into the future, which is a conservative approach for this assessment, since the LOS methodology is based on the quality of the facility (i.e. it is not based on the number of pedestrians using it). As shown in Table 3.13-8, the following street segments currently do not provide acceptable pedestrian levels of service:

- Carlsbad Boulevard – La Costa Avenue to Poinsettia Lane
- Carlsbad Boulevard – Poinsettia Lane to Palomar Airport Road
- Carlsbad Boulevard – Palomar Airport Road to Cannon Road
- Carlsbad Boulevard – Cannon Road to Tamarack Avenue

The proposed General Plan will add pedestrian activity to these corridors; however, the proposed General Plan includes policies to improve pedestrian infrastructure in these areas. Therefore, this impact is considered less than significant.

Proposed General Plan Policies that Reduce the Impact

Mobility Element Policies

In addition to policies in (a) listed above, the following policies would reduce potential impacts to pedestrian levels of service.

3-P.2 Integrate livable streets in all capital improvement projects, where applicable, as well as new development projects.

3-P.3 Apply and update the city's multi-modal level of service (MMLOS) methodology and guidelines that reflect the core values of the Carlsbad Community Vision related to transportation and connectivity. Utilize the MMLOS methodology to evaluate impacts of individual development projects and amendments to the General Plan on the city's transportation system.

3-P.11 Evaluate implementing a road diet to three lanes or fewer for existing four-lane streets currently carrying or projected to carry 25,000 average daily traffic volumes or less in order to promote biking, walking, safer street crossings, and attractive streetscapes.

3-P.22 Identify and implement necessary pedestrian improvements on pedestrian-prioritized streets with special emphasis on providing safer access to schools, parks, community and recreation centers, shopping districts, and other appropriate facilities.

3-P.25 Evaluate incorporating pedestrian and bicycle infrastructure within the city as part of any planning or engineering study, private development, or capital project where bicyclists or pedestrians are a prioritized or non-prioritized mode.

Mitigation Measures

None required.

c) Bicycles Levels of Service

For the future bicycle LOS assessment, it is assumed that the existing facilities would remain into the future, which is a conservative approach for this assessment since the LOS methodology is based on the quality of the facility (e.g. it is not based on the number of bicycles using it). As shown in Table 3.13-7, the following street segment currently does not provide acceptable bicycle levels of service:

- Carlsbad Boulevard – Poinsettia Lane to Palomar Airport Road

The proposed General Plan will add bicycle activity to this facility. Implementation of the proposed General Plan will enable the city to improve the bicycle infrastructure along Carlsbad Boulevard from Poinsettia Lane to Palomar Airport Road, resulting in a less than significant impact.

Proposed General Plan Policies that Reduce the Impact

Land Use and Community Design Element Policies

2-P.48 Improve beach access through a variety of mechanisms, including [relevant sub-bullet included]:

c. Identify and implement more frequent pedestrian crossings along Carlsbad Boulevard. Identify and prioritize crossings from residential neighborhoods and existing bicycle and pedestrian trails.

2-P.52 Plan and design Carlsbad Boulevard and adjacent public land (Carlsbad Boulevard coastal corridor) according to the following guiding principles [relevant sub bullet included]:

j. Reimagining of Carlsbad Boulevard shall be visionary. The reimagined Carlsbad Boulevard corridor will incorporate core community values articulated in the Carlsbad Community Vision by providing: a) physical connectivity through multi-modal mobility improvements including bikeways, pedestrian trails, and a traffic-calmed street; b) social connectivity through creation of memorable public spaces; and c) economic vitality through a combination of visitor and local-serving commercial, civic, and recreational uses and services.

Mobility Element Policies

Policies 3-P.2, 3-P.3, 3-P.4, 3-P.11 and 3-P.25 listed above.

Mitigation Measures

None required.

d) Transit Levels of Service

For the future transit LOS assessment, it is assumed that the existing facilities would remain into the future along the evaluated transit routes, which is a conservative approach for this assessment. since the LOS methodology is based on the quality of the facility and service (i.e. not based on the number transit users). As shown in Table 3.13-9, all of the transit-prioritized corridors currently operate below LOS D. Proposed public transportation improvements reflected in the Mobility Element of the proposed General Plan include coast rail improvements, improvements to the COASTER service, and a proposed rapid bus between Carlsbad and San Marcos. Implementation of the proposed General Plan policies referenced below will improve transit LOS; therefore, the proposed General Plan would result in a less than significant impact.

Proposed General Plan Policies that Reduce the Impact

Mobility Element Policies

In addition to policies 3-P.2, 3-P.3, 3-P.4, the following policies would reduce potential impacts to transit levels:

3-P.5 Require developers to construct or pay their fair share toward improvements for all modes consistent with this Mobility Element, the Growth Management Plan, and specific impacts associated with their development.

3-P.31 Partner with other agencies and/or developers to improve transit connectivity within Carlsbad. As part of a comprehensive transportation demand management (TDM) strategy and/or with transit oriented development (TOD), a shuttle system could be established that connects destinations and employment centers like LEGOLAND, hotels, the Village, McClellan-Palomar Airport, business parks, the COASTER and Breeze transit stations, and key destinations along the coast. The system could incorporate shuttle service in adjacent cities to maximize connectivity.

3-P.32 Encourage NCTD, SANDAG and other transit providers to provide accessibility for all modes of travel to the McClellan-Palomar Airport area.

3-P.33 Coordinate with NCTD to improve the quality of bus stop facilities in the city.

Mitigation Measures

None required.

Impact 3.13-2 The proposed General Plan may 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. (*Less than Significant)*

The McClellan-Palomar airport is located within the city limits. As such, the proposed General Plan has the potential to create land uses that may not be compatible with the airport use. However, given the nature of the proposed General Plan and the nature of services provided at the McClellan-Palomar airport, the proposed General Plan is not expected to result in any changes to air traffic patterns or safety. Therefore, this impact is considered less than significant.

Proposed General Plan Policies that Reduce the Impact

Land Use and Community Development Element

2-P.35 Require new development located in the Airport Influence Area (AIA) to comply with applicable land use compatibility provisions of the McClellan–Palomar Airport Land Use Compatibility Plan (ALUCP) through review and approval of a site development plan, or other development permit. Unless otherwise approved by City Council, development proposals must be consistent or conditionally consistent with applicable land use compatibility policies with respect to noise, safety, airspace protection, and overflight notification, as contained in the McClellan-Palomar ALUCP. Additionally, development proposals must meet Federal Aviation Administration (FAA) requirements with respect to building height as well as the provision of obstruction lighting when appurtenances are permitted to penetrate the transitional surface (a 7:1 slope from the runway primary surface). Consider San Diego County Airport Land Use Commission recommendations in the review of development proposals.

2-P.36 Coordinate with the San Diego County Airport Land Use Commission and the FAA to protect public health, safety and welfare by ensuring the orderly operation of the airport and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around the airport.

2-P.37 Prohibit the geographic expansion of McClellan-Palomar Airport unless approved by a majority vote of the Carlsbad electorate. (Section 21.53.015, Carlsbad Municipal Code.)

Mobility Element Policies

3-P.40 Work with San Diego County and other agencies to ensure continued safe and efficient operation of the McClellan Palomar Airport without expansion, consistent with the Carlsbad Community Vision and existing city policy.

Public Safety Element Policy

6-P.18 Ensure that development in the McClellan-Palomar Airport Influence Area is consistent with the land use compatibility policies contained in the McClellan-Palomar Airport Land Use Compatibility Plan.

Mitigation Measures

None required.

Impact 3.13-3 The proposed General Plan would not substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment). (*Less than Significant)*

The proposed General Plan has been developed with an emphasis on livable streets, which, by their nature, ensure that the city's transportation system is compatible with the adjacent land uses. Additionally, the city's truck route designations ensure that those streets are designed to serve those vehicles. Implementation of the proposed General Plan will ensure that design hazards do not occur and would result in a less than significant impact.

Proposed General Plan Policies that Reduce the Impact

In addition to policy 3-P.10 listed above, the following policies would reduce potential impacts.

Mobility Element Policies

3-P.12 Design new streets, and explore funding opportunities for existing streets, to minimize traffic volumes and/or speed, as appropriate, within residential neighborhoods without compromising connectivity for emergency first responders, bicycles, and pedestrians consistent with the city's Carlsbad Active Transportation Strategies. This should be accomplished through management

and implementation of livable streets strategies and such programs like the Carlsbad Residential Traffic Management Plan.

3-P.13 Consider innovative design and program solutions to improve the mobility, efficiency, connectivity, and safety of the transportation system. Innovative design solutions include, but are not limited to, traffic calming devices, roundabouts, traffic circles, curb extensions, separated bicycle infrastructure, pedestrian scramble intersections, high visibility pedestrian treatments and infrastructure, and traffic signal coordination. Innovative program solutions include, but are not limited to, webpages with travel demand and traffic signal management information, car and bike share programs, active transportation campaigns, and intergenerational programs around schools to enhance safe routes to schools. Other innovative solutions include bicycle friendly business districts, electric and solar power energy transportation systems, intelligent transportation systems, semi-or full autonomous vehicles, trams, and shuttles.

3-P.16 Engage Caltrans, the Public Utilities Commission, transit agencies, the Coastal Commission, and railroad agency(s) regarding opportunities for improved connections within the city, including:

- Improved connections across the railroad tracks at Chestnut Avenue and other locations
- Completion and enhancements to the Coastal Rail Trail and/or equivalent trail along the coastline
- Improved connectivity along Carlsbad Boulevard for pedestrians and bicyclists, such as a trail
- Improved access to the beach and coastal recreational opportunities
- Improved crossings for pedestrians across and along Carlsbad Boulevard

Mitigation Measures

None required.

Impact 3.13-4 The proposed General Plan would not result in inadequate emergency access. (*Less than Significant)*

The proposed General Plan is presented at a programmatic level. Emergency accessibility typically is assessed at a project-level. Implementation of the following proposed General Plan policies will ensure that inadequate emergency access does not occur and will reduce the impact to a less-than-significant level.

Proposed General Plan Policies that Reduce the Impact

Mobility Element Policies

In addition to Policy 3-P.12 listed above, the following policies would reduce potential impacts to emergency access.

Public Safety Element Policies

6-P.29 Encourage physical planning and community design practices that deter crime and promote safety.

6-P.30 Maintain close coordination between planned improvements to the circulation system within the city and the location of fire stations to assure adequate levels of service and response times to all areas of the community.

6-P.33 Enforce the Uniform Building and Fire codes, adopted by the city, to provide fire protection standards for all existing and proposed structures.

Mitigation Measures

None required.

Impact 3.13-5 The proposed General Plan would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (*Less than Significant)*

The proposed General Plan is centered on a multi-modal approach, which will improve the performance and safety of transit, bicycle, and transit facilities. Implementation of the proposed General Plan policies will ensure that impacts to the performance and safety of public transit, bicycle and pedestrian facilities do not occur and will reduce the impact to a less-than-significant level.

Proposed General Plan Policies that Reduce the Impact

Mobility Element Policies

In addition to policies 3-P.2, 3-P.3, 3-P.4, 3-P.5, 3-P.6, 3-P.10, 3-P.11, 3-P.12, 3-P.13, 3-P.15, 3-P.16, 3-P.22, 3-P.25, 3-P.31, 3-P.32 and 3-P.33 listed above, the following policies would reduce potential impacts to the performance or safety of public transit, bicycle and pedestrian facilities.

3-P.1 Implement a comprehensive livable streets network. This network, as outlined in Table 3-1 and shown on Figure 3-1 [of the proposed General Plan], prioritizes transportation modes by street typology and accessibility to users of the system.

3-P.18 Support pedestrian and bicycle facilities at all Interstate-5 and State Route 78 interchanges.

3-P.19 Maintain the city's scenic transportation corridors as identified in the Carlsbad Scenic Corridor Guidelines.

3-P.20 Update the pedestrian, trails and bicycle master plans, as necessary, to reflect changes in needs, opportunities and priorities.

3-P.21 Implement the projects recommended in the pedestrian, trails and bicycle master plans through the city's capital improvement program, private development conditions and other appropriate mechanisms.

3-P.23 Implement the Safe Routes to School and Safe Routes to Transit programs that focus on pedestrian and bicycle safety improvements near local schools and transit stations. Prioritize schools with access from arterial streets for receiving Safe Routes to School projects.

3-P.24 Improve and enhance parking, connectivity, access, and utilization for pedestrians and bicycles to COASTER stations, utility corridors, and open spaces consistent with city planning documents.

3-P.26 Complete the Carlsbad Active Transportation Strategies to assist in identifying livable street implementation parameters within the city.

3-P.27 Engage the community in the policy setting and planning of street, pedestrian, bicycle, transit, and connectivity studies, plans and programs.

3-P.28 Require developers to improve pedestrian and bicycle connectivity consistent with the city's pedestrian and bicycle master plans and trails master planning efforts. In addition, new residential developments should demonstrate that a safe route to school and transit is provided to nearby schools and transit stations within a half mile walking distance.

3-P.29 Work with existing neighborhoods and businesses to improve pedestrian and bicycle connectivity and safety consistent with the city's pedestrian and bicycle master plans and trails master planning efforts.

3-P.30 Actively pursue grant programs such as SANDAG's Active Transportation Grant Program and Smart Growth Incentive Program to improve non-automotive connectivity throughout the city. The emphasis of grant-funded projects shall be on implementation, which includes planning documents that guide and prioritize implementation, programs that encourage the use of active transportation modes, education for the use of active transportation modes, or physical improvements themselves.

Mitigation Measures

None required.

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