



Oceanside General Plan CIRCULATION ELEMENT

September 2012



OCEANSIDE GENERAL PLAN CIRCULATION ELEMENT UPDATE

City of Oceanside, California

Prepared for
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CIRCULATION ELEMENT

1. INTRODUCTION

The Circulation Element provides goals, objectives, and policies to maintain and improve the City of Oceanside's (the "City") transportation system and enhance travel choices for current and future residents, visitors, and workers. These policies are complemented by the policies in the Land Use, Noise, Recreational Trails, and Community Facility Elements on related topics such as smart growth and management of public space. Recognizing the relationship between transportation and these related topics is critical to improving mobility and accessibility within the city.

The Circulation Element was last adopted by City Council in 1995. It has had some amendments in response to the changes in the City's land uses and network necessities. The Circulation Element was also reformatted and additional information added in 2002.

The present challenges, opportunities, and transportation issues of interest to the City are addressed in this element. These include but are not limited to:

- Enhancing the City's corridors for all modes of transportation;
- Increasing bicycle and pedestrian connections, routes and facilities;
- Refining the City's traffic calming program to promote safer streets for motorists, pedestrians, and bicyclists;
- Identifying and incorporating Intelligent Transportation System (ITS) technology for the City;
- Increasing support of Transportation Demand Management programs; and
- Improving the efficiency of the existing transportation system.

The City of Oceanside is served by a diverse circulation system consisting of roadways, public transit, rail service, airport, and pedestrian and bicycle facilities. A well-balanced and multimodal transportation system is considered integral to the City's efforts to sustain and enhance the quality of life and key to its future economic growth. Achieving such a system requires integrating land use and transportation planning, and implementing a range of improvements that enhance connectivity, livability, and vitality.

1.1 Purpose and Authority

The following is a list of the statutory requirements for a General Plan Circulation Element.

Government Code Section	Requirements
§65302(b)	The general plan requires the inclusion of a circulation element.
§65302(b)	A circulation element shall consist of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan.
§65302(b)(2)(A)	Commencing January 1, 2011, upon any substantive revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs for all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.

The Circulation Element shall contain objectives, policies, principles, plan proposals, and/or standards for planning the infrastructure to support the circulation of people, goods, energy, water, sewage, storm drainage, and communications. Mandatory circulation element issues as defined in Statute 65302(b) include: major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities. Additionally, Statue 65302(b)(2)(A) requires the Circulation Element be modified to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways. The statute defines “all users of streets, roads, and highways” as “bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.” Transportation networks should additionally consider pedestrian, bicycle, and transit routes, which may not always be located on or along streets, roads, and highways.

Circulation elements should also take into consideration the provision of safe and convenient travel that is suitable to the rural, suburban, or urban context of the local jurisdiction’s General Plan. This could include policies and implementation measures for both retrofitting and developing streets to serve multiple modes of travel and the development of multimodal transportation network design standards based on street types.

1.2 Scope and Content

The Master Transportation Plan, as Chapter 3 in this element, serves as the Circulation Element's main policy tool for designating future road improvements, extensions, and special intersection design treatments.

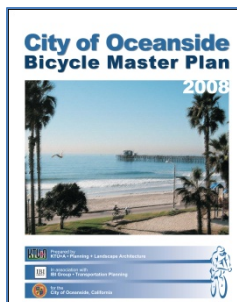
The Circulation Element shall also:

- Identify the transportation needs and issues within the City and those regional relationships that affect the City's transportation system.
- Establish goals for the element with objectives and policies to attain those goals.
- Describe the proposed circulation system in terms of geometric design elements, operating characteristics, and limits of operation including current standards, guidelines, and accepted criteria for the location, design, and operation of the transportation system.
- Consider transportation modes such as carpools, buses, and mass transit as essential in providing services and access to facilities.
- Establish policies that coordinate the circulation system with planned land uses and provide direction for future decision making in the realization of the Circulation Element goals.

1.3 Related Plans and Programs

There are several existing plans and programs prepared by various agencies that are directly applicable to the aims and objectives of the Circulation Element. These plans and programs have been enacted through federal, State, and local legislation and are administered by agencies with powers to enforce federal, State, and local laws. Plans and programs related to the Circulation Element include the following:

CITY OF OCEANSIDE 2008 BICYCLE MASTER PLAN UPDATE

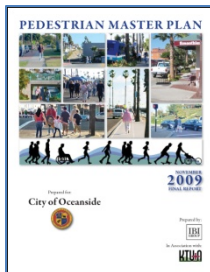


This study is a comprehensive update of the 1995 City of Oceanside General Plan Circulation Element – Recreational Trails Element (Chapter 6, Bicycle Facilities). The Bicycle Master Plan's goals and objectives include establishing facility types to be implemented and identifying points where the City's bikeway system could integrate with the existing San Diego County regional bikeway system.

The Bicycle Master Plan seeks to maximize the efficiencies offered by multimodal connections between mass transit and bikeways, and to promote a viable alternative to automobile travel in a climate particularly conducive to bicycle transportation. It also seeks to provide a more convenient bikeway system for cyclists who do not have access to motor

vehicles. The Bicycle Master Plan was completed in December 2008. Appendix A contains a copy of the Bicycle Master Plan.

CITY OF OCEANSIDE 2009 PEDESTRIAN MASTER PLAN UPDATE



This study is also a comprehensive update of the 1995 City of Oceanside General Plan Circulation Element – Recreational Trails Element as Chapter 7. The Pedestrian Master Plan’s goals and objectives seek to enhance pedestrian mobility by providing pedestrian planning that enhances design standards, the installation and maintenance of pedestrian facilities, and overall safe pedestrian circulation throughout the City. The Oceanside Pedestrian Master Plan update was completed in November

2009. Appendix B contains a copy of the Pedestrian Master Plan.

2030 SAN DIEGO REGIONAL TRANSPORTATION PLAN: PATHWAYS FOR THE FUTURE

The 2030 Regional Transportation Plan (RTP) is based on the adopted General Plans of the region’s cities and the County. Developed by the San Diego Association of Governments (SANDAG) and approved in 2007, the 2030 San Diego RTP was developed to meet the region’s long-term mobility needs, better connect transportation and land use policy decisions, and create a transportation network that will serve the people of this region well into the 21st century. The 2030 RTP’s vision for improving mobility and travel in the San Diego region supports the region’s strategy to promote smarter, more sustainable growth.

2050 SAN DIEGO REGIONAL TRANSPORTATION PLAN

The 2050 Regional Transportation Plan is the blueprint for the regional transportation system that further enhances the quality of life, promotes sustainability, and offers more mobility options for people and goods. The SANDAG board of directors has adopted a Hybrid Scenario for the preferred revenue constrained transportation network scenario for the 2050 RTP. The Hybrid Scenario contains a variety of multimodal projects from the initial alternative Revenue Constrained Scenarios, with a primary focus on the Highway Emphasis and Fusion Scenarios. The 2050 RTP was approved by SANDAG in October 2011.

RIDING TO 2050, SAN DIEGO REGIONAL BICYCLE PLAN

The San Diego Regional Bicycle Plan was adopted to provide a regional strategy for making the bicycle a useful form of transportation for everyday travel. It was developed to support the implementation of both the Regional Comprehensive Plan and the Regional Transportation Plan. As an integral part of the 2050 RTP, the Plan will become part of the Sustainable Communities Strategy mandated by Senate Bill 375. The Plan provides

detailed information on the structure of the Regional Bicycle Network, the supporting policies and programs, and the benefits of implementing the Plan.

SAN DIEGO AIR POLLUTION CONTROL DISTRICT REGIONAL AIR QUALITY STRATEGY (2009)

The San Diego County Air Pollution Control District (the “District”) is responsible for the overall development and implementation of the Regional Air Quality Strategy (RAQS). The RAQS for the San Diego region control measures focus on emission sources under the District’s authority, specifically stationary emission sources and some area-wide sources. The emission inventories and emission projects in the RAQS reflect the impact of all emission sources and all control measures including those under the jurisdiction of the California Air Resources Board (e.g., on-road motor vehicles, off-road vehicles and equipment, and consumer products) and the U.S. Environmental Protection Agency (e.g., aircraft, ships, trains, and pre-empted off-road equipment).

CITY OF OCEANSIDE THOROUGHFARE FEE ORDINANCE

The purpose of Thoroughfare Fee Ordinance No. 83-01 is to make provisions for assessing and collecting fees as a condition of approval of a final subdivision or parcel map, or as a condition of issuing a building permit that will result in an increase in average daily trips for the purpose of defraying the actual or estimated costs of constructing or improving existing bridges or thoroughfares.

CITY OF OCEANSIDE TRAFFIC SIGNAL FEE ORDINANCE

The purpose of the Traffic Signal Fee Ordinance is to provide a fair mechanism for defraying public costs associated with the actual or estimated cost of construction of traffic signals pursuant to the requirements of Government Code §66000 et seq. and §66484, and Public Resources Code §21000 et seq., and Oceanside City Ordinance No. 87-19.

1.4 Relationship to Other General Plan Elements

In accordance with State planning law, the Circulation Element, although independent, must be consistent with the other General Plan elements. All elements of the General Plan are interrelated to a degree, and certain goals and policies of each element may also address issues that are the major subject of other elements. The Circulation Element relates most closely to the Land Use, Noise, Environmental Resource Management, Recreational Trails, and Community Facilities Elements.

Planned development identified in the Land Use Element is the basis for determining future road improvements and connections; therefore, the Land Use Element is directly linked to the Circulation Element. For example, the circulation policies and plans identify the improvements to the roadway system that will be required in order to serve traffic generated by the uses permitted in

the Land Use Element. In addition, the Circulation Element promotes alternative transportation modes to minimize the regional impacts of planned local development.

The Noise Element contains policies and plans aimed to ease the adverse effects of noise on the community that are directly attributable to the future transportation plans contained in the Circulation Element. Noise exposure is generally a key consideration when locating and designing new development along arterials and other transportation related networks.

The Environmental Resource Management and Recreational Trail Elements (a sub-element of this Circulation Element) contain provisions for the preservation of natural areas and non-vehicular transportation. Many open space areas are reserved for the public benefit, such as parks. The circulation system also contains provisions and standards for movement of non-motorized traffic, such as pedestrians, bicyclists, and equestrians. Open space areas are often interconnected with other land uses through the utilization of trails for the exclusive use by non-motorized traffic.

The Community Facilities Element provides a comprehensive listing of all public facilities (which includes the transportation network) that are needed to meet a certain service level demanded by the population. With population growth and given development patterns, the circulation system is evaluated and the potential impacts on the transportation facilities are identified. Therefore, improvements to the circulation system are planned as a means of accommodating new growth and eliminating future deficiencies.

2. LONG RANGE POLICY DIRECTION

The following is a brief description of the potential issues in the circulation system that must be considered in order to achieve the overall goals and objectives of the Circulation Element.

1. The City of Oceanside has several older residential neighborhoods and areas with small businesses that are located near existing roadways that are exposed to moderate noise levels. In new areas of development, these concerns are being addressed through the use of perimeter walls such as sound walls. However, walls are not always the most feasible noise control measure. There must be intermittent openings allowed for driveway access, line-of-sight viewing for motorists, and pedestrian access. Therefore, roadway improvements must critically examine various secondary noise control options (speed limits, truck exclusion, residential relocation, conversion to less sensitive land uses, landscaping, etc.). In certain areas, a buffer zone with increased setback areas may be needed.
2. In order to create a more coordinated and efficient roadway system, some roadway extensions and upgrades have been recommended which will go through residential areas, agricultural areas, or environmentally sensitive areas. Prior to adoption of a final roadway alignment, thorough environmental/engineering studies should be conducted. The decision to commence with roadway construction should occur only when the level of service on the road and/or at nearby intersections is expected to degrade to an unacceptable level by a proposed development and warrants the construction of the roadway. In some cases, the level of service of intersections or segments may already be unacceptable.
3. The impact of proposed roadway improvements may affect residential, commercial, industrial, and other types of structures in currently developed areas. Various existing land uses may require relocation and/or the reduction of setback areas along roadways designated as requiring additional capacity. In cases where the impacts would be extremely disruptive, all options to roadway widening should be explored or the use of the Transportation Management Center (TMC). These options can include elimination of on-street parking with a program of restriping, transportation demand management strategies, or using the TMC to manage the transportation system through adaptive signals on congested corridors.
4. The City of Oceanside is fortunate to have considerable recreational, open space, agricultural, and historic resources. These special resources also present a challenge to the circulation system. A delicate balance must be achieved in allowing adequate roadways to be implemented, while at the same time present the least amount of disruption of the natural terrain, vegetation, and character of an area. The Environmental

CHAPTER HIGHLIGHTS

- Create a Multimodal System within the City of Oceanside
- Incorporate Complete Streets into the City of Oceanside's Transportation Network

Impact Report adopted for this Circulation Element addresses these concerns and suggests ways to mitigate potential impacts.

5. Like most coastal cities, Oceanside experiences heavy volume of through traffic due to its location in the Los Angeles-San Diego corridor, and due to major trip generators such as the Harbor, Camp Pendleton, recreation areas, and employment centers. The City can benefit by participating in regional corridor proposals to coordinate transportation planning efforts, such as bicycle corridors, commuter rail service from Oceanside to Escondido and Oceanside to San Diego in order to mitigate the negative impacts caused by through traffic.
6. Implementation of the 2030 Master Transportation Roadway Plan must, out of necessity, be closely related to funding opportunities. These are most notably represented by the Thoroughfare Fees that are collected from land development. Administration of the fees requires prioritization of the various elements of the Master Transportation Roadway Plan so that as fees are collected, they are expended on appropriate portions of the street plan that have the greatest need.
7. Implementation of the 2030 Master Transportation Roadway Plan may also have impacts on the structural integrity of the various street sections. As traffic volumes increase, as new streets are constructed, or as existing streets are extended, widened or lanes added, the Traffic Index may well indicate a need for a heavier structural section than had been previously planned. Failure to take note of such need may result in premature pavement failure, associated cost, stress, and negative public reaction. In analyzing funding sources such as Thoroughfare Fees, such pavement upgrading is an important cost factor that cannot be overlooked.

The Circulation Element must also plan for the development of multimodal transportation networks based on the requirements and objectives of Assembly Bill (AB) 1358, The California Complete Streets Act. A complete street should allow for all users to effectively travel by motor vehicle, foot, bicycle, and transit to reach key destinations within their community or region. It is recommended that all transportation projects, new or retrofit, shall be reviewed for opportunities to improve safety, access, and mobility for all travelers and recognize pedestrian, bicycle, and transit modes as integral elements of the transportation system. In addition, the City of Oceanside can use complete streets design to construct networks that are accessible to all modes and all users no matter their age or ability.

The City of Oceanside strives to develop a network of complete streets as is outlined in the various chapters (Public Transit, Bicycle, & Pedestrian) within this Circulation Element and additional adopted planning documents (Bicycle and Pedestrian Master Plans) that support the complete streets concept. The City of Oceanside's Circulation Element strives to follow the suggestions recommended by the *Update to the General Plan Guidelines: Complete Streets and the Circulation Element*, December 2010 as relevant to

Oceanside. A copy of the possible policy areas and data collection technique considerations is included in Appendix C.

The goals, objectives, and policies set forth in the Circulation Element establish a citywide strategy to achieve long-term mobility and accessibility within the City of Oceanside.

GOAL 1: *A multimodal transportation system, which allows for the efficient and safe movement of all people and goods and which meets current demands and future needs of the population and projected land uses with minimal impact to the environment.*

GOAL 2: *Alternative modes of transportation to reduce the dependence on the automobile.*

GOAL 3: *Alternative transportation strategies designed to reduce traffic volumes and improve traffic flow.*

GOAL 4: *A citywide transportation system that integrates with the regional transportation system.*

GOAL 5: *A multimodal transportation system that creates a balance with preserving community values and maintaining public acceptance.*

OBJECTIVE:

- i.* Implement a circulation system that provides a high level of mobility, efficiency, access, safety, and environmental consideration that accommodates all modes of travel such as vehicular, truck, transit, bicycle, pedestrian, and rail.

POLICIES:

The following policies are intended to direct City efforts to promote the integration of the circulation system with citywide land use policies and the regional transportation system:

- 2.1** The Master Transportation Roadway Plan shall be designed to provide the facilities and level of access necessary to serve the existing and proposed land uses designated in the Land Use Element of the General Plan and to satisfy regional travel needs.
- 2.2** The Master Transportation Roadway Plan shall be designed to provide transportation facilities that support a balanced multi-modal transportation network to serve vehicular, transit, pedestrian, bicycle, equestrian, and freight movement.
- 2.3** The City shall cooperate with adjacent communities and agencies such as San Diego County, Carlsbad, Vista, California Department of Transportation (Caltrans), North County Transit District, United

- States Marine Corps Camp Pendleton, and the San Diego Association of Governments (SANDAG) to provide the maximum compatibility of adopted circulation elements and regional facility plans.
- 2.4** The City's circulation system shall promote efficient intra- and inter-city travel with minimum disruption to established and planned residential neighborhoods.
- 2.5** The City will strive to incorporate complete streets throughout the Oceanside transportation network which are designed and constructed to serve all users of streets, roads and highways, regardless of their age or ability, or whether they are driving, walking, bicycling, or using transit.
- 2.6** The City will strive to stay up-to-date with legislation and emerging technologies as it relates to complete streets and multimodal analysis.

3. MASTER TRANSPORTATION ROADWAY PLAN

The Master Transportation Roadway Plan chapter focuses on providing the guidelines to provide a network of roadways throughout the City which form the transportation network. This is important since the street system is used for vehicular, bicycle, transit, pedestrian, and goods movement. The City of Oceanside strives to create a network of complete streets that creates an environment for all users of the system. The Circulation Element and this Master Transportation Roadway Plan chapter are designed to effectively promote policies and guidelines that support the various forms of transportation available in the City of Oceanside. This chapter primarily focuses on mobility by use of the automobile; however, the design guidelines and policies for a multimodal network of complete streets are considered throughout the chapter.

The information contained within this chapter is intended to encourage design standards that promote efficiency and safety of the circulation network.

3.1 Policies and Implementation Strategies

GOAL 1: *A transportation network that supports safe and efficient travel for all modes of transportation.*

GOAL 2: *A transportation network that is designed to accommodate the existing and future growth of the City of Oceanside.*

Level of Service and Design Standards

OBJECTIVE:

- i.* Aim for an acceptable Level of Service (LOS) D or better on all Circulation Element roadways on an average daily basis and at intersections during the AM and PM peak periods.
- ii.* Ensure that all streets within the City achieve the City's mobility goals and design standards as highlighted throughout this chapter.

POLICIES:

- 3.1** In order to achieve the level of service goals, the City shall develop and institute a long-range funding program in which new land development shall bear its share of the associated costs and improvement requirements. Where existing deficiencies occur, the City will have to find funding sources to fund the improvements. Reciprocal agreements with neighboring cities must be developed

CHAPTER HIGHLIGHTS

- Policies and Implementation Strategies
- Roadway Classifications
- Existing Circulation System
- Regional Modeling Process
- Roadway Design Standards
- LOS Analysis Methodology
- Proposed 2030 Master Transportation Plan
- Recommended Overriding Considerations
- Traffic Impact Study Guidelines

as needed to achieve acceptable levels of service due to development in adjacent cities.

- 3.2** The City shall adopt design standards for all streets in accordance with their functional classifications and recognized design guidelines. The City will use as its basis the design standards of Caltrans and the American Association of State and Highway Transportation Officials (AASHTO).
- 3.3** All streets within the City shall be designed in accordance with the adopted City of Oceanside design standards (shown in Table 3-1, page 24). Typical cross-sections and design criteria for the various street classifications are shown in the City Engineers Design and Processing Manual.
- 3.4** The City may permit construction of private streets within individual development projects, provided that:
- They are designed geometrically and structurally to meet City standards.
 - Only project occupants are served.
 - All emergency vehicle access requirements are satisfied.
 - The streets do not provide direct through route between public streets.
 - The Homeowners Association and/or property owners provide an acceptable program for financing regular street maintenance.
- 3.5** The City may allow private streets to be designed with narrower right-of-way, if approved after City review.
- 3.6** The City shall institute street access guidelines consistent with the street classifications. These shall be applied where feasible to all new developments. The following guidelines shall be used to define appropriate access:
- The City shall prohibit driveway access to prime arterials.
 - Driveway access to major arterials shall not be permitted unless there is no other reasonable means of access to the public street system. Where access to major arterials or secondary collectors must be allowed, it shall be limited through the use of medians and/or access controls to maintain street capacity.
 - Along major arterials, access spacing shall be a standard distance of 1,200 feet or more. Under special circumstances this distance may be reduced to a minimum of 600 feet where access is limited to right-in and right-out only. The above measurements shall be made from the ends of curb returns.
 - Along secondary collectors, the corresponding access spacing shall be 600 feet for the standard distance and a minimum of 300 feet for special circumstances where access is limited to

right-in and right-out only. The above measurements shall be made from the ends of curb returns.

- 3.7** The City shall adopt specific alignment plans when “standard equal-sided” widening is not adequate for future needs or when special conditions exist that require a detailed implementation plan. When necessary, specific alignment plans shall be prepared prior to the formal submittal of a development proposal. The need for such plans will be indicated by the following:
- Variable terrain or other sensitive areas that may preclude straightforward preparation of street improvement plans.
 - Alignments that are necessary because of existing street designs and/or land use configurations.
 - Development proposals that must deal with extraordinary physical or environmental features.
- 3.8** The City shall consider the feasibility of narrowing local streets that primarily serve residential neighborhoods or implementing other techniques to discourage cut through traffic in new residential neighborhood developments.
- 3.9** The City shall review all project applications and reduce or eliminate residential driveways on all collector and busier streets. Access to commercial projects shall be designed to meet the City’s standards and limited to the extent feasible. The City shall routinely review existing collector and higher streets to determine, as feasible, the closing, combining, or relocation of existing driveways.

Roadway Improvements

OBJECTIVE:

- iii.* Construct the roadway network in phases consistent with the needs and growth of the community.

The policies listed in this section will encourage the orderly development and funding of the street system. The construction will be funded through a combination of developer contributions and fees, City funds such as the gasoline tax, regional TransNet sales tax, and State and federal guaranteed financial support.

POLICIES:

- 3.10** The City shall require dedication and improvement of necessary rights-of-way along Master Transportation Roadway Plan streets. This usually will occur in fulfillment of a condition of approval for a tentative map or as a condition of approval for a building permit, whichever occurs first.

- 3.11** The City shall assure that each addition to the circulation system is a useable link on the total system and that new routes and links are coordinated with existing routes to ensure that each new and existing roadway continues to function as it was intended.
- 3.12** The City shall require or provide adequate traffic safety measures on all new and existing roadways. These measures may include, but are not limited to, appropriate levels of maintenance, proper street design, traffic control devices (signs, signals, and striping), street lighting, and coordination with the school districts to provide school crossing signs and protection.
- 3.13** The City shall give priority to funding and implementing projects that either complete links on the circulation system or relieve existing deficiencies.
- 3.14** The City shall, where feasible, interconnect traffic signals to form area networks or corridor systems. These systems shall be timed to facilitate the flow of through traffic on the arterial system, thus enhancing the movement of vehicles and goods through the City, while reducing fuel consumption and air pollution.
- 3.15** The City shall impose appropriate prorated fees for construction of roadway facilities and associated landscaping to ensure that all new development contributes to the completion of the circulation system. In addition to pre-permit collection, such fees may be imposed through creation of assessment districts.
- 3.16** The City shall approve and build streets as per City of Oceanside Engineering Manual Specifications.
- 3.17** The City shall require additional right-of-way width and additional improvements of major arterials where required for turning movements or to provide access to adjacent properties whenever access is not feasible from a lower classification street system.
- 3.18** The City shall:
- Require new developments to provide collector and local street improvements according to the standards of the City Engineering Department.
 - Require new developments to dedicate necessary right-of-way when the subdivision or development of property adjacent to Circulation Element streets is proposed.
 - Require new developments to provide all necessary grading, installation of curbs, gutters, sidewalks, parkway tree planting, and street lights, unless these improvements are provided through other means.
 - Require new developments to provide half-street improvements plus 12 feet beyond the centerline in accordance with City standards.

- 3.19** For development within the Major Thoroughfare and Traffic Signal Fee area established by the City Council, the City shall collect the Major Thoroughfare Fees as required by Ordinance No. 80-30, the Traffic Signal Fees as required by Ordinance No. 87-19, and the latest City Council resolutions setting such fees.
- 3.20** If the location and traffic generation of a proposed development will result in congestion on major streets or failure to meet the LOS D threshold, or if it creates safety hazards, the proposed development shall be required to make necessary off-site improvements. Such improvements may be eligible for reimbursement from collected impact fees. In some cases, the development may have to wait until financing for required off-site improvements is available. In other cases where development would result in unavoidable impacts, the appropriate findings of overriding consideration will be required to allow temporary undesirable levels of service.
- 3.21** The City shall require that those responsible for street improvements replant, replace, or install new landscaping pursuant to existing City policy along all new roadways or on those that have been redesigned and reconstructed.
- 3.22** Prior to approving any street widening project, the City shall explore all alternatives to adding additional lanes or acquiring additional right-of-way.

3.2 Roadway Classifications

Roadway classification is the process by which streets and highways are grouped into classes according to the type of service they are intended to provide. Fundamental to this process is the recognition that individual streets and highways do not operate independently. Rather, most travel involves movement through an integrated network of roads. It is the City's responsibility to plan, design, and implement a street system that recognizes the importance of the use and function of each hierarchical roadway classification.

The City of Oceanside recognizes the importance of the use and function of each street classification. The class of each road has a certain set of design guidelines and intended functions that are described below.

Expressway – An Expressway is designed to provide express direct travel through a city with several lanes of travel in each direction. It is a multilane roadway that is often a divided highway for through traffic with fully controlled access to intersections and with possible grade separations at most intersections (SR76 has mostly at-grade intersections). Expressways are constructed and maintained by the Caltrans. Expressways in Oceanside are generally four or six lanes. The Caltrans Highway Design Manual (Index 405.5) states that median opening (includes intersections) should be spaced at intervals no closer than 1,600 feet. The cross section for an expressway is 102/160 or 122/200 feet (curb-to-curb/total right-of-way width).

Prime Arterial – A Prime Arterial is designed to provide regional, sub-regional, and intra-city travel. It includes high design standards with six lanes of travel, raised and landscaped medians, 8-foot shoulders, highly restricted direct access, and on-street parking is not allowed. The cross section for a prime arterial is 104/124 feet (curb-to-curb/total right-of-way width).

Major Arterial – A Major Arterial is designed to provide intra-city and sub-regional service. Direct access is allowed, but selectively restricted to assure proper function of the roadway. Typical design standards include the provision of four or six lanes of travel with a raised and landscaped median, 8-foot shoulders for emergency parking and bike lanes, and left-turn lanes are typically protected along the roadway. The cross section of a major arterial is 80/100 feet or 104/124 feet (curb-to-curb/total right-of-way width).

Secondary Collector – A Secondary Collector is designed for intra-city travel as a link between arterial and collector roadways. It frequently provides direct access to abutting properties; however, that is not its primary purpose. The typical design features include the provision of four travel lanes with a center two-way left-turn lane and includes bike lanes or four lanes with left-turn pockets without a raised median. The cross section of a secondary collector is 64/84 (curb-to-curb/total right-of-way width) with a two-way left-turn lane and 54/74, 60/80 feet without a two-way left-turn lane.

Collector Street – A Collector Street is designed to connect local streets with the adjacent arterial street network. The design standards typically include the provision for two travel lanes and on-street parking is allowed, except in specific locations where parking is removed to provide turn lanes at intersections. Collector streets frequently provide direct access to abutting properties, although the desire is to limit access where possible to reduce conflict. Collectors are generally two lanes with or without a center two-way left-turn lane. The cross section of a collector is 50/70 (curb-to-curb/total right-of-way width) with a two-way left-turn lane and 40/60 or 50/70 feet without a two-way left-turn lane. A Collector can also be a two-lane one-way street, such as the one-way couplet on Mission Avenue between Cleveland Street and Clementine Street with Seagaze Drive. A Collector that is a two-lane one-way street generally has parking on both sides of the street.

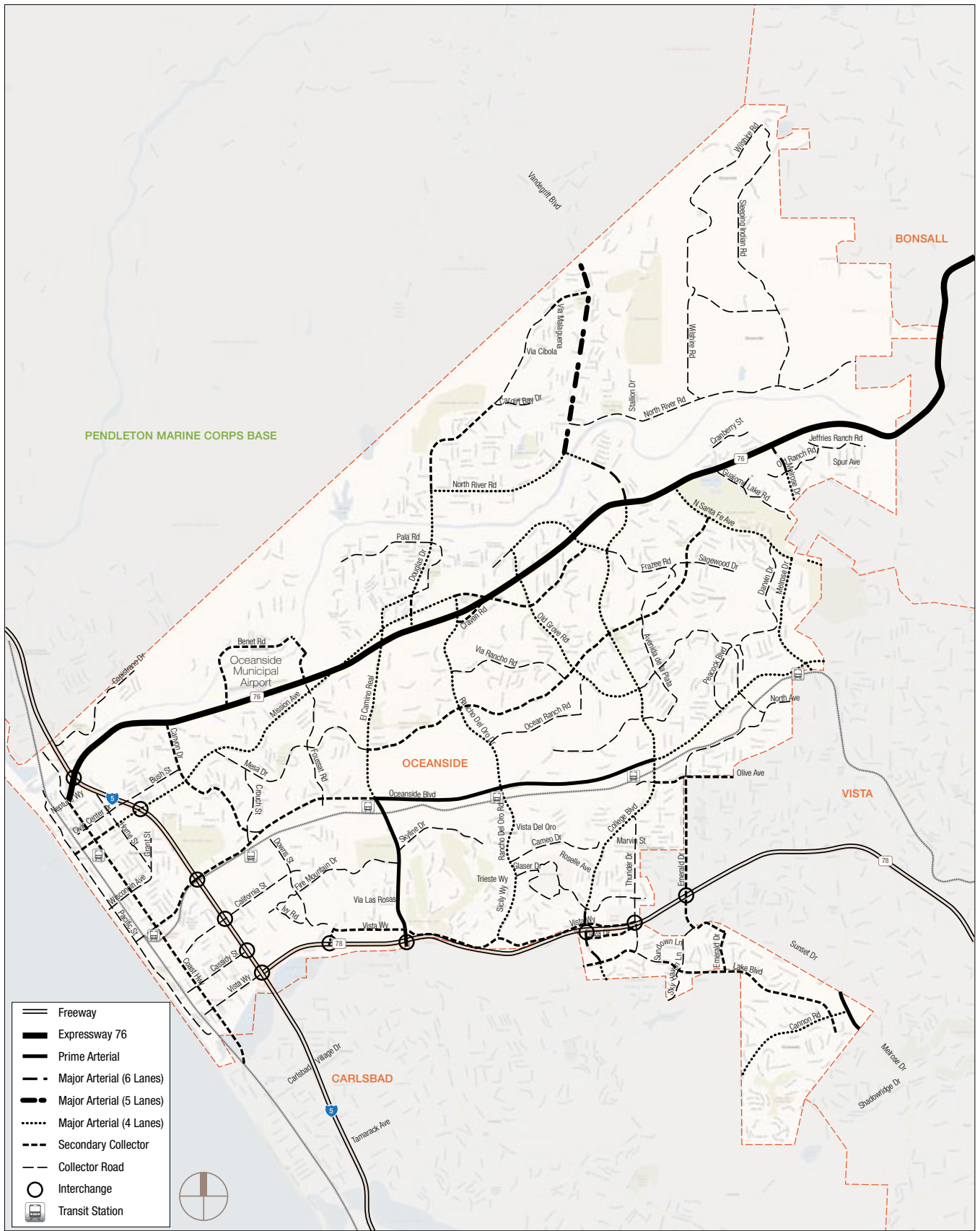
Local Street – A Local Street is designed to provide direct access to abutting properties and to provide connection between neighborhood streets and the collector street network. The Local Street may be discontinuous to discourage through trips. The typical design standards include the provision for two travel lanes, parking lanes on both sides of the street, and direct driveway access. The cross section of a local street is 36/56 or 40/60 (curb-to-curb/total right-of-way width).

All major elements of the circulation system have been assigned to one of these classifications to aid in understanding the design configuration and right-of-way needs for any segment of the system.

3.3 Existing Circulation System

The existing roadway system within the City of Oceanside is illustrated on Figure 3.1. Regional circulation facilities serving the City include Interstate 5, State Route 78 and State Route 76. Several of the major north/south and east/west arterials such as El Camino Real, Rancho Del Oro Road, College Boulevard, Oceanside Boulevard and Mission Avenue are accessed via these facilities.

The existing traffic conditions were analyzed to determine areas where the level of service did not meet the LOS D or better threshold. The existing traffic volumes are shown on Figure 3.2. Figure 3.3 depicts the existing level of service conditions for the roadway segments, and Figure 3.4 depicts the existing level of service conditions for the key intersections in the City of Oceanside. Detailed tables that include the existing roadway capacity, traffic volumes, delay and level of service are included in Appendix D.

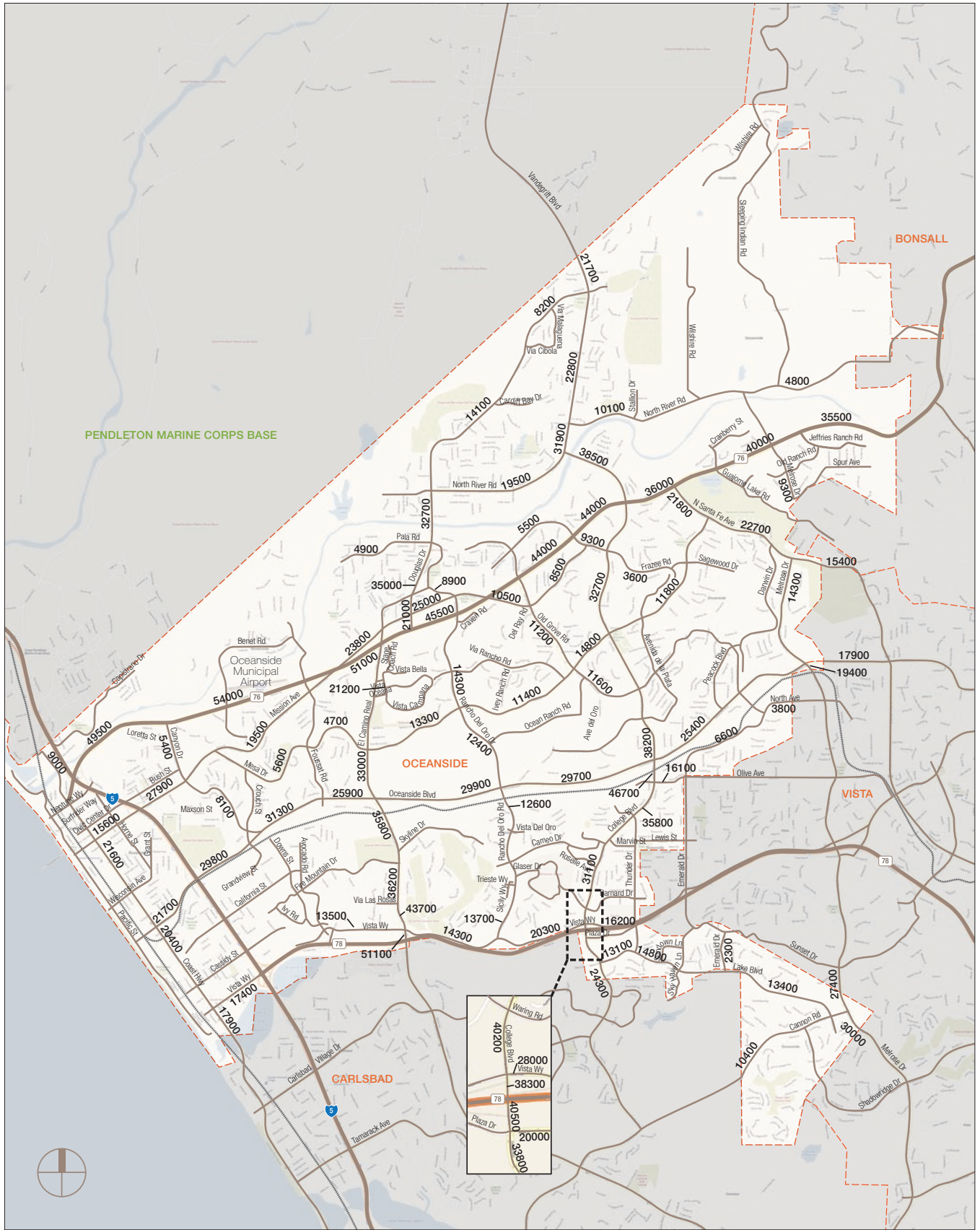


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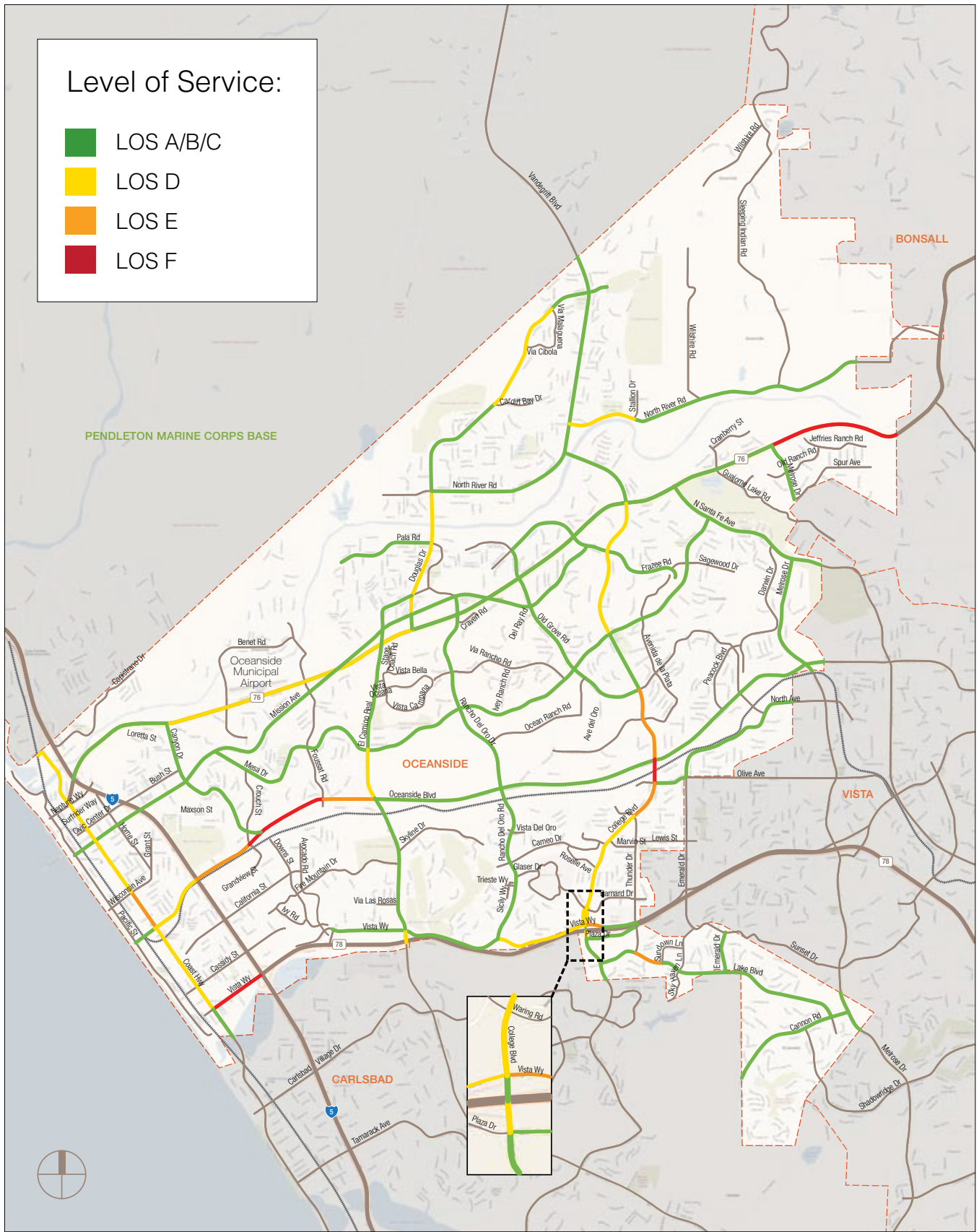
Existing Roadway Classifications

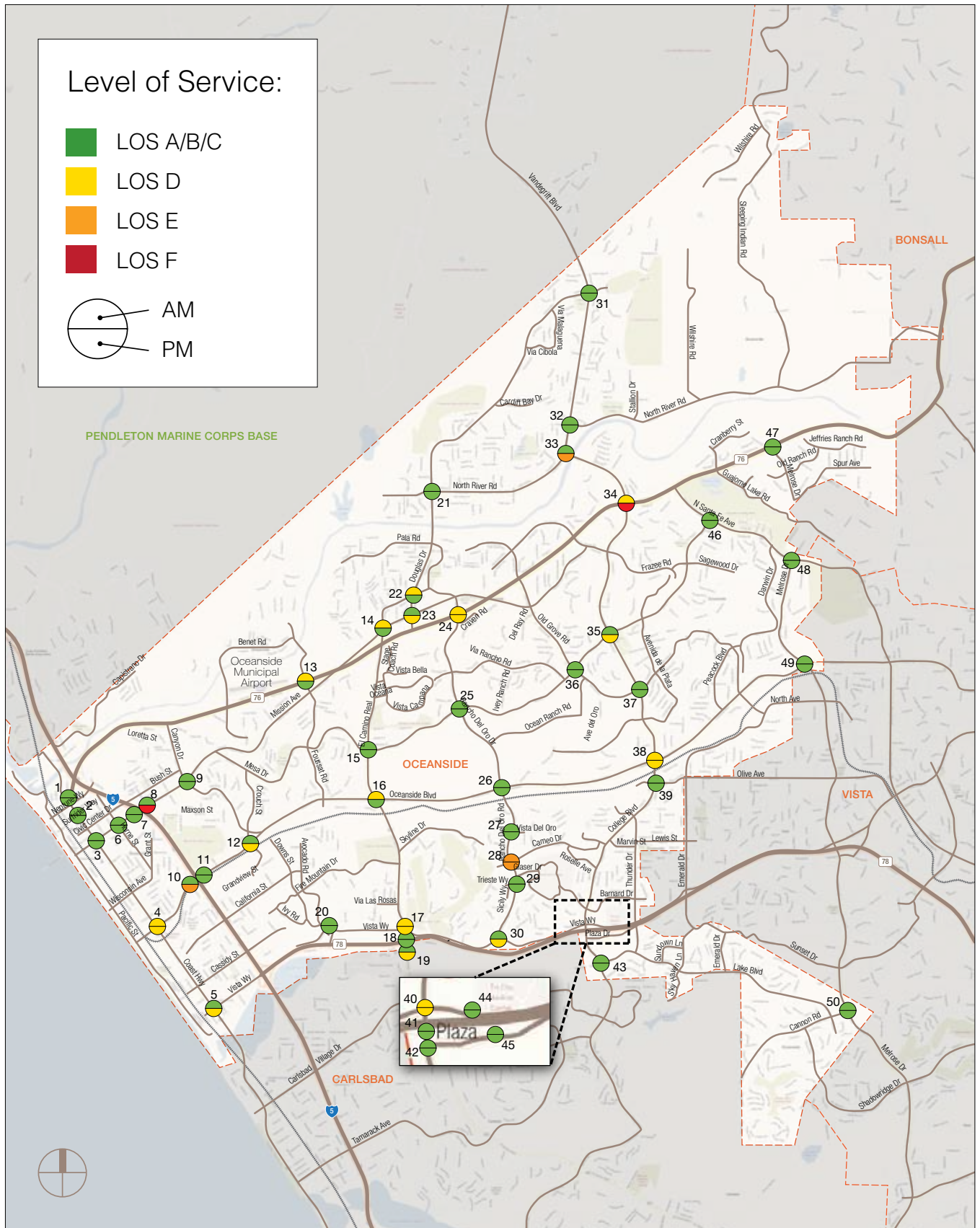
Figure 3.1



Existing Roadway Traffic Volumes

Figure 3.2





Note: Intersections 8, 27, 28, and 29 are unsignalized



3.4 Regional Modeling Process

The San Diego Association of Governments (SANDAG) regional transportation model was used to help assess the long range traffic impacts of the General Plan land uses on the proposed Circulation Element Master Transportation Roadway Plan. SANDAG updates and provides the regional traffic forecasts for the San Diego region. SANDAG uses a regional transportation model to produce highway and transit forecasts for individual forecast years between 2003 and 2030. These forecasts are updated periodically to incorporate the most recent planning assumptions.

In the regional model, San Diego County (the “County”) is divided into traffic analysis zones, and the northern portion of the County is further divided and analyzed as the combined North County Sub-Area model. The combined North County Sub-Area model is a subset of the SANDAG Series 11 regional model. The North County Sub-Area Model includes the cities of Carlsbad, Oceanside, Escondido, Vista, San Marcos, and Poway. At the direction of Oceanside’s City Council, the Series 11 North County Sub-Area model was used to forecast future 2030 traffic volumes.

The Series 11 Combined North County Sub-Area model traffic forecasts utilize the “Reasonably Expected” network as defined in the Regional Transportation Plan (RTP) and the Final Series 11 2030 Regional Growth Forecast. It was completed in March 2009. This subarea model produces current and future traffic volumes tailored to the traffic patterns of the six North County cities. It serves as the basis for travel demand forecasting needs in these cities. The SANDAG Series 11 Year 2030 North County Sub-Area model traffic volumes forecasts represent the City of Oceanside’s Year 2030 traffic volumes which helped shape the proposed Master Transportation Roadway Plan network.

The SANDAG 2050 Regional Transportation Plan was approved in October 2011. The SANDAG Board of Directors approved the Hybrid Scenario as the preferred Revenue Constrained Transportation Network. The Hybrid Scenario contains projects that include improvements to the existing Trolley system as well as a number of new light rail transit (LRT) services in other high demand travel corridors and other bus rapid transit (BRT) and transit projects. The proposed Hybrid Scenario also includes improvements for all of the major freeway and highway corridors. It should be noted that the Hybrid Scenario assumes that State Route 76 (SR76) is a four-lane expressway not a six-lane expressway as shown in the SANDAG Series 11 North County Sub-Area model and the City of Oceanside’s Circulation Element. SANDAG determined that SR76 would remain a four-lane facility in the 2050 RTP and is not shown on the Hybrid Scenario project list to be improved to a six-lane facility. The City of Oceanside analysis shows that SR76 would operate at LOS D or worse in the Year 2030 based on future traffic volumes that were taken from the Series 11 North County Sub-Area model. Therefore, the Circulation Element will continue to show SR76 as a six-lane facility as the future traffic volumes (approx. 51,000 to 66,000 ADT, Series 11 Combined North County Sub-Area model) justify the need for a six-lane expressway in Year 2030. It is recommended that the City of Oceanside include the cost of widening SR76 to

a six-lane facility in the City's Thoroughfare Fee program due to the contradiction between the City's Circulation Element classification and the 2050 RTP.

3.5 Roadway Design Standards

The roadway design standards for the City of Oceanside are based on engineering standards and on evolving policies and practices regarding the City's transportation infrastructure. The City of Oceanside has established roadway design standards in order to standardize the City's roadway elements by ensuring that they meet both state and nationally accepted design criteria. While the Circulation Element provides the roadway design standards, it is not a substitute for professional engineering judgment and close coordination with the City Traffic Engineer during project development and plan preparations. In addition, bicycle and pedestrian facilities should be included in the roadway design as appropriate. Bicycle and pedestrian facilities are further outlined in Chapters 6 and 7. Table 3-1 provides a summary of the City of Oceanside's Street Design Criteria.



**TABLE 3-1
CITY OF OCEANSIDE STREET DESIGN CRITERIA**

Design Elements	6-Lane Prime Arterial	6-Lane Major Arterial	4-Lane Major Arterial	4-Lane with TWLT Secondary Collector	4-Lane Secondary Collector	2-Lane with TWLT Collector	2-Lane Collector	2-Lane Local	Cul-de-Sac Street	Private
Volume Capacity	60,000	50,000	40,000	30,000	25,000	15,000	10,000	2,200	Less than 200	Less than 500 ²
Design Speed	60 mph	55 mph	55 mph	45 mph	45 mph	35 mph	25 mph	25 mph	25 mph	25 mph
Stopping Sight Distance ¹	580'	500'	500'	360'	360'	250'	200'	150'	150'	125'
Minimum Spacing of Intersections ³	2,600'	1,200'	1,200'	600'	600'	300'	300'	200'	NA	200'
Right-of-Way ⁴	124'	124'	100'	84'	74'-80'	70'	60'-70'	56'-60'	56'	VARIES
Curb-to-Curb Distance	104' 16' Median	104' 16' Median	80' 16' Median	64'	54'-60'	50'	40'-50'	36'-40'	36'-40'	40'-36' 32'-28' ⁵
Minimum Traffic Index	10	10	9	8	8	7	6	5	5	5
Minimum Structural Section ⁶	6AC/8AB	6AC/8AB	6AC/6AB	5AC/6AB	5AC/6AB	4AC/6AB	4AC/6AB	3AC/6AB	3AC/6AB	3AC/6AB
Access to Adjoining Property	None	None	None	Where no other access is possible	Where no other access is possible	Where no other access is possible	Limited Access	OK	OK	OK
Minimum Horizontal Radius Without Superelevation	1,000 2,200	1,000 1,800	1,000 1,800	750 1,100	750 1,100	500 600	350 N/A	200 N/A	200 N/A	200 N/A
Maximum Grade	6%	8%	8%	8%	8%	8%	10%	12% ⁷	12% ^{7,8}	12% ⁷
Minimum Grade	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Maximum Intersection Grade	3%	3%	3%	4%	4%	5%	5%	5%	5%	5%
Curb Return Radii	35'	35'	35'	35'	35'	30'	30'	25'	40'	25'-35'
Street Lights Location per Standard Drawing No. M-4 ⁹	30,000 lumen 200' staggered	30,000 lumen 200' staggered	30,000 lumen 200' staggered	30,000 lumen 250' staggered	30,000 lumen 250' staggered	9,500 lumen 250' one side or staggered	9,500 lumen 250' one side or staggered	9,500 lumen at all intersections 250' spacing one side of street	9,500 lumen at mid-block if less than 200'	9,500 lumen at all intersections 250' spacing one side of street

Footnotes:

1. Stopping sight distance shall not be used for intersection sight distance. Refer to Caltrans Design Manual for intersection sight distance (Corner Sight Distance).
2. Private streets with greater than 500 ADT to be designed to public street standards.
3. Measured BCR to BCR.
4. Additional right-of-way at intersections shall be required to accommodate turning lanes as necessary.
5. 28' no parking on either side; 32' parking one side only.
6. Minimum sections allowed. Actual sections are to be based on the R-value tests.
7. Grades greater than allowed must have written approval of the City Traffic Engineer prior to approval of the tentative map or development plan.
8. Cul-de-sac turnarounds shall not exceed 5% maximum grade.
9. Standard Drawings are located in the City's Engineering Design and Processing Manual.

Note: Expressways within the City of Oceanside are designed to Caltrans Highway Design Manual criteria.

3.6 LOS Analysis Methodology

The efficiency of traffic intersection operations and available and utilized capacity of roadways are measured in terms of Level of Service (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. Evaluation of roadways and intersections involves the assignment of grades from A to F, with LOS A representing the lowest level of congestion, and LOS F representing extremely crowded and restricted operations. Each letter grade corresponds to a range of volume to capacity (V/C) values. The values for roadways are presented as volume to capacity ratios or vehicle demand divided by the roadway capacity. Therefore, as the ratio approaches a 1.00 capacity, the roadway approaches LOS F.

3.6.1 Freeways and Ramps

Freeways and associated interchanges must be evaluated since all freeways are on the Congestion Management Program system. All signalized intersections of freeway ramps with arterials should be evaluated using the Highway Capacity Manual (HCM) signalized intersection operational method (see section 3.6.3). For diamond interchanges, the timing and phasing of the two signals must be coordinated to ensure queue clearances. Signal timing sheets should be requested from Caltrans or the City of Oceanside. Freeways impacted by a proposed project should be evaluated for significant impacts. Level of service (generally used by Caltrans) for freeways are categorized in Table 3-2.

If ramp metering is present at a freeway interchange, the effects of the metering should be analyzed. The analysis input and output for ramp metering is explained in the Traffic Impact Study (TIS) component guidelines which are included in Appendix G. In addition, the thresholds for a significant impact to ramps or freeways are included in Appendix G.

**TABLE 3-2
LEVEL OF SERVICE DESCRIPTION FOR FREEWAYS**

LOS	Demand/ Capacity	Congestion/ Delay	Traffic Description
A	<0.41	None	Free flow.
B	0.42-0.62	None	Free to stable flow, light to moderate volumes.
C	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
D	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
E	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
F	>1.00	Considerable	Forced or breakdown. Delay measured in average flow, travel speed (mph). Signalized segments experience delays >60.0 secs/vehicle.
F0	1.01-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestions, long queues form behind breakdown points, stop and go.
F1	1.26-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
F2	1.36-1.45	Very Severe 2- 3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
F3	>1.46	Extremely Severe 3+ hours of delay	Gridlock.

3.6.2 Roadways

Level of Service standards shall be used to determine acceptable levels of ADT for all City roadways. LOS standards must be met by all new development projects or agreed upon mitigation measures must be implemented upon issuance of the certificate of occupancy of the first residential unit, commercial/industrial building or educational facility.

Each classification in the Circulation Element hierarchy of arterial roadways has a design capacity and associated LOS threshold. Table 3-3 shows the design capacity and LOS thresholds for all roadways. If a roadway is calculated to operate at LOS E, then an arterial peak hour analysis shall be performed following the HCM methodology. A computer software with HCM methodology analysis shall be used to determine arterial level of service for peak hour analysis. Any other methodology used should first be discussed and approved by the City.



**TABLE 3-3
CIRCULATION ELEMENT ROADWAY CLASSIFICATION LOS & CAPACITY**

Class	Lanes	Cross Section ¹	Level of Service				
			A	B	C	D	E
Expressway	6	102/160 122/200	30,000	42,000	60,000	70,000	80,000
Expressway	4	102/160 122/200	25,000	35,000	50,000	55,000	60,000
Prime Arterial	6	104/124	25,000	35,000	50,000	55,000	60,000
6-Lane Major Arterial	6	104/124	20,000	28,000	40,000	45,000	50,000
5-Lane Major Arterial ²	5	102/122	17,500	24,500	35,000	40,000	45,000
4-Lane Major Arterial	4	80/100	15,000	21,000	30,000	35,000	40,000
Secondary Collector (4 lanes with 2-way left-turn lane)	4	64/84	10,000	14,000	20,000	25,000	30,000
Secondary Collector (4 lanes without 2-way left-turn lane, with left turn pockets)	4	54/74, 60/80	9,000	13,000	18,000	22,000	25,000
Collector (commercial fronting, 2-lanes with 2-way left-turn lane) ³	2	50/70	5,000	7,000	10,000	13,000	15,000
Collector (residential streets in the Circulation Element or industrial fronting)	2	40/60, 50/70	4,000	5,500	7,500	9,000	10,000
Local Street (residential streets NOT in the Circulation Element)	2	36/56, 40/60	—	—	2,200	—	—

Footnotes:

1. Cross sections are listed as curb-to-curb width/total right-of-way width, in feet.
2. Vandegrift Boulevard and El Camino Real are the only Circulation Element roadways designated as a 5-lane Major Arterial. It is not intended that other roadways be built to 5-lane Major Arterial standards.
3. This capacity will also be assumed for a two-lane one-way collector.

3.6.3 Intersections

Intersection Level of Service analysis should be conducted using the HCM Methodology. For signalized intersections, the methodology described in the HCM Chapter 18 for signalized intersections is used. With this methodology, the average control delay per vehicle is estimated for each lane group and aggregated for each approach and for the intersection as a whole. The relationship between control delay per vehicle and LOS for signalized intersections is summarized in Table 3-4.

**TABLE 3-4
HCM LEVEL OF SERVICE DESCRIPTION FOR SIGNALIZED INTERSECTIONS**

Level of Service	Description of Traffic Conditions	Control Delay (sec/veh)
A	Insignificant delays: no approach phase is fully utilized and no vehicle waits longer than one red indication.	≤ 10
B	Minimal delays: an occasional approach phase is fully utilized. Drivers begin to feel restricted.	> 10 – 20
C	Acceptable delays: major approach phase may become fully utilized. Most drivers feel somewhat restricted.	> 20 – 35
D	Tolerable delays: drivers may wait through more than one red indication. Queues may develop but dissipate rapidly, without excessive delays.	> 35 – 55
E	Significant delays: volumes approaching capacity. Vehicles may wait through several cycles and long vehicle queues form upstream.	> 55 – 80
F	Excessive delays: represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80

Source: Highway Capacity Manual, Transportation Research Board, 2010.

For unsignalized intersections, the methodology described in the HCM Chapters 19 and 20 for unsignalized intersections is used. With this methodology, LOS is related to the control delay for each stop-controlled movement. The relationship between control delay per vehicle and LOS for unsignalized intersections is summarized in Table 3-5.

**TABLE 3-5
HCM LEVEL OF SERVICE DESCRIPTION FOR UNSIGNALIZED INTERSECTIONS**

Level of Service	Description of Traffic Conditions	Control Delay (sec/veh)
A	No delay for stop-controlled approaches.	≤ 10
B	Operations with minor delay.	> 10 – 15
C	Operations with moderate delays.	> 15 – 25
D	Operations with some delays.	> 25 – 35
E	Operations with high delays and long queues.	> 35 – 50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50

Source: Highway Capacity Manual, Transportation Research Board, 2010.

3.7 Proposed 2030 Master Transportation Roadway Plan

The 2030 Master Transportation Roadway Plan was developed by assessing the existing network and future 2030 traffic conditions. There were 18 potential 2030 network alternatives reviewed for the Master Transportation Roadway Plan. The 18 potential network alternatives were run using the Series 11 Sub-Area model. These alternatives were reviewed and narrowed down to five scenarios that were presented to City staff and at public meetings with the understanding that two variations of the five would be selected for further detailed analysis in a traffic impact study. The proposed Master Transportation Roadway Plan presented in this section is one of the alternatives analyzed in the traffic impact study.

The 2030 Master Transportation Roadway Plan as shown on Figure 3.5 (page 32) represents the planned street system along with the classifications of those streets. Where there is a change from one classification to another along a certain street, a transition will occur mid-block to preclude non-continuing lanes at intersections. The design criteria for the higher classification shall generally take precedence through the transition area. The City Traffic Engineer shall review these transition areas and provide guidance.

There are several pieces of the transportation network that have changed from existing conditions to the proposed 2030 Master Transportation Roadway Plan. The major changes to the circulation network include:

- SR76 is six-lanes
- Rancho Del Oro Road at SR78 is an interchange

- College Boulevard is six-lanes between Old Grove Road and Vista Way
- Melrose Drive is connected between North River Road and SR76
- Melrose Drive is connected between Spur Avenue and N. Santa Fe Avenue
- Pala Road is connected between Los Arbolitos Boulevard and Foussat Road
- Mission Avenue is a one-way couplet between Cleveland Street and Clementine Street with Seagaze Drive (Clementine Street will be one-way northbound and Cleveland Street will be one-way southbound)

In addition to the major network changes, there are several other network improvements proposed for the 2030 Master Transportation Roadway Plan. Table 3-6 highlights the changes from the existing network to the proposed 2030 network. Several facilities are already built to their ultimate classification and are therefore not mentioned in Table 3-6. Intersection improvements beyond existing conditions are depicted in Figure 3.6 (page 33-34). Figure 3.6 shows the future intersection geometry in red. A complete list of roadway segment classification, forecast 2030 traffic volumes, delay and LOS are included in Appendix E.

**TABLE 3-6
2030 PROPOSED CLASSIFICATION CHANGES
(COMPARED TO EXISTING)**

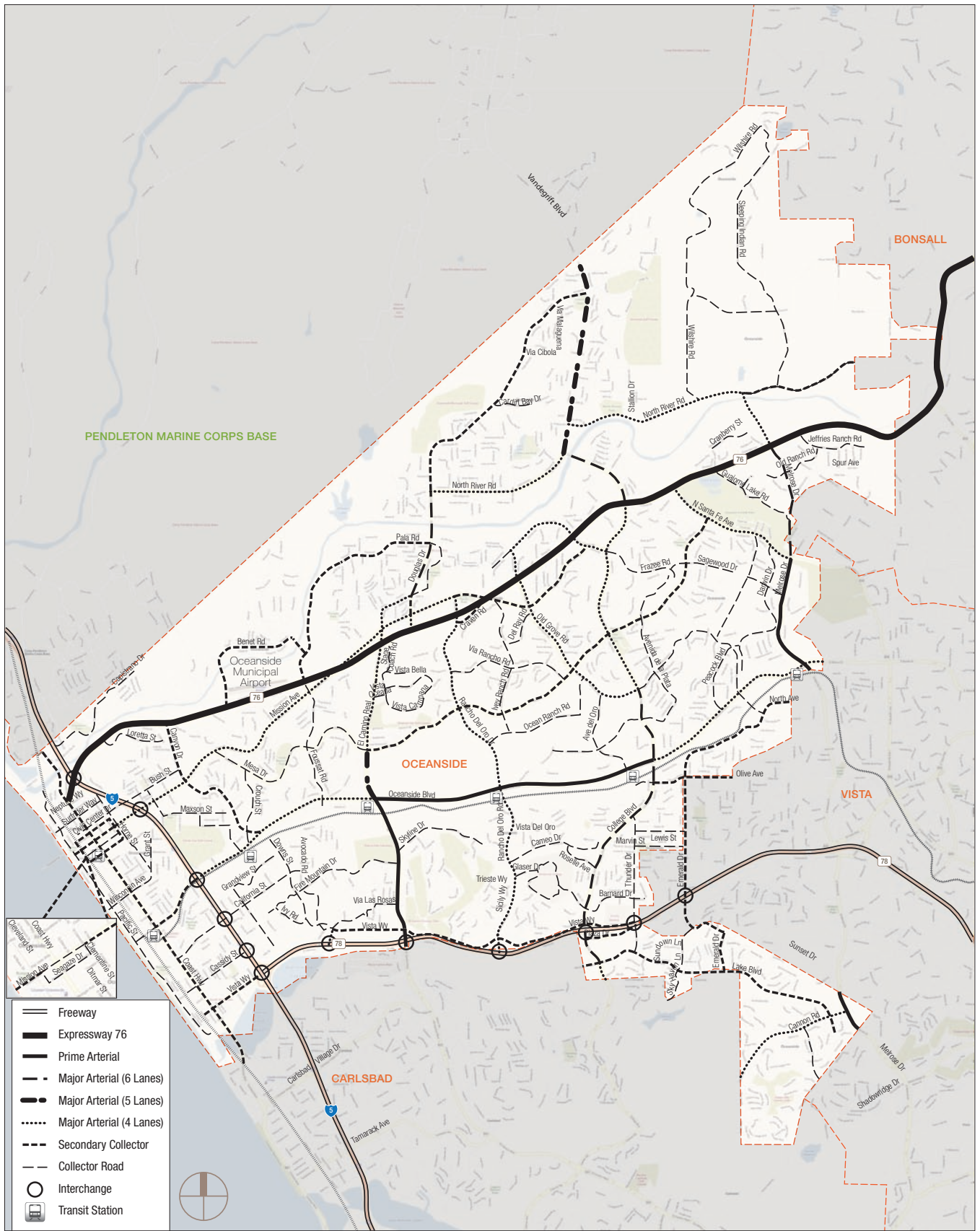
Facility	Existing		2030 Proposed	
	# Lanes	Classification	# Lanes	Classification
Canyon Dr: Mission Ave to Oceanside Blvd	2	Collector	4	Secondary Collector
Coast Hwy: Harbor Dr to SR76	2	Collector	4	Secondary Collector
College Blvd: Old Grove Rd to Waring Rd	4	Major	6	Major
Douglas Dr: Vandegrift Blvd to Cardiff Bay Dr ¹	2	Collector	4	Secondary Collector
El Camino Real: Mesa Dr to Oceanside Blvd	4	Major	5	Major
Lake Blvd: Thunder Dr to Sundown Ln ²	2	Collector	4	Secondary Collector
Melrose Dr: North River Rd to SR76	-	-	4	Major
Melrose Dr: SR76 to N. Santa Fe Ave ³	4/6	Major	6	Major
Melrose Dr: N. Santa Fe Ave to Oceanside Blvd	4	Major	6	Prime
Melrose Dr: Oceanside Blvd to City Limits	4	Major	6	Prime

**TABLE 3-6
2030 PROPOSED CLASSIFICATION CHANGES
(COMPARED TO EXISTING)**

Facility	Existing		2030 Proposed	
	# Lanes	Classification	# Lanes	Classification
Mission Ave: Cleveland St to Clementine St ⁴	4	Secondary Collector	2 (one-way)	Collector
North Ave: Olive Dr to Melrose Dr	2	Collector	4	Secondary Collector
North River Rd: Vandegrift Blvd to Melrose Dr	2	Collector	4	Major
North River Rd: Melrose Dr to Eastern City Limits	2	Collector	4	Secondary Collector
Oceanside Blvd: I-5 to El Camino Real	4	Secondary Collector	4	Major
Pala Rd: Foussat Rd to Los Arbolitos Blvd	-	-	4	Secondary Collector
Pala Rd: Los Arbolitos Blvd to Douglas Dr	2	Collector	4	Secondary Collector
Vista Way: Coast Hwy to I-5 ⁵	2	Collector	4	Secondary Collector
SR76: I-5 to Melrose Dr	4	Expressway	6	Expressway
SR76: Melrose Dr to Eastern City Limits	2	Expressway	4	Expressway

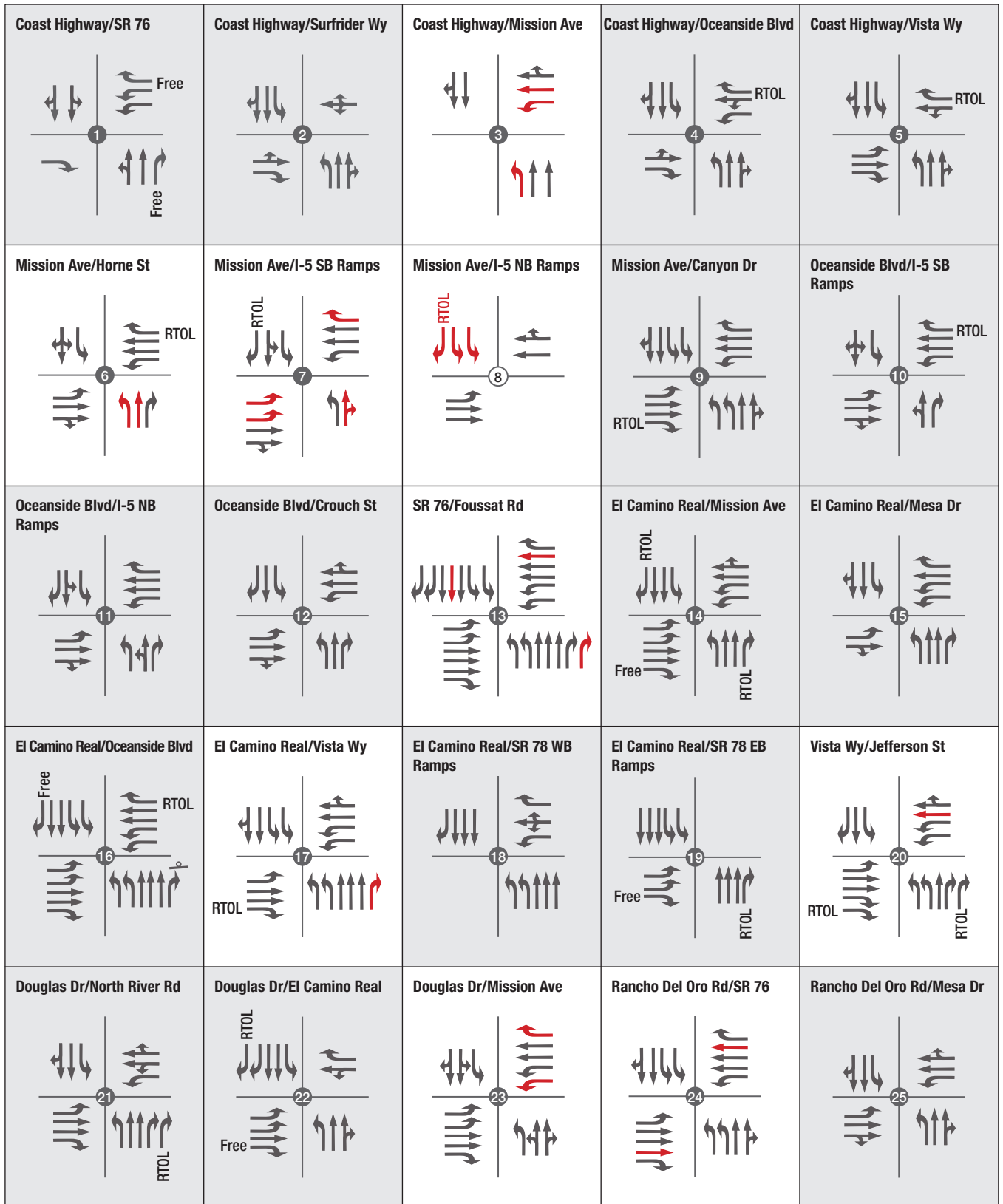
Footnotes:

1. Douglas Drive between Via Magaluena and Cardiff Bay Drive will remain as two-lanes.
2. Widening Lake Boulevard between Thunder Drive and Sundown Lane will accommodate forecast traffic volumes, but it should be noted that there are residential dwelling units fronting this segment that oppose the widening.
3. Melrose Drive between SR76 and North Santa Fe Avenue could possibly only be a four-lane major instead of a six-lane major in 2030.
4. Mission Avenue will be a two-lane one-way couplet between Cleveland and Clementine Streets with Seagaze Drive. Clementine Street will be one-way northbound and Cleveland Street will be one-way southbound.
5. Widening Vista Way between Coast Highway and I-5 will accommodate forecast traffic volumes, but it should be noted that there are residential dwelling units fronting this segment that oppose the widening.



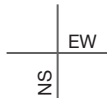
Not to Scale





LEGEND

NS Street/EW Street



● Study Intersection - Signalized

○ Study Intersection - Unsignalized

Unshaded intersection and red coloring indicates a geometric change from the Existing intersection geometry

Study Intersection Number

RTOL Right-turn overlap

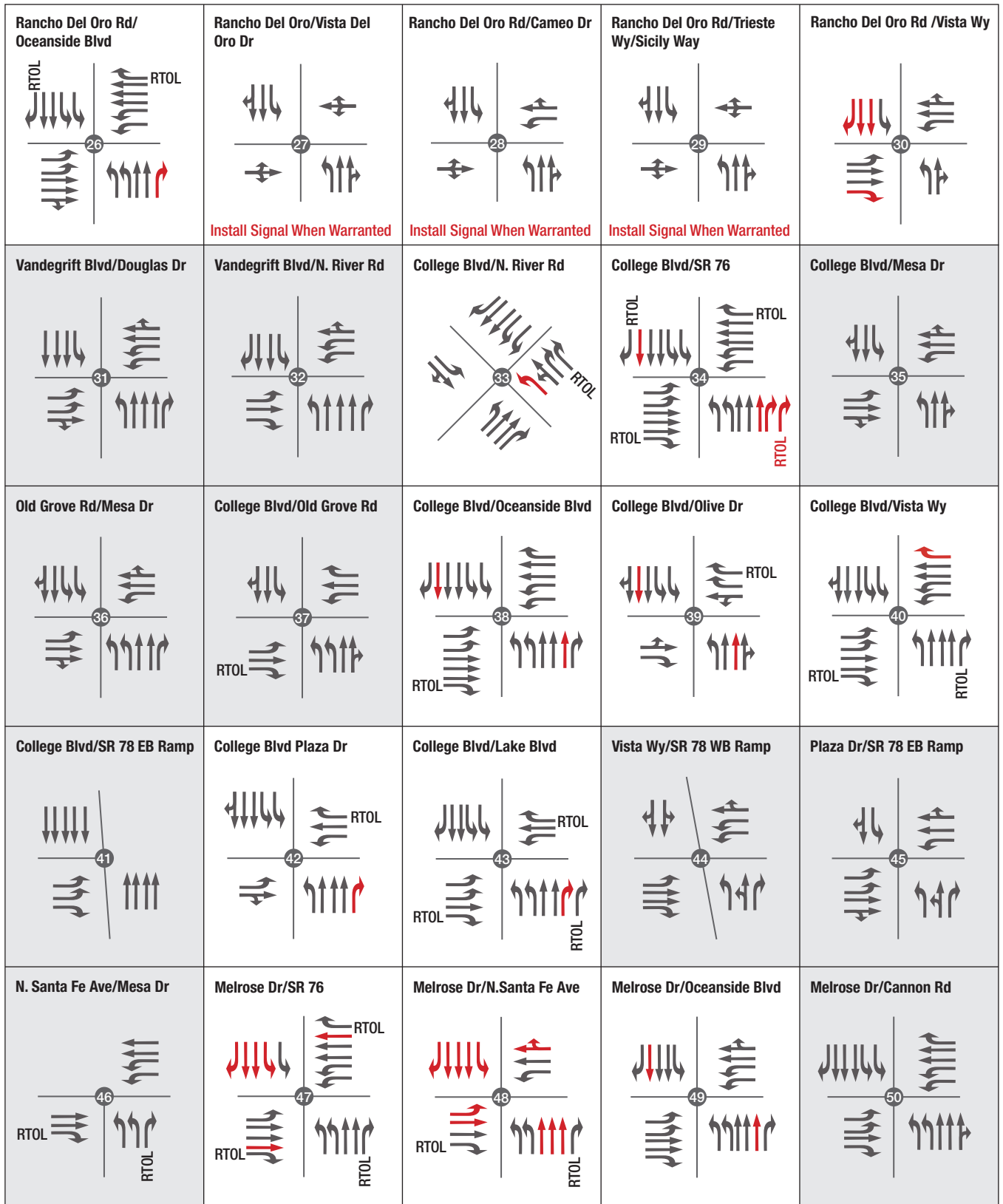
↗ Lane Geometry

⊥ Stop Sign Control



2030 Master Transportation Roadway Plan Intersection Geometry

Figure 3.6



LEGEND

NS Street/EW Street



● Study Intersection - Signalized

○ Study Intersection - Unsignalized

Unshaded intersection and red coloring indicates a geometric change from the Existing intersection geometry

Study Intersection Number

RTOL Right-turn overlap

Lane Geometry

Stop Sign Control



3.7.1 Unacceptable LOS Roadway Segments

There are several segments in the proposed 2030 Master Transportation Roadway Plan that do not operate at an acceptable LOS D or better and the mitigation measures to improve the operations to an acceptable level of service are not considered feasible. Figure 3.7 (page 38) depicts the 2030 Master Transportation Roadway Plan traffic volumes. Figure 3.8 (page 39) depicts the level of service operations for the roadway network for the 2030 Master Transportation Roadway Plan. As forecast traffic volumes build on the major corridors such as Coast Highway, College Boulevard, El Camino Real and Oceanside Boulevard, traffic should be managed through the Transportation Management Center (TMC). This will not provide full mitigation but simply improve overall traffic flow along these segments. The potential mitigation measures necessary to bring these segments to an acceptable LOS D or better are not always feasible or do not work towards achieving the overall long-term goals for the City of Oceanside. However, it is noted what would be required to fully mitigate these segments. The following are City of Oceanside roadway segments that do not operate at an acceptable LOS D or better under the proposed 2030 Master Transportation Roadway Plan.

Coast Highway between Wisconsin Avenue and Oceanside Boulevard

- **Capacity:** Four-lane secondary collector with LOS E capacity of 25,000 (see Table 3-3 for roadway capacities)
- **LOS:** Forecast 23,600 ADT volumes, LOS E, V/C ratio 0.94
- **Mitigation:** Widening to a four-lane secondary collector with a center two-way left-turn lane would accommodate forecast traffic volumes

College Boulevard between SR76 and Mesa Drive, Oceanside Boulevard and Olive Drive, Waring Road and Plaza Drive, and Lake Boulevard and Southern City Limits

- **Capacity:** Four-lane major between SR76 and Mesa Drive, six-lane major between Oceanside Boulevard and Olive Drive, and Waring Road and Plaza Drive, and four-lane major between Lake Boulevard and the Southern City Limits
- **Capacity:** Four-lane major LOS E capacity of 40,000 and six-lane major LOS E capacity of 50,000
- **LOS:** Forecast between 36,300-52,000 ADT volumes, LOS E and F, V/C ratio 0.91-1.04
- **Mitigation:** Widening the four-lane major sections (where there is an impact) to a six-lane major or widening the six-lane major sections (where there is an impact) to a six-lane prime arterial would accommodate forecast traffic volumes; however, residents on certain sections of College Boulevard would be impacted by widening this corridor.

El Camino Real between Vista Way and SR78

- Capacity: Six-lane prime arterial with LOS E capacity of 60,000 between Vista Way and SR78
- LOS: Forecast 58,900 ADT volumes, LOS E, V/C ratio 0.98 between Vista Way and SR78
- Mitigation: Widening of the segment between Vista Way and SR78 to an eight-lane facility would improve the LOS; however, there are right-of-way restrictions on this segment that would not feasibly allow any additional widening. Due to existing topography, street location, and buildings some congestion on these segments may occur at buildout.

Mesa Drive between Mission Avenue and Foussat Road

- Capacity: Two-lane collector with LOS E capacity of 10,000
- LOS: Forecast 11,100 ADT volumes, LOS F, V/C ratio 1.11
- Mitigation: Widening this segment to a two-lane collector with a center continuous two-way left-turn lane would accommodate forecast traffic volumes. Widening this segment to accommodate a two-way left-turn lane is not possible due to existing residential frontage.

Oceanside Boulevard between Crouch Street and Foussat Road

- Capacity: Four-lane major arterial with LOS E capacity of 40,000
- LOS: Forecast 37,900 ADT volumes, LOS E, V/C ratio 0.95
- Mitigation: Widening this segment to a six-lane major arterial would accommodate forecast traffic volumes.

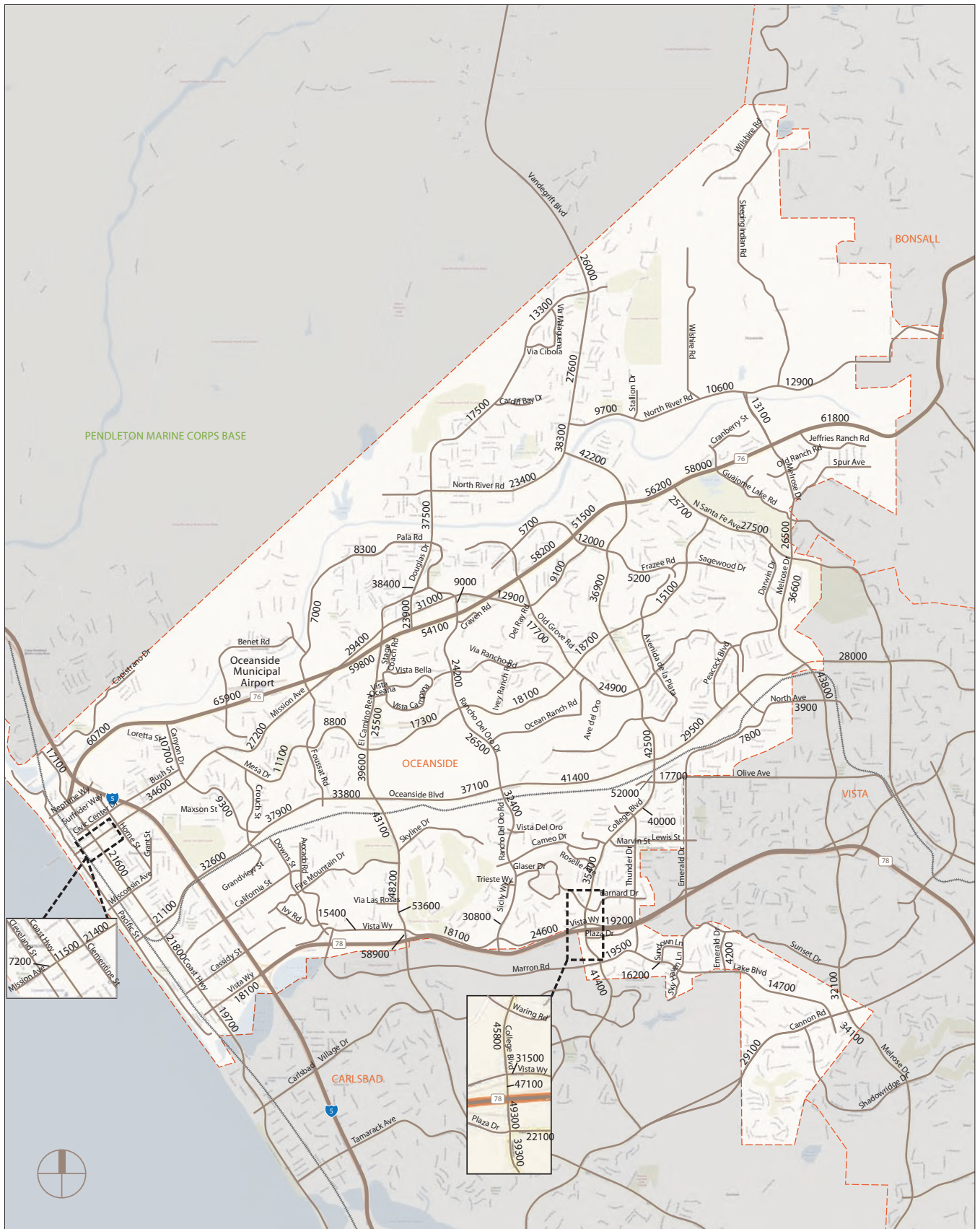
Vista Way between College Boulevard and SR78 Ramps

- Capacity: Four-lane secondary collector with LOS E capacity of 30,000 between College Boulevard and SR78 Ramps
- LOS: Forecast 31,500 ADT volumes, LOS F, V/C ratio 1.04 between College Boulevard and SR78 Ramps
- Mitigation: It should be noted that this segment has an eastbound right-turn lane serving the SR78 eastbound on-ramp. However, the City strives to improve the westbound approach of this segment by providing a westbound dedicated right-turn lane and extending the storage length of the westbound left-turn lanes at College Boulevard and Vista Way intersection.

3.7.2 Unacceptable LOS Intersections

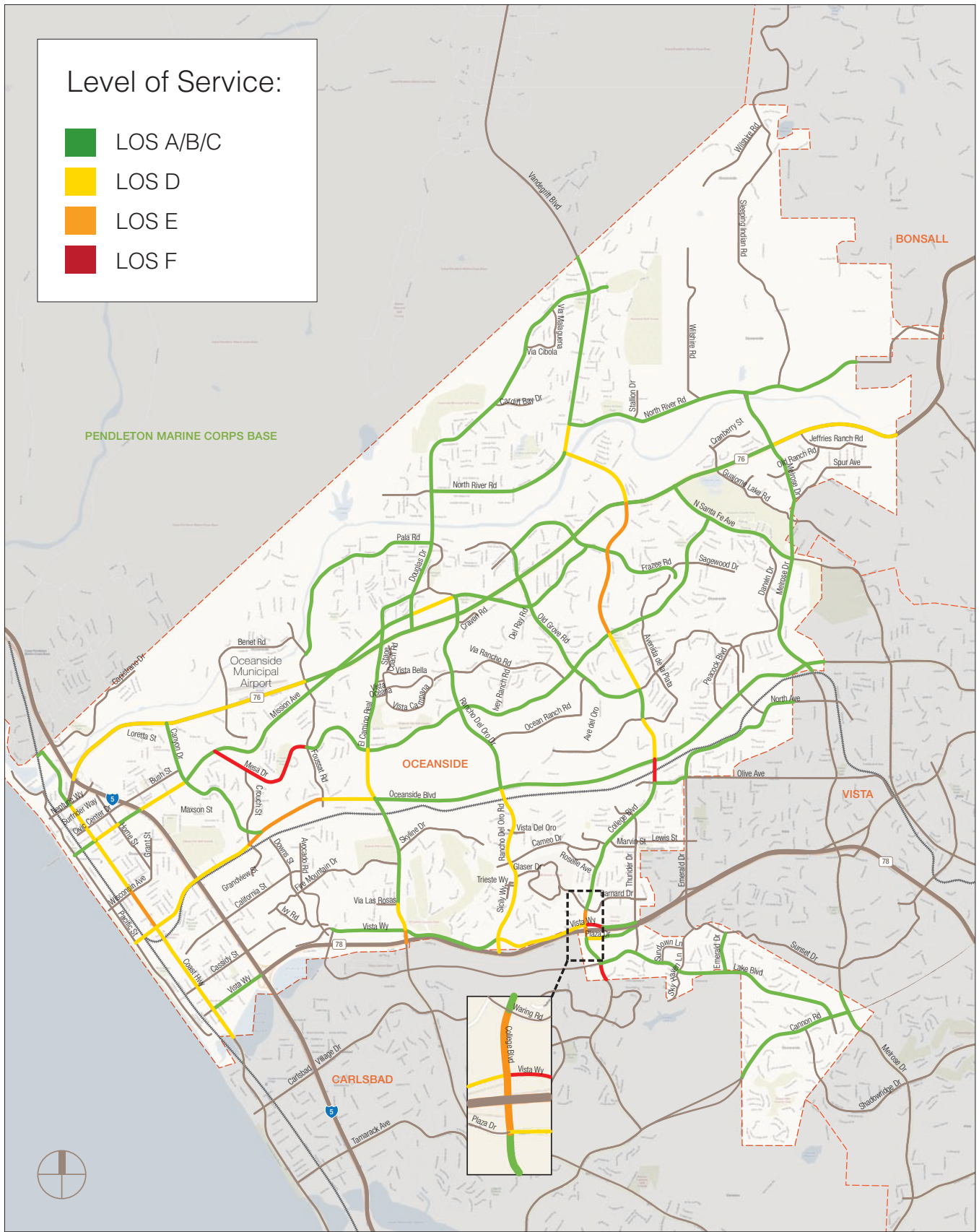
In addition, there are several key intersections in the proposed 2030 Master Transportation Roadway Plan that do not operate at an acceptable level of service during peak hours. Figure 3.9 (page 40) depicts the level of service operations for the key intersections for the proposed 2030 Master Transportation Roadway Plan. Below is a list of intersections that operate at LOS E or F during the AM or PM peak hours. The potential mitigation measures for the intersections that are proposed to operate at LOS E or F include adding an additional thru, left, or right-turn lanes to the necessary leg of the intersection. The intersection level of service, delay, and list of potential mitigation measures for these intersections are included in Appendix F.

- Mission Avenue and I-5 Southbound Ramps (PM peak hour)
- Oceanside Boulevard and I-5 Northbound & Southbound Ramps ((PM peak hour)
- Oceanside Boulevard and Crouch Street (PM peak hour)
- SR76 and Foussat Road (AM peak hour)
- El Camino Real and Oceanside Boulevard (AM peak hour)
- Douglas Drive and El Camino Real (AM and PM peak hours)
- College Boulevard and Oceanside Boulevard (PM peak hour)



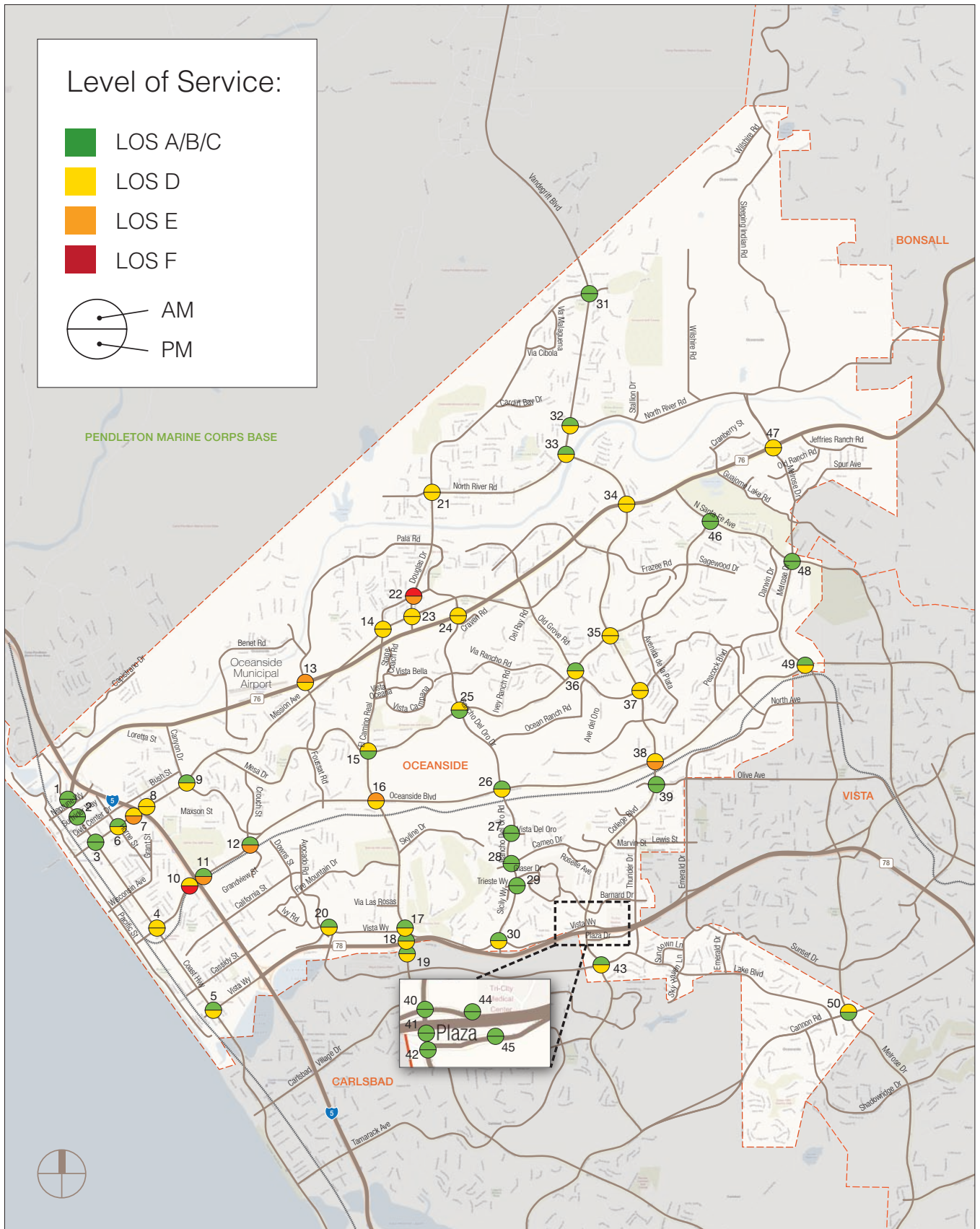
2030 Master Transportation Roadway Plan Traffic Volumes

Figure 3.7



2030 Master Transportation Roadway Plan
Roadway Level of Service

Figure 3.8



2030 Master Transportation Roadway Plan
 Intersection LOS Operations

Figure 3.9

3.7.3 Recommended Overriding Considerations

The following segments and intersection are recommended for consideration by City Council for an overriding consideration with the adoption of this Circulation Element. The mitigation measures identified for these segments have significant land use or environmental impacts that prohibit a feasible mitigation to bring the facility to an acceptable level of service.

Roadway Segments:

Coast Highway between Wisconsin Avenue and Oceanside Boulevard

The Master Transportation Roadway Plan shows this segment as a four-lane secondary collector. It would require a four-lane 64/84 secondary collector designation without the existing on-street parking to accommodate the forecast traffic volumes. The new TMC can be used to manage the transportation system through adaptive signals on congested corridors.

College Boulevard between SR76 and Mesa Drive

The Master Transportation Roadway Plan shows this segment as a four-lane major arterial. It would require a six-lane major arterial designation to accommodate the forecast traffic volumes. The new TMC can be used to manage the transportation system through adaptive signals on congested corridors.

College Boulevard between Oceanside Boulevard and Olive Drive

The Master Transportation Roadway Plan shows this segment as a six-lane major arterial. It would require a six-lane prime arterial designation to accommodate the forecast traffic volumes. The new TMC can be used to manage the transportation system through adaptive signals on congested corridors.

College Boulevard between Waring Road and Vista Way

The Master Transportation Roadway Plan shows this segment as a six-lane major arterial. It would require a six-lane prime arterial designation to accommodate the forecast traffic volumes. The new TMC can be used to manage the transportation system through adaptive signals on congested corridors.

College Boulevard between Vista Way and Plaza Drive

The Master Transportation Roadway Plan shows this segment as a six-lane major arterial. It would require a six-lane prime arterial designation to accommodate the forecast traffic volumes. The new TMC can be used to manage the transportation system through adaptive signals on congested corridors.

College Boulevard between Lake Boulevard and the Southern City Limits

The Master Transportation Roadway Plan shows this segment as a four-lane major arterial. It would require a six-lane major arterial designation to accommodate the forecast traffic volumes. The new TMC can be used to manage the transportation system through adaptive signals on congested corridors.

El Camino Real between Vista Way and SR78

The Master Transportation Roadway Plan shows this segment as a six-lane prime arterial. It would require an eight-lane arterial designation to accommodate the forecast traffic volumes on this segment. However, there are land use constraints due to the proximity of existing development that prohibit widening El Camino Real to eight lanes. This segment had a previous overriding consideration from the 1995 Circulation Element. It is recommended that an overriding consideration be adopted for this segment again for this update of the Circulation Element.

Mesa Drive between Mission Avenue and Fousat Road

The Master Transportation Roadway Plan shows this segment as a two-lane collector. It would require widening it to a 50/70 collector street to accommodate forecast traffic volumes.

Oceanside Boulevard between Crouch Street and Fousat Road

The Master Transportation Roadway Plan shows this segment as a four-lane major arterial. It would require a six-lane major arterial designation to accommodate forecast traffic volumes. The new TMC can be used to manage the transportation system through adaptive signals on congested corridors.

Vista Way between College Boulevard and SR78 Ramps

The Master Transportation Roadway Plan shows this segment as a four-lane secondary collector. It would require a four-lane major arterial designation to fully accommodate forecast traffic volumes. However, improvements to the College Boulevard and Vista Way intersection in the form of a westbound dedicated right-turn lane and lengthening the westbound left-turn lanes storage would improve peak hour operations on this segment. Therefore, the westbound improvements at College Boulevard/Vista Way should be implemented.

Intersections:

Mission Avenue and I-5 SB Ramps

The new TMC can be utilized to manage traffic on Mission Avenue; however, it cannot be determined that the use of the TMC and adaptive signal controls will fully mitigate this intersection. It would require providing three thru lanes both east- and westbound and two westbound left-turn lanes to fully mitigate this intersection. This would require widening the Mission Avenue bridge over

I-5. The Caltrans I-5 widening project plans show the Mission Avenue bridge remaining as four lanes.

Oceanside Boulevard and I-5 SB Ramps

The new TMC can be utilized to manage traffic on Mission Avenue; however, it cannot be determined that the use of the TMC and adaptive signal controls will fully mitigate this intersection. It would require providing three thru lanes both east- and westbound, two westbound right-turn lanes, and two eastbound left-turn lanes to fully mitigate this intersection.

Oceanside Boulevard and I-5 NB Ramps

The new TMC can be utilized to manage traffic on Mission Avenue; however, it cannot be determined that the use of the TMC and adaptive signal controls will fully mitigate this intersection. It would require providing three thru lanes both east- and westbound to fully mitigate this intersection.

Oceanside Boulevard and Crouch Street

The new TMC can be utilized to manage traffic on Mission Avenue; however, it cannot be determined that the use of the TMC and adaptive signal controls will fully mitigate this intersection. It would require providing three thru lanes both east- and westbound to fully mitigate this intersection.

SR76 and Foussat Road

This intersection cannot be fully mitigated in the AM peak hour, but providing two right-turn lanes northbound and three thru lanes southbound will improve the peak hour operations.

El Camino Real and Oceanside Boulevard

The new TMC can be utilized to manage traffic on Mission Avenue; however, it cannot be determined that the use of the TMC and adaptive signal controls will fully mitigate this intersection. It would require providing three thru lanes both east- and westbound to fully mitigate this intersection.

Douglas Drive and El Camino Real

The new TMC can be utilized to manage traffic on Mission Avenue; however, it cannot be determined that the use of the TMC and adaptive signal controls will fully mitigate this intersection. It would require providing three thru lanes southbound, two thru lanes and one dedicated right-turn lane northbound, and on dedicated left-turn and one dedicated thru-lane westbound to fully mitigate this intersection. There is also not sufficient right-of-way at this intersection to provide the recommended mitigation measures.

College Boulevard and Oceanside Boulevard

The new TMC can be utilized to manage traffic on Oceanside and College Boulevard; however, it cannot be determined that the use of the TMC and

adaptive signal controls will fully mitigate this intersection. It would require providing two eastbound right-turn lanes to fully mitigate this intersection.

3.8 Traffic Impact Studies

3.8.1 Traffic Impact Study Guidelines

The SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region, March 2000 (or most recent version) shall be followed within the City of Oceanside for any proposed project that would have an impact on the City's roadway network. A TIS can also be required based on the discretion of the City. Early consultation between the developer and the City is required to establish the base study parameters, assumptions, and analysis methodologies for the TIS. The City of Oceanside has a list of required components for TIS reports. All TIS reports should follow the required TIS components guidelines which are included in Appendix G. A TIS can be performed by any consultant on the City approved Traffic Engineering Consultants list to complete development traffic impact studies.

As recommended in the SANTEC/ITE Guidelines, the use of the most recent version of the SANDAG Trip Generation rates should be used or the rates from ITE's latest Trip Generation manual. For smart growth/mixed-use development areas, SANDAG has developed a Trip Generation for Smart Growth: Planning Tools for the San Diego Region to identify trip generation rates associated with smart growth developments. This new method of applying Smart Growth trip generation rates is intended to supplement data in the San Diego Traffic Generators Manual, published by SANDAG in 2000, and the accompanying Not-so-Brief-Guide to Trip Generation, published by SANDAG in 2002. The most recent version of the SANDAG Smart Growth or Trip Generation rates should be used.

3.8.2 Traffic Analysis Performance Criteria

The City of Oceanside's minimum acceptable level of service for all roadways is LOS D. The values associated with the LOS D minimum for the different roadway classifications are defined in Table 3-3 (page 27). The minimum acceptable level of service for intersections during the peak periods is LOS D. The values associated with LOS D for intersections during the peak periods were previously defined in Tables 3-4 and 3-5 (pages 28 & 29). These level of service standards are considered acceptable within the San Diego region and have been used in the analysis for the Circulation Element.

3.8.3 Mitigation Measures

Any proposed development project that causes a street segment or intersection to operate worse than LOS D is a significant project impact. If a segment or intersection operates at LOS E or F under pre-project conditions, a significant impact is determined as outlined in the most recent version of the SANTEC/ITE Guidelines. The developer shall propose, prepare and provide feasible mitigation measure(s) for the City to review that would improve the impacted location(s) to an acceptable LOS. Mitigation measures should be

used to construct on- and off-site transportation infrastructure improvements and dedicate right-of-way connected to impacts resulting from new development. The City also may require a developer to provide improvements to pedestrian and/or bicycle facilities as part of the project's mitigation measures. Chapters 6 and 7 focus on the Pedestrian and Bicycle Facility networks in the City of Oceanside.

Any proposed development project that affects a street segment that already operates, or is projected to operate worse than LOS D, regardless of peak hour analysis, the developer shall propose, prepare and provide mitigation measure(s) for the City to review. If there are no feasible mitigation measures that would fully mitigate traffic impacts, the developer shall propose, prepare and provide various mitigation measures, such as Traffic Management Center tools and resources, which may not include physical improvements to the impacted facility. Where various mitigation measures have been prepared, agreed upon by the City, and will be implemented, yet are not sufficient to fully mitigate the traffic impacts, then LOS E during peak hour periods will be considered acceptable. A project's fair share contributions may also be considered by the City for predetermined project improvements (e.g. TMC, adaptive signals) in lieu of prepared and implemented mitigation measures.

3.9 Additional Recommended Transportation Network Guidelines

The following recommended guidelines are for action by the City:

1. Develop and implement a Traffic Engineering Consultant on-call list for potential developers to utilize for traffic impact studies.
2. Implement the proposed transportation network and street classification standards as shown on Figure 3.5 (page 32).
3. As more precise intersection data becomes available, incorporate special design treatments for mitigating potentially unacceptable levels of service at those intersections identified in Section 3.7.2 (page 37) and included in Appendix F.
4. Continue to impose the City's Thoroughfare Fee and Traffic Signal Fee Ordinances to fund improvements necessary to maintain acceptable levels of service.
5. Update and revise the City's Thoroughfare Fee and Traffic Signal Fee Ordinances periodically to include road segment and intersection improvements as necessary to maintain acceptable LOS, and make any necessary adjustments in the amount of fees to be imposed.
6. Construct road segment improvements and road expansions as indicated on the Master Transportation Roadway Plan to provide

LOS D or better at such time as traffic flow warrants the improvements or expansion.

7. Widen approaches and make any other necessary intersection improvements to achieve LOS D or better for those intersections which would be impacted by proposed development.
8. Incorporate the following mitigation measures, where appropriate, into the design of new and improved roadways and streets to ensure that a new roadway will not result in future noise levels exceeding City land use compatibility criteria:
 - Alignment alternative
 - Roadway barriers
 - Lateral separation
 - Vertical profile
 - Retrofitting existing sensitive uses with added wall insulation, double pane windows, and air conditioning
 - Relocation of severely impacted sensitive uses
 - Buffer zones with adequate setbacks to avoid potentially unhealthy exposure to roadway noise and air quality levels
9. In the design of transportation facilities, every reasonable effort should be made to integrate and preserve significant natural features of the land, such as major canyons, watercourses, wetlands, native vegetation, trees, and rock outcroppings.
10. Locate and design roadways to avoid excessive grading and to respect the existing hillside and/or wetlands topography.
11. Require utilities to be undergrounded or relocated whenever possible, in conjunction with roadway construction.
12. Require landscaping to be replanted, replaced, or introduced along all new roadways or those which have been redesigned or reconstructed.
13. In the design of transportation facilities, reasonable effort should be made to integrate a complete streets design concept to accommodate the various users of the network such as pedestrians, bicyclists, transit, etc.
14. Incorporate traffic calming features, where feasible, into the roadway design of new, in-fill or redevelopment areas and at intersections with high pedestrian activity.

4. TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) is a set of specific strategies that influence travel behavior by mode, frequency, time, route, or trip length in order to help achieve an efficient and sustainable use of transportation facilities, along with other community goals such as promoting access for all transportation system users, improving mobility, and minimizing the negative impacts of vehicular travel. TDM strategies typically include: managing parking and pricing; marketing transit and providing commuter subsidies; promoting walking, bicycling and ridesharing; and encouraging telework and flexible work strategies. TDM provides an overarching framework for the City to achieve the Circulation Element's goals, objectives and policies because it offers strategies which apply to all modes of transportation.

The City of Oceanside strives to develop policies and a set of services which together encourage a balanced usage of many modes of travel and less dominance of the single occupant vehicle. Table 4-1 shows the 2000 Census which shows that approximately 74% of workers in both the City of Oceanside and the County of San Diego drive alone to work. While the City of Oceanside has travel mode diversity similar to that of the County of San Diego, the City strives to further decrease the percentage of those who drive alone to work while increasing the percentage of commuters who use alternative modes of transportation.

**TABLE 4-1
2000 COMMUTE MODES**

	Drive Alone		Carpool		Public Transit ¹		Non-Motor ²		Work at Home	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Oceanside	52,880	73%	11,779	16%	2,692	4%	1,828	2.5%	2,658	4%
County of San Diego	977,286	74%	173,069	13%	44,871	3%	66,346	5%	58,122	4%

Footnotes:

1. Includes bus, transit, rail, and other forms of public transportation.
2. Includes bicycle, walk, and other non-motorized trips.

Note: Percentages do not equal 100 due to rounding.

Source: 2000 Census, SANDAG website.

The San Diego Regional Transportation Plan provides for a regional TDM program. The regional TDM program provides a mix of opportunities and services to promote viable alternatives to the single occupant motor vehicle commute. iCommute (www.icommutesd.com) is the regional program that offers commute choices within the San Diego region. The program is managed by SANDAG as part of the regional 511 transportation information program. The goal of the program is to manage and reduce traffic congestion during peak-times, as well as reduce greenhouse gas emissions and other environmental pollutants that result from commuters driving to work alone



CHAPTER HIGHLIGHTS

- Reduce the Use of the Single Occupant Vehicle
- Encourage TDM Strategies Such as Teleworking or Staggered Work Hours
- Encourage Residents to Use Alternative Modes of Transportation

daily. iCommute offers assistance and tools to commuters and employers through various services such as carpool, vanpool, schoolpool, transit, bike to work, and work from home programs.

Carpool – Carpooling shares the daily commute with another driver. iCommute offers RideMatcher, which is a database of thousands of commuters looking for carpool partners. TripTracker allows the individual commuter to track carpool trips and see the cost and environmental savings. The iCommute Carpool program also offers a Guaranteed Ride Home Program for those who carpool three or more times each week. And, park-and-ride lots are free and available for those who carpool or vanpool. Oceanside currently has four park-and-ride lots at the following locations:

- SR78/College Boulevard South (3700 Haymar Drive)
- Moreno Street (1928 Moreno Street)
- SR78/College Boulevard North (3710 Vista Way)
- Frontier Drive/New Hope Church (Mission Avenue and Frontier Drive)

Vanpool – Vanpools allow groups of 7 to 15 people to share their commute to work. A van can be leased by the commuter or an employer through one of iCommute’s contracted vanpool vendors and receive up to \$400 per month to help offset the cost of the lease. The RideMatcher, TripTracker, Guaranteed Ride Home, and Park and Ride Lots are all available to vanpool commuters as well.

SchoolPool – This is iCommute’s free carpool matching service for parents of children who attend the same school anywhere in the region. iCommute has helped to establish SchoolPool programs at elementary, middle, and high schools throughout the region.

Transit – Public transportation service is available throughout the region, including Oceanside. iCommute offers a link to 511’s Transit Trip Planner to plan a commute using the public transportation available in the San Diego region.

Bike to Work – iCommute will help a commuter find a ride partner, as well as connect the commuter with a free bike locator and map out the best route of travel. There are even some financial incentives offered through certain employers who commute by bicycle.

Work from Home – Teleworking is a convenient solution that enables employees to work from home or a remote location one or more days per week. iCommute can refer an employer to area teleworking and flexible working experts who will help establish program evaluation guidelines and strategies, training sessions for employees and managers, one-on-one consultation with telework experts, presentation on teleworking designed for middle and upper management, and the overall design and implementation of a customized telework program.

The City of Oceanside can also integrate these TDM programs through their Energy Roadmap. SANDAG is coordinating the Energy Roadmap program to offer energy-planning assistance to local governments in the San Diego region through an energy-efficiency partnership with SDG&E. By saving energy, local jurisdictions can contribute to state and regional goals for saving energy and reducing greenhouse gas emissions that contribute to climate change. The iCommute program provides free assistance and tools for jurisdictions to design and implement TDM programs as part of their Energy Roadmap. TDM programs promote transportation solutions that reduce traffic congestion, fuel consumption, and greenhouse gas emissions by providing alternatives to commuters who drive alone to work.

GOAL: *Support programs that encourage increased vehicle occupancies and trip reduction in order for residents to enjoy the quality of life that currently exists in Oceanside.*

OBJECTIVES:

- i.* Move more people in fewer vehicles while providing high quality modes of transportation.
- ii.* Maintain high quality transportation services which cater to the needs of all residents, regardless of age, income, or physical ability.
- iii.* Encourage alternative modes of transportation through TDM practices such as transit, walking, bicycling, and teleworking especially during peak travel periods.

POLICIES:

The following policies are intended to direct City efforts to promote the integration of TDM programs:

- 4.1** The City shall encourage the reduction of vehicle miles traveled, reduction of the total number of daily and peak hour vehicle trips, and provide better utilization of the circulation system through development and implementation of TDM strategies. These may include, but not limited to, implementation of peak hour trip reduction, encourage staggered work hours, telework programs, increased development of employment centers where transit usage is highly viable, encouragement of ridesharing options in the public and private sector, provision for park-and-ride facilities adjacent to the regional transportation system, and provision for transit subsidies.
- 4.2** The City shall maintain and implement the policies and recommendations of the Bicycle Master Plan as part of the

- Recreational Trails Element. These facilities shall connect residential areas with schools, parks, recreation areas, major employment centers, and neighborhood commercial areas.
- 4.3** The City shall maintain and implement the policies and recommendations of the Pedestrian Master Plan as part of the Recreational Trails Element to ensure pedestrian access along streets and other locations throughout the City are properly maintained and provided.
 - 4.4** The City shall support parking policies that increase the cost of parking and/or reduce the supply of off-street parking to encourage drivers to consider using alternative modes of transportation or carpool/vanpool opportunities where transit facilities are available.
 - 4.5** The City shall encourage businesses to offer financial incentives to use modes of transportation other than the single occupant vehicle by way of subsidized transit, carpool/vanpool programs, bike to work programs, parking cash-out programs, or some combination of these.
 - 4.6** The City shall encourage new developments to provide onsite facilities such as showers, lockers, carpool stalls, and bicycle racks.
 - 4.7** The City shall coordinate with businesses and employers to organize and facilitate transportation commuter fairs that provide information on carpools, vanpools, transit, bicycling, and other alternative commute modes to the single occupant vehicle, as well as the advantages and costs savings of alternative forms of transportation.
 - 4.8** The City shall support and promote SANDAG's regional iCommute program that encourages the reduction of the use of the single occupancy vehicle.
 - 4.9** The City shall look for opportunities to incorporate TDM programs into their Energy Roadmap that contributes to state and regional goals for saving energy and reducing greenhouse gas emissions.
 - 4.10** The City shall maintain curb use priorities that consider, in descending order, the needs of through traffic, transit stops, bus turnouts, passenger loading needs, and short- and long-term parking.

5. PUBLIC TRANSIT AND RAIL POLICIES AND GUIDELINES

The public transit and rail chapter focuses upon the enhancement and expansion of the transit services in the City of Oceanside. An integral part of the multimodal system is the provision for public transit and rail service. For transit to be successful, it should be strategically planned so that it is accessible to users and operates in a timely fashion. Adequate public transit improves the overall mobility for all residents in the City and its visitors, and encourages multimodalism, increased transit ridership and other alternatives to the single-occupant vehicle as a mode of transportation.

Improvements to the transit system could increase the number of riders, reduce reliance on the automobile, decrease the need for street capacity improvements, make more efficient use of the existing street system, reduce the demand for parking, improve air quality, increase interaction among people, and enhance the quality of life for residents of Oceanside. In addition, the provision of public transit and rail in the City of Oceanside promotes a balanced, multimodal transportation network that is capable of meeting the needs of all users.

The following is a list of public transit and rail systems that currently provide service to the City of Oceanside.

North County Transit District (NCTD) BREEZE – public bus system for North County travel that connects with the COASTER, SPRINTER, Metrolink, Amtrak, San Diego Transit and Trolley lines, and Orange County Transit Authority system at the San Clemente station.

NCTD COASTER – commuter rail system that links North County and San Diego with seven stations from Oceanside to downtown San Diego in the Interstate 5 corridor.

NCTD SPRINTER – passenger light rail system that provides the east-west mobility link between Oceanside, Vista, San Marcos, and Escondido that runs 22 miles along the SR78 corridor. The SPRINTER also connects with the COASTER at the Oceanside Transit Center.

LIFT ADA Service – paratransit service that operates during the same days and hours that the BREEZE fixed route system operates providing curb to curb service.

Metrolink – commuter rail system that provides connection between Oceanside and Orange, Los Angeles, Riverside, San Bernardino, and Ventura Counties in Southern California.

Amtrak Pacific Surfliner – intercity passenger rail service.

CHAPTER HIGHLIGHTS

- Increase the Use of Transit and Rail Service in Oceanside
- Support Frequent, Reliable & Convenient Transit Service
- Utilize Public Transit and Rail Service as a Way to Reduce Automobile Emissions

There are 12 bus routes operated by NCTD in Oceanside in addition to the COASTER rail and SPRINTER light-rail service. Table 5-1 gives a summary of the existing transit service in Oceanside. Figure 5.1 (page 54) depicts the existing transit service in Oceanside (Source: *NCTD 2011 Mobility Plan*).

**TABLE 5-1
EXISTING TRANSIT SERVICE ROUTES**

Route	Endpoints		Major Corridors Served	Weekday Frequency (weekday)
101	Oceanside Transit Center	UTC	Coast Hwy	30 mins
302	Oceanside Transit Center	Vista Transit Center	Vista Way	30 mins
303	Oceanside Transit Center	Vista Transit Center	Mission Ave Douglas Dr N. River Rd N. Santa Fe Ave	15 mins
309	College Blvd Town Center North	Encinitas Station	El Camino Real Douglas Dr	30 mins
313	Oceanside Transit Center	College Blvd Town Center North	Mesa Dr Mission Ave Rancho Del Oro Rd	60 mins
315	College Blvd Town Center North	22 Area Camp Pendleton	Vandegrift Blvd	60 mins
317	Vandegrift Blvd/Gold Dr	Rancho Del Oro Sprinter Station	Vandegrift Blvd College Blvd	60 mins
318	Oceanside Transit Center	El Camino Real Sprinter Station	Oceanside Blvd	60 mins
319	El Corazon Senior Center	MiraCosta College	Rancho Del Oro Dr Barnard Dr	30 mins
325	Carlsbad Village	College Blvd Town Center North	College Blvd Vista Way	60 mins
333	College Blvd Town Center North	Vista Transit Center	Frazee Rd Old Grove Rd Oceanside Blvd	60 mins
395	Oceanside Transit Center	El Camino Real (Orange County)	Coast Hwy Camp Pendleton	180 mins
SPRINTER	Oceanside Transit Center	Escondido Transit Center	Oceanside Blvd	30 mins
COASTER	Oceanside Transit Center	Santa Fe Depot (San Diego)	Coast Hwy	45-35 mins

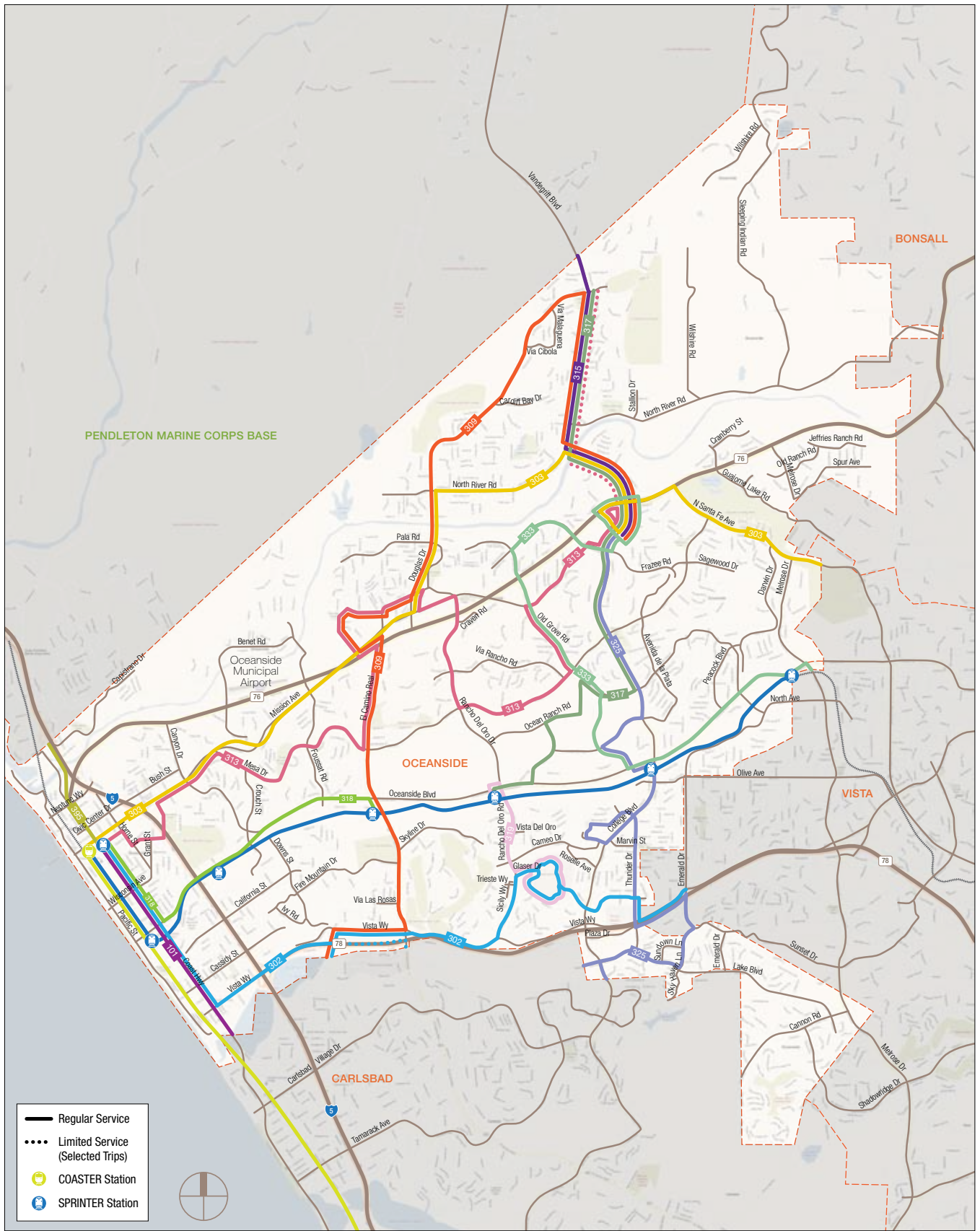
NCTD has prepared the 2011 Mobility Plan to provide a road map for fundamentally restructuring NCTD's services and enhancing the area's role as the mobility manager for its area. The primary purpose of the plan is to enable NCTD to make the best use of available resources to provide the best possible mobility options to its residents.

Based on the proposed transit service for the City of Oceanside shown within the 2011 Mobility Plan, the following corridors will be served by transit in the future:

- Avenida del Oro
- Avenida de la Plata
- Coast Highway
- College Boulevard
- Corporate Center Drive
- Douglas Drive
- El Camino Real
- Melrose Drive
- Mesa Drive
- Mission Avenue
- North River Road
- North Santa Fe Avenue
- Oceanside Boulevard
- Rancho Del Oro Drive
- Vandegrift Boulevard
- Vista Way



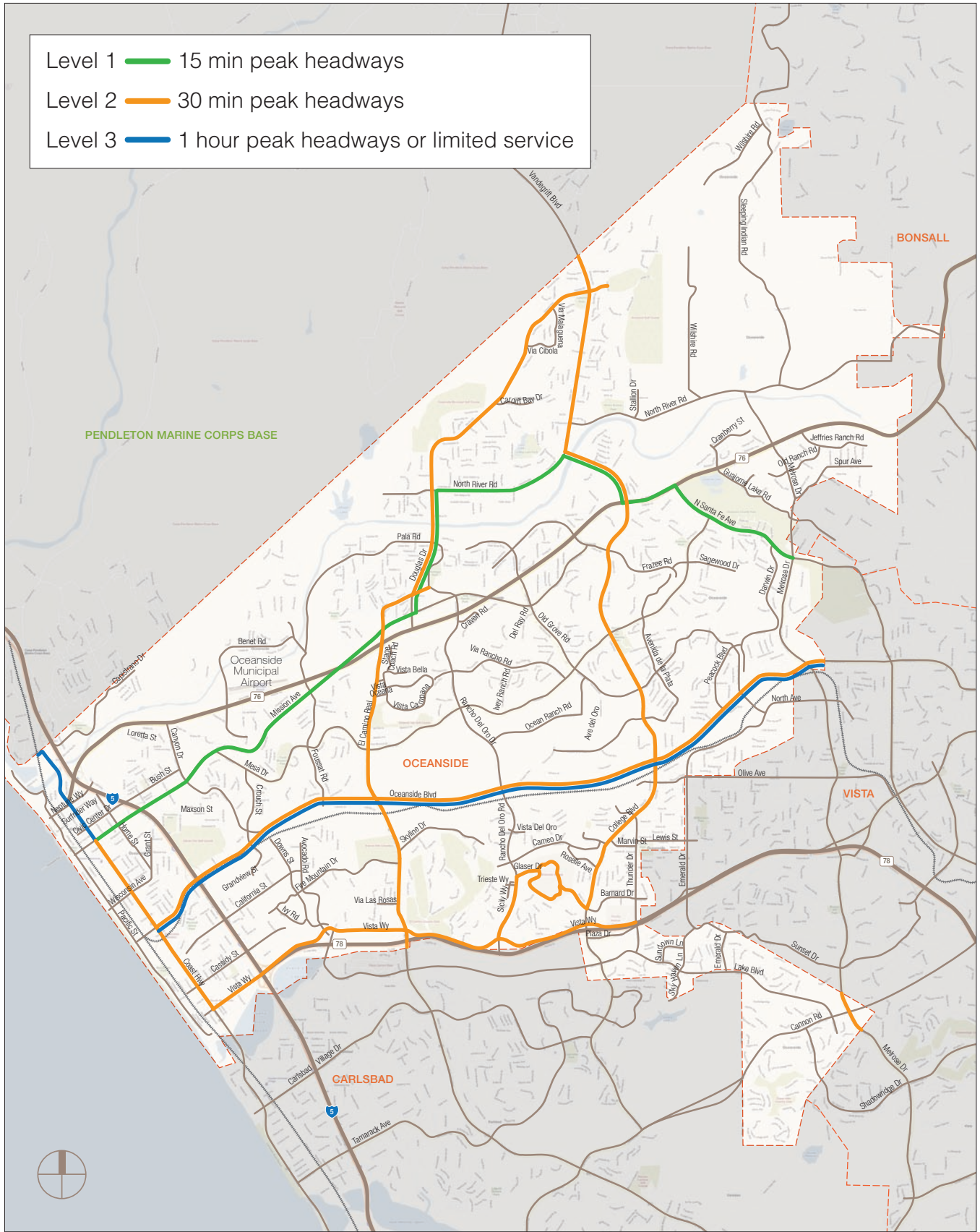
Figure 5.2 (page 55) depicts the future major transit corridors in the City of Oceanside. These major transit corridors are based on the proposed service information available in the 2011 Mobility Plan which is included in Appendix H.



Not to Scale



- Level 1 — 15 min peak headways
- Level 2 — 30 min peak headways
- Level 3 — 1 hour peak headways or limited service



The policies within this section seek to provide and maintain a safe, efficient, and environmentally friendly public transit and rail system for the City of Oceanside and its residents.

GOAL 1: *Support the increased use and availability of transit and rail service to encourage a multimodal transportation network in Oceanside.*

GOAL 2: *Ensure that Oceanside residents have adequate and convenient public transportation by collaborating with NCTD.*



OBJECTIVES:

- i.* Support programs that reduce the interregional use of the single-occupant vehicles and increase the use of alternative forms of transportation.
- ii.* Support the development, improvement, expansion, and increased ridership of transit within the City, including the development of new forms of transit and transit technologies as they become available.
- iii.* Support mixed use developments in transit focus areas and transit oriented developments.
- iv.* Support and work with NCTD to ensure that frequent, reliable, and convenient transit service is available to the residents of Oceanside.

POLICIES:

- 5.1** The City shall collaborate with NCTD to attain a balance of transportation opportunities. This shall include the establishment of criteria to implement transit improvements, corridor improvements, transit centers, and track improvements and maintenance.
- 5.2** The City shall require developers to construct, where appropriate, transit facilities when their development is on a transit service route including bus stop amenities to include lighted shelters, benches, and route information signs (where appropriate) through coordination with NCTD.
- 5.3** The City shall collaborate with NCTD to establish transit stops adjacent to senior housing facilities, areas with high concentrations of medical facilities, and major employment centers, as well as retail and commercial areas.



- 5.4** The City shall collaborate with NCTD to support the provision of paratransit services and facilities for elderly and disabled residents, and those of limited means, which shall include bus stops, bus shelters, and ramps at stops.
- 5.5** The City shall collaborate and work with NCTD to identify and implement opportunities to improve transit and bus operations through methods such as transit signal priority, bus only lanes, or queue jump lanes at locations where transit service levels are affected by traffic congestion.
- 5.6** The City shall provide improved information and directional destination signage to the transit centers and stations along Coast Highway, Oceanside Boulevard, and other major thoroughfares.
- 5.7** The City shall continue to work with NCTD to ensure that transit centers and major stops have adequate bicycle and pedestrian access, including secure bicycle storage. The City shall continue to work with NCTD to encourage more bus services that accommodate bicycles.
- 5.8** The City shall work with NCTD, as applicable, to provide safe and adequate transit facilities that include covered shelters, proper lighting, safe crossings, and locations that are highly visible.
- 5.9** The City shall continue to work with NCTD to ensure that access to transit stations and bus stops are ADA compliant.
- 5.10** The City shall work with NCTD to encourage additional passenger usage of rail service by providing safe and adequate commuter parking facilities with shuttle service, if appropriate, and enhanced landscaping.
- 5.11** The City shall work with NCTD to increase public awareness of the local and regional transit services and facilities available in Oceanside.
- 5.12** The City shall support goods movement through the use of railroad freight service in support of the reduction of greenhouse gas emissions.
- 5.13** The City shall support policies in the Land Use chapter of the General Plan that encourage the use of transit and mixed use development.



6. BICYCLE FACILITIES

In addition to roadways and various forms of transit, non-motorized transportation alternatives are encouraged throughout the City of Oceanside. Bicycle transportation provides environmental and social benefits for the citizens of Oceanside by providing an integrated network of bicycle facilities and trails for the safe and efficient movement of people in and through the City of Oceanside.

In 2008, the City of Oceanside adopted a Bicycle Master Plan designed to guide development and maintenance, identify funding sources, and promote use of its bicycle facilities. It contains detailed policies, network maps, and other tools to be used by the City in order to provide the cycling needs of City residents and other stakeholders. The 2008 adopted Bicycle Master Plan is included in Appendix A.

As with all California cities, Oceanside's bicycle facilities are grouped into three classes as defined by Caltrans:

Class I Bike Paths are hard-surface routes within an exclusive right-of-way physically separated from vehicular roadways and intended specifically for non-motorized use.

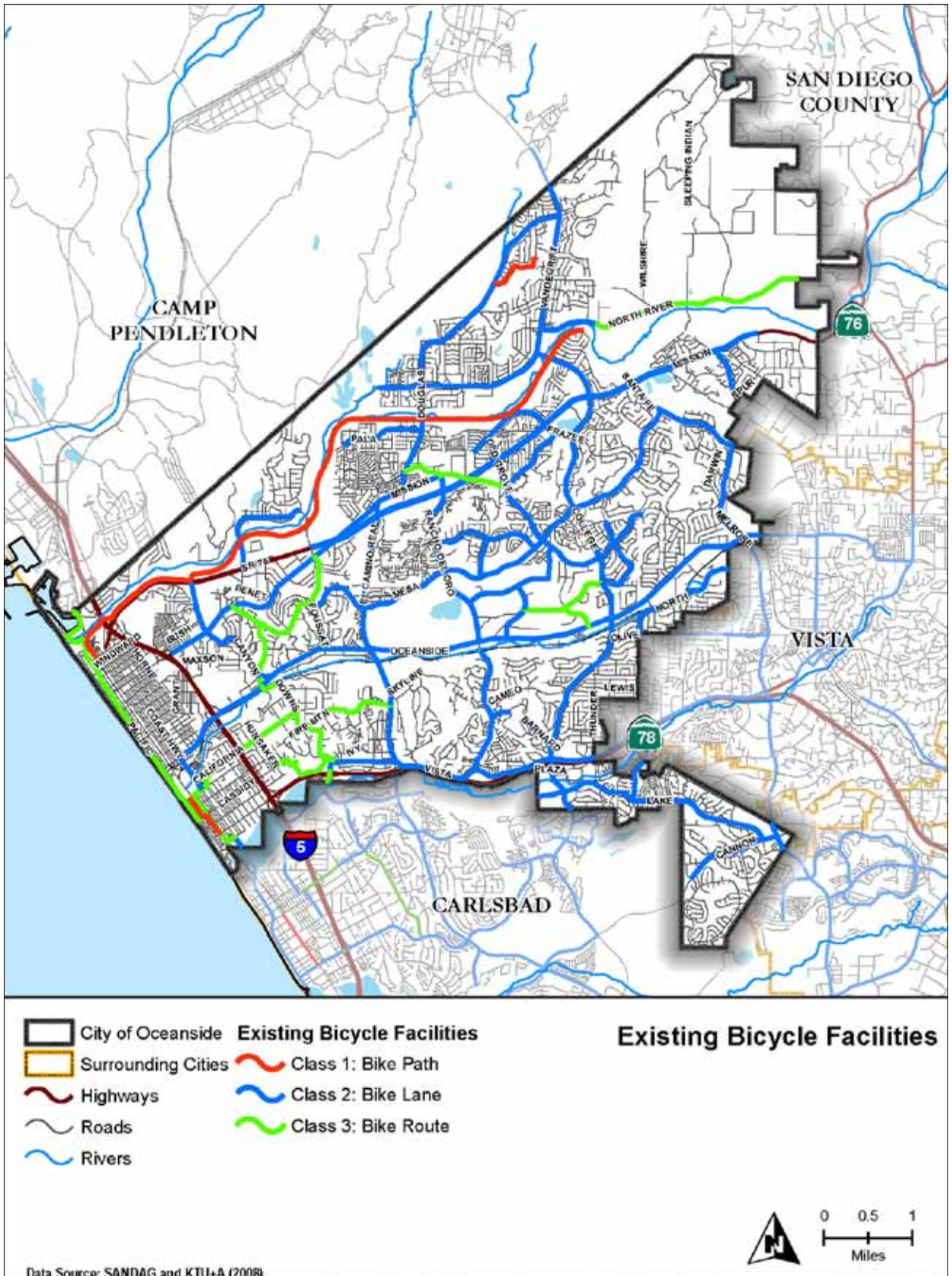
Class II Bike Lanes are marked bicycle lanes within roadways adjacent to the curb lane, delineated by appropriate striping and signage.

Class III Bike Routes are marked by a series of signs designating a preferred route between destinations such as residential neighborhoods and shopping areas. These routes share the right-of-way with on road vehicles.

Figure 6.1 on the following page illustrates the existing bicycle facilities in Oceanside.

CHAPTER HIGHLIGHTS

- A Connected Network of Cycling Facilities to Facilitate Use
- Safe, Destination-Oriented Network of Facilities
- Easy-to-Understand Wayfinding Measures and Other Physical Treatments
- Regular Maintenance of Existing Facilities



6.1 Bicycle Facilities

Building on the efforts of the Bicycle Master Plan, the following goals, objectives, and policies were developed in close cooperation with City staff and community stakeholders. Together, they represent the fundamental criteria for the City of Oceanside's planned bikeway system.

GOAL 1: *Provide a safe, interconnected network of bicycle facilities within Oceanside for recreational and commuter users.*

GOAL 2: *Make bicycling a viable mode choice in an effort to reduce congestion, improve air quality, and provide residents and visitors with public health and recreational benefits.*



OBJECTIVES:

- i.* Ensure the bikeway system will endeavor to be a complete system emphasizing local and regional continuity and connectivity.
- ii.* Design the bikeway system to be destination-oriented, especially towards employment centers, residential areas, and high use activity centers – including access to other modes of local and regional transportation systems.
- iii.* Ensure safety along the bikeway system by focusing on maximum visibility for the cyclist, signage, bikeway segment selection, and utilizing easily-recognized markers to clearly identify paths, lanes and routes.
- iv.* Conform to the minimum design standards established by Caltrans Highway Design Manual Chapter 1000.
- v.* Regularly maintain bikeway system segments and facilities.
- vi.* Implement bikeway system design and layout to minimize the City's and adjacent property owners' liability exposure to issues such as trespassing, loss of privacy, damage, and property loss associated with bike routes.
- vii.* Whenever possible, develop bikeway system design and layout to minimize potential financial burden to the City by engaging development to implement bike segments, locating segments within the existing right-of-way, and minimizing the need for acquisition.
- viii.* Whenever possible, construct the bikeway system to utilize



- environmentally sensitive routing to minimize environmental impacts.
- ix.** Strive to include bicycle facilities including, but not limited to, bike lockers and locking racks at existing and new developments.
 - x.** Increase the amount of bicycle parking in areas of high bicycle traffic.
 - xi.** Provide training opportunities for engineering, planning staff, and law enforcement on how to accommodate bicyclists.
 - xii.** Continue to utilize City and community resources to not only promote the benefits of cycling, but also to enhance safety by educating both cyclists and drivers to coexist with an awareness of each other.

POLICIES:

- 6.1** The City shall implement the Bicycle Master Plan, which identifies existing and future needs and provides funding and implementation recommendations.
 - Update the plan periodically as required by Caltrans.
 - Require that the development of the Bicycle Circulation System be consistent with the implementation of the City’s Bicycle Master Plan.
- 6.2** The City shall discourage on-street parking where bicycle lanes or routes are present or planned.
- 6.3** The City shall integrate bicycle and pedestrian planning and safety considerations more fully into the planning and design of the roadway network, transit facilities, public buildings, and parks.
- 6.4** The City shall provide and maintain a safe, direct, and comprehensive bicycle network connecting neighborhoods, employment locations, public facilities, transit stations, parks and other key destinations.
- 6.5** The City shall plan Class II bicycle lanes into all prime arterial, major arterials, and secondary collectors where safe and appropriate as determined by City staff.
- 6.6** The City shall cooperate with other government agencies to provide connection and continuation of the regional bicycle routes and corridors such as the Coastal Rail Trail, Camp Pendleton Trail, San Luis Rey River Trail, El Camino Real Bikeway, and Inland Rail Trail as identified in the 2030 San Diego Regional Transportation Plan.

CHAPTER HIGHLIGHTS

- Design Cycling Facilities that Minimize Environmental Impacts
- Increase Bicycle Parking and Provide Other Bicycle Amenities in Areas with High Bicycle Usage
- Promote Education and Training Opportunities for Law Enforcement and Local Residents on Proper Cycling Behavior and Enforcement

- 6.7** The City shall encourage large new developments to be designed with features such as secure bicycle parking and lockers, bike racks, shower facilities, and other amenities that accommodate bicycle users.
- 6.8** The City shall support bicycle outreach efforts consistent with the cycling engineering, education, enforcement, and encouragement efforts identified in the Bicycle Master Plan.
- 6.9** The City shall continue to develop and implement a Safe Routes to School program to ensure that all schools have adequate traffic safety programs for bicycles and pedestrians within a two-mile radius of the school.
- 6.10** The City shall continue to seek private, local, State, and federal funds for bicycle circulation system expansion.

PLANNED AND RECOMMENDED FACILITIES

Prior to the adoption of the Bicycle Master Plan, the City had a series of additional planned facilities slated for implementation.

These facilities mirror the goals, objectives, and policies above, and provide guidance to City staff on the ways in which to best implement the improvements as defined in previous iterations of the Circulation Element and those additional recommendations developed as part of the Bicycle Master Plan.

Figures 6.2 and 6.3 illustrate the City's Planned Bicycle Facilities and the additional Recommended Bicycle Facilities proposed in the Bicycle Master Plan.

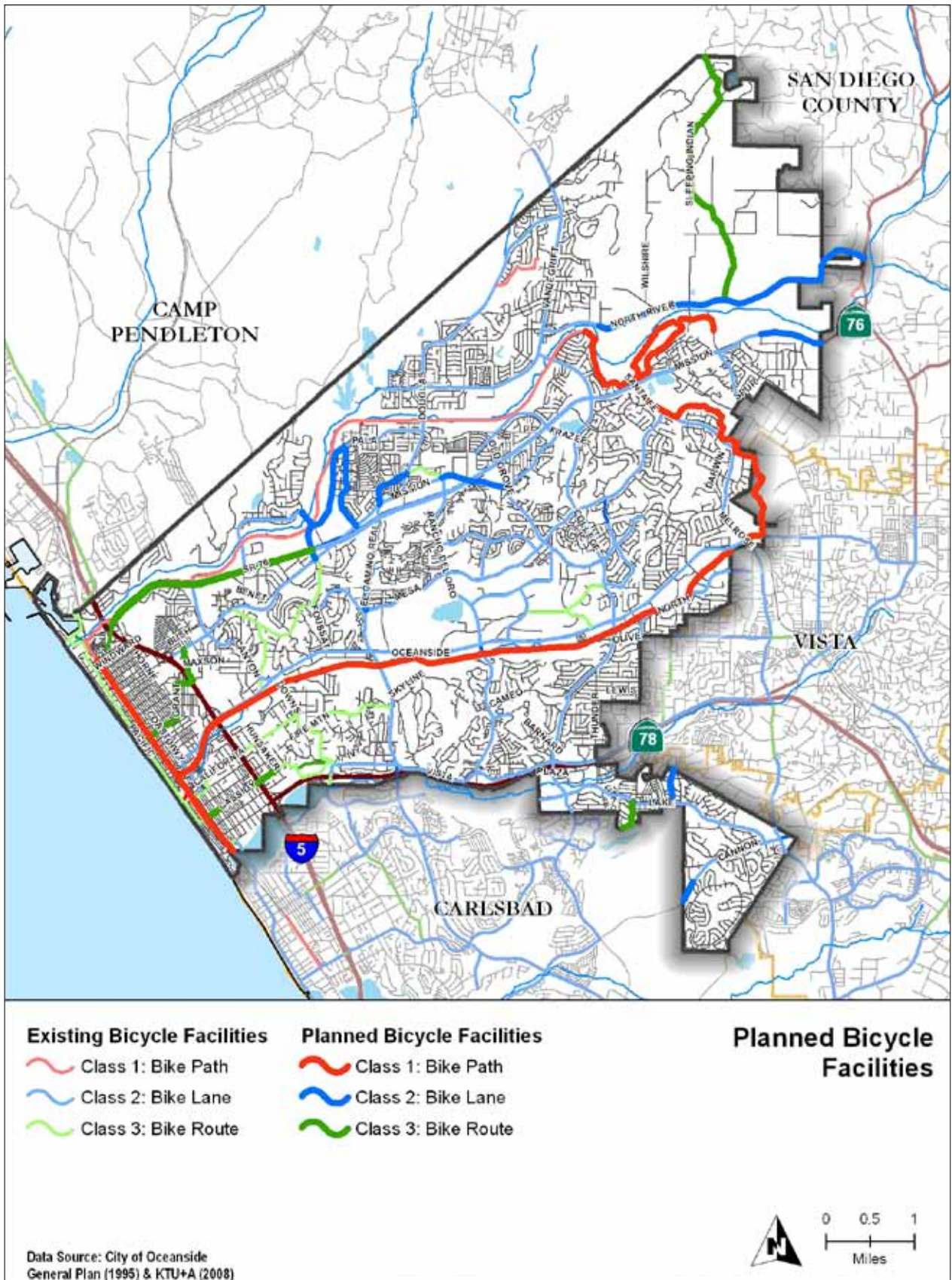
6.2 Equestrian Facilities

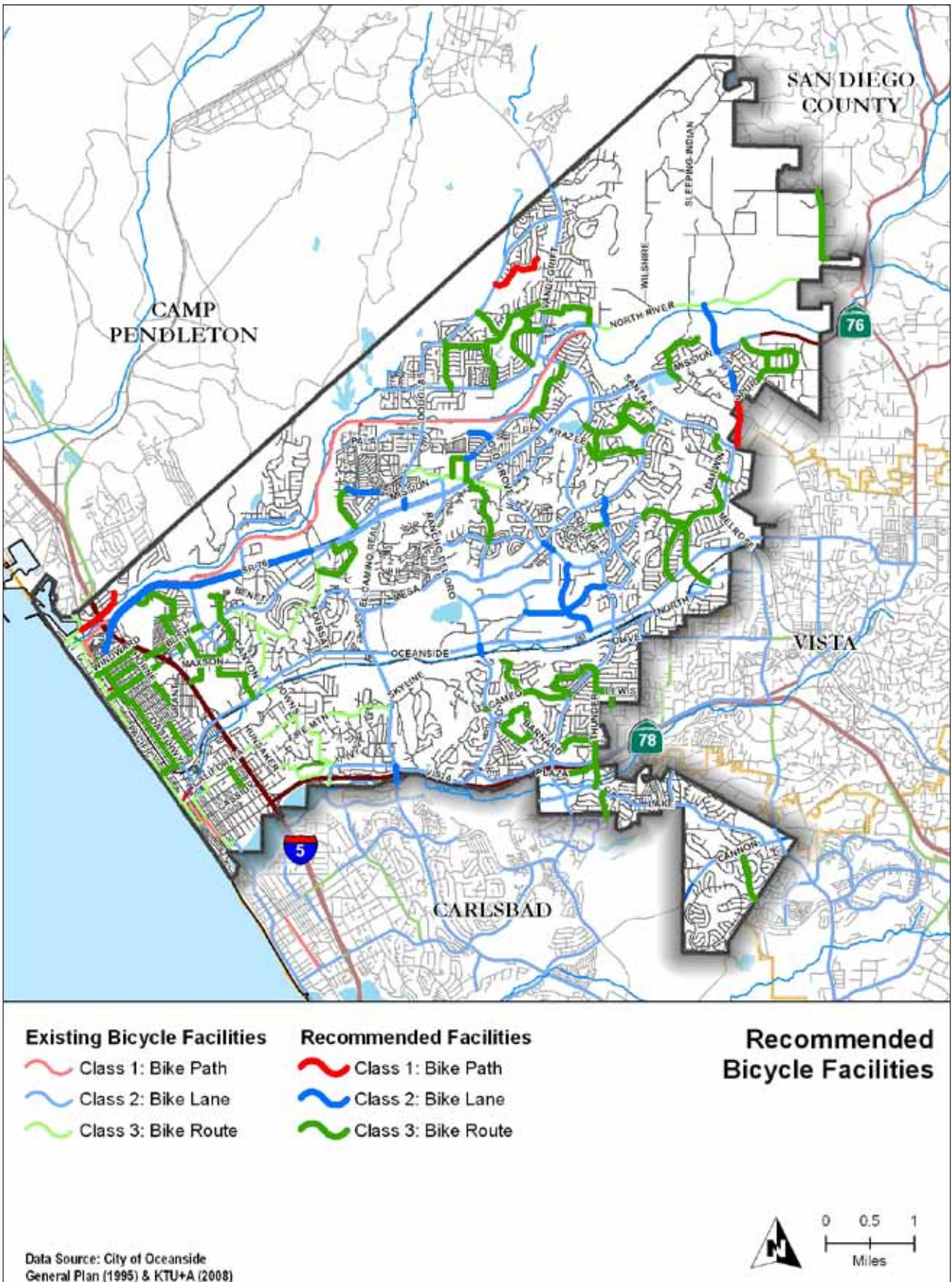
OBJECTIVE:

- i.* Preserve and enhance equestrian trails where they currently exist in the vicinity of Guajome Regional Park and to cooperate with San Diego County in planning regional recreational trails.

POLICY:

- 6.11** The City shall protect and maintain the equestrian trails as a form of recreational opportunity and provide additional trail opportunities as part of the implementation of the City's Recreational Trails Element.





7. PEDESTRIAN FACILITIES

Pedestrian facilities should enhance the quality of the walking and public transit environments, and foster greater use of both modes. Improvements should focus on reductions in the number and severity of pedestrian-vehicle conflict points, clarified pedestrian routing, widened sidewalks, and improved aesthetic features such as landscaping.



Encouraging a more walkable community will bring many benefits to the City of Oceanside. It will provide convenient and affordable transportation options, reduce vehicular-travel and related pollution, and improve the overall health and fitness of residents.

There are different areas within the City of Oceanside that require different levels of pedestrian improvements based upon adjacent roadways, levels of usage, topography and land uses. All walking facilities found within Oceanside fit into one of the following seven walking facility route types.

District Sidewalks

District sidewalks are sidewalks along roads that support heavy pedestrian levels in mixed-use concentrated urban areas. Usually, the district is an urbanized area with special functions, such as theater districts, office parks, shopping centers, or college campuses.

Corridor Sidewalks

Corridor sidewalks are defined as sidewalks along roads that support moderate density business and shopping districts with moderate pedestrian levels. They can range from wide sidewalks along boulevards to small sidewalks along a heavily auto oriented roadway.

Connector Sidewalks

Connector sidewalks tend to have low pedestrian levels and are along roads with moderate to high average vehicular traffic. Connector sidewalks tend to be long and, in some cases, do not have accessible land uses directly adjacent to the sidewalk.

Neighborhood Sidewalks

Neighborhood sidewalks are sidewalks along roads that support low to moderate density housing with low to moderate pedestrian levels. Neighborhood streets and their associated walkways are generally lower volume streets, with low to moderate widths, single lanes in each direction, and posted speed limits of 25 miles per hour.

CHAPTER HIGHLIGHTS

- Support Walking as a Primary Means of Transportation
- Improve Pedestrian Safety Around Schools
- Repair Sidewalks and Remove Pedestrian Hazards
- Implement Safe Routes To School Programs
- Provide Accessible Pedestrian Facilities at Transit Stations and Bus Stops

Ancillary Pedestrian Facilities

Ancillary Pedestrian Facilities are facilities away from or crossing over streets such as plazas, paseos, promenades, courtyards or pedestrian bridges and stairways. Many of these ancillary facilities attract local residents and workers, generating moderate to high pedestrian use.

Paths

Paths are paved facilities with exclusive right-of-ways that act as corridors and have little or no vehicular cross flows. Many of these paths are exclusive to pedestrians and bicycles and are not associated with streets.

Trails

Unpaved walkways or roads used for recreational use or open space maintenance are classified as Trails. Trails are separated from roads and support activities such as hiking, biking and walking primarily through parks and open space.

As part of developing the Pedestrian Master Plan, the areas of high pedestrian activity within the City of Oceanside were identified. This was done through the use of a Pedestrian Priority Model which combines pedestrian generators, attractors, barriers, and detractor issues to identify areas that have high generators, attractors, barriers, and detractors. This model helped identify the areas within Oceanside where pedestrians are most likely to be, either currently or if improvements were made. Figure 7.1 depicts the pedestrian activity levels within the City of Oceanside for both existing and potential pedestrian activity areas.



The goals and policies contained in this chapter were taken from the Pedestrian Master Plan (PMP), as the PMP is a planning document consistent with the Circulation Element for the City's long range pedestrian planning efforts.

- GOAL 1:** *Develop and maintain a safe pedestrian network that is free of barriers and hazards; that has sufficient lighting, signs, signals, street crossings, and buffers from vehicular traffic in order to create a sense of security for the pedestrian. Utilize corrective measures through engineering, education, and enforcement.*
- GOAL 2:** *Create pedestrian environments that encourage walking through the use of public art, street trees, furnishings, and other amenities. Ensure a positive walking environment by making the pedestrian feel protected, comfortable and connected with the environment and the City.*
- GOAL 3:** *Develop a complete pedestrian network that provides continuous and convenient access to transit, employment centers, retail, neighborhoods, schools, beaches, parks, public places and other essential pedestrian destinations.*
- GOAL 4:** *Ensure that pedestrian facilities meet local, State and federal access requirements. Utilize "Universal Access" principles that go beyond the minimum standards, since all pedestrians benefit from this approach.*
- GOAL 5:** *Support walking as a primary means of transportation that in turn supports transit and bike options. A positive walking environment is essential for supporting smart growth, mixed land uses, transit oriented development, traffic calming and reducing traffic congestion and greenhouse gas emissions.*
- GOAL 6:** *When walkable communities are provided, they enhance neighborhood quality by providing opportunities for social interaction, enhanced economic development and healthy lifestyles. A walkable community can provide clarity to the physical organization of neighborhoods by making people familiar with their environment.*
- GOAL 7:** *Identify funding for pedestrian facilities to encourage walking as a key form of transportation within the City. Develop an action priority plan to acquire funding for pedestrian facilities to create an economical and efficient pedestrian network within Oceanside by partnering with private interests and other public agencies.*



OBJECTIVES:

- i.* Support projects, improvements, and programs that create a safer pedestrian walking environment.
- ii.* Encourage development patterns that promote walking and increase connectivity.
- iii.* Work towards closing the existing gaps in Oceanside's pedestrian network.
- iv.* Promote accessibility and mobility for all people including children, disabled, and the elderly.



POLICIES:

- 7.1** The City shall identify and work towards repairing sidewalks and public areas that have pedestrian hazards.
- 7.2** The City shall encourage pedestrian facility improvements such as signs, signals, streets crossings, and proper lighting especially in areas where there is high pedestrian activity and/or safety issues.
- 7.3** The City shall develop education programs to improve driver and pedestrian knowledge of pedestrian rights.
- 7.4** The City shall continue to enforce pedestrian right-of-way laws.
- 7.5** The City shall develop projects and programs to improve pedestrian safety around schools.
- 7.6** The City shall encourage future development to avoid sidewalk obstructions such as newspaper stands, signage, etc.
- 7.7** The City shall require the construction of a minimum five-foot wide sidewalk in all new developments and street improvements but will encourage sidewalk widths that go beyond the minimum five-foot ADA standards in areas with high pedestrian activity.
- 7.8** The City shall encourage the inclusion of public walkways, open space, or trails for pedestrian usage in large, private developments.
- 7.9** In accordance with State law, the City shall provide for the handicapped and elderly to all public buildings by the removal of architectural and access barriers.
- 7.10** The City shall require all new developments to provide universal access (meaning access for all ages or persons with disabilities).



- 7.11** The City shall encourage the inclusion of public walkways, open space, and trails in large, private developments.
- 7.12** The City shall continue to fulfill the federal mandate to provide curb ramps at every pedestrian crossing.
- 7.13** The City shall continue to develop and implement a Safe Routes to School program to ensure that all schools have adequate traffic safety programs for pedestrians and bicycles within a two-mile radius of the school.
- 7.14** The City shall encourage and promote quality pedestrian access to transit stations and bus stops in Oceanside.
- 7.15** The City shall work with NCTD to provide accessible pedestrian facilities at transit stations and bus stops.
- 7.16** The City shall implement the recommendations of the Pedestrian Master Plan.
- 7.17** The City shall require that pedestrian circulation and facilities be developed consistent with the City's Recreational Trails Element.



PLAN RECOMMENDATIONS

The Pedestrian Master Plan identified several pedestrian issues concerned with missing sidewalks, safety, accessibility, walkability, and connectivity. All of the issues identified as part of the Pedestrian Master Plan were prioritized into the top 25 projects based on a ranking system that was developed. The list of top 25 priority projects is shown in Table 7-1. A more detailed assessment of each of the 25 projects is included in the Pedestrian Master Plan (*November 2009*). The Pedestrian Master Plan is included in Appendix B.

**TABLE 7-1
SUMMARY OF TOP 25 PEDESTRIAN PROJECTS PRIORITIZED**

Prioritized Project Number	Location	Improvements	Pedestrian Activity Levels	Safety	Access-ibility	Connec-tivity	Walk-ability	Innov-ation	Total Score	Total Cost
1	South Coast Highway, South Tremont and Cleveland Streets (Between Mission Ave and Leonard Ave)	Enhance street conditions, add green space, new streets, roundabouts and increased mixed use, add lighting.	10	44	14	11	9	2	90	N/A
2	Mission Avenue (Between Pacific St and Horne St)	Install more lighting, pedestrian warning signs, and enhanced crosswalks when the opportunity presents itself. Install traffic signal at Clementine St when the signal warrants are met.	10	41	14	11	9	2	87	N/A
3	Mission Avenue (Between Horne St and Archer St)	Install enhanced crosswalks when signal warrants are met and add more pedestrian warning signs.	10	22	14	10	6	2	64	\$6,120
4	Coast Highway (Between Morse St and Oceanside Blvd)	Redefine and extend walkway system to south of tracks to increase accessibility and walkability, add green space, and increase mixed use.	10	15	14	11	9	2	61	N/A
5	Crouch Street at Oceanside Boulevard (Oceanside Blvd at Crouch St and Greenbrier Dr)	Add sidewalks and pedestrian facilities at Crouch Street and Oceanside Blvd. Relocate amenities that block sidewalks.	6	16	14	11	6	2	55	\$369,225
6	Mission Avenue (Between Mesa Dr and Fireside St)	Install missing sidewalks, install and enhance crosswalks when signal warrants are met. Move obstacles from the sidewalks.	2	27	12	7	5	1	54	\$261,799
7	I-5/Oceanside Boulevard (Oceanside Blvd between Saratoga St and Nevada St)	Add missing sidewalks, enhance and install crosswalks when signal warrants are met. Add lighting underneath I-5.	4	15	14	13	4	2	52	\$470,408
8	The Strand (Between Pier View Way and Wisconsin Ave)	Add crosswalks and stop sign at Seagaze Dr when signal warrants are met. Add pedestrian warning signs.	10	5	15	10	9	2	51	\$641,047

Prioritized Project Number	Location	Improvements	Pedestrian Activity Levels	Safety	Access-ibility	Connec-tivity	Walk-ability	Innov-ation	Total Score	Total Cost
9	Pacific Street (Between Pier View Way and Wisconsin Ave)	Increase width of sidewalks based on level of use. Move bollards and install sidewalk into the adjacent planting to provide a wider walking path.	10	8	10	11	7	2	48	\$82,863
10	South Cleveland Street (Between Oceanside Blvd and Wisconsin Ave)	Improve street conditions (street trees, repair sidewalks, add curb ramps..etc)	10	4	13	10	6	2	45	N/A
11	Pier View Way Promenade (Streets including and bordered by Mission Ave, Tremont St, Civic Center and Myers St)	Provide bulbout at corners and move parking signs off of the sidewalks. Move restaurant furniture away from pedestrians path of travel.	10	18	10	3	2	2	45	\$405,675
12	Tremont Street and Cleveland Street (Between Washington Ave and Oceanside Blvd)	Connect and install sidewalks and curb ramps.	6	4	14	13	6	2	45	\$408,071
13	South Coast Highway (Between Eaton St and Cassidy St)	Improve and widen sidewalks. Add roundabouts and shade trees.	4	10	14	5	7	2	42	N/A
14	Oceanside Pier (Pier View Way and Pacific St)	Provide elevator from the Pier to the Strand. Provide a ADA accessible ramp between Pacific Street and the amphitheater. Clear obstacles from the sidewalks.	10	2	14	6	5	3	40	\$1,372,950
15	San Luis Rey River Mouth (West of I-5, between Windward Wy and Harbor Dr)	Provide "Arts Bridge" with a wide sidewalk promenade. Increase traffic calming with roundabouts, crosswalks, and street trees. Extend walkway grid system.	4	3	14	5	9	2	37	N/A
16	El Camino Real at Oceanside Boulevard (El Camino Real and Industry St)	Add crosswalks on Oceanside Blvd at El Camino Real and add missing sidewalks.	4	14	10	4	2	2	36	\$28,283
17	Freeman, Ditmar, Nevada, Clementine and Horne Streets (Between Oceanside Blvd and Seagaze Dr)	Make pedestrian connections across railroad tracks and traffic calming on connector streets. Wider sidewalks. Add missing sidewalks.	4	11	8	3	6	2	34	N/A

Prioritized Project Number	Location	Improvements	Pedestrian Activity Levels	Safety	Access-ibility	Connec-tivity	Walk-ability	Innov-ation	Total Score	Total Cost
18	Pacific Street (Between Wisconsin Ave and Morse St)	Add sidewalks when opportunities arise, remove landscaping within pedestrian path of travel, and revise driveways.	6	8	9	6	2	2	33	\$96,593
19	Academy Road/Mission Avenue (Mission Ave at Academy Rd)	Provide sidewalks and curb ramps on north side of Mission Ave from Academy Rd eastbound under SR76 to entrance of shopping center.	2	1	14	5	6	2	30	\$104,463
20	Canyon Drive/Mission Avenue (Mission Ave at Canyon Dr)	Clear sidewalks of utility boxes. Move "Canyon Dr" sign that hangs over the sidewalk.	10	6	3	4	2	2	27	\$21,600
21	Melrose Drive at Oceanside Boulevard (Melrose Dr and Oceanside Blvd)	Add crosswalks and sidewalks on Oceanside Blvd at Melrose Drive when signal warrants are met.	2	1	9	6	2	2	22	\$236,925
22	San Luis Rey Drive/I-5 Crossing (San Luis Rey Drive at Interstate 5)	Add lighting in the underpass and install paving between staircase and San Luis Rey Drive.	4	2	9	4	2	1	22	\$58,050
23	Pacific Street (Between Morse St and Eaton St)	Address ADA issues on east side of road with ADA accessible ramps. Install sidewalks on west side of Pacific St.	4	1	11	1	2	2	21	\$280,800
24	El Corazon Trail Access (El Corazon Trails at El Camino Real, Oceanside Blvd, and Mesa Dr)	Add missing sidewalks along El Camino Real and Mesa Drive to provide connection. Add trail entry points for future trail access.	2	3	5	4	3	1	18	\$222,102
25	North Side of the San Luis Rey River Trail (North side of San Luis Rey River between College Blvd and Douglas Dr)	Improve walkability with amenities and re-grade surface.	2	1	3	1	5	1	13	\$494,532
Grand Total										\$5,515,336

8. TRAFFIC CALMING

The City of Oceanside strives to be more sustainable and livable with a comprehensive traffic calming program that has incorporated more uniform methods of evaluating hazardous traffic conditions in residential neighborhoods. The purpose of traffic calming methods in the City of Oceanside is to maintain the livable and environmental quality of our neighborhoods while ensuring the safe and efficient movement of people and goods.

The City of Oceanside Neighborhood Traffic Calming Program was adopted by City Council in February 2011. The program lists the goals and objectives for the City. The purpose of the traffic calming program is to identify the cause of neighborhood traffic concerns and determine feasible traffic calming solutions. In general, the traffic calming program applies to local residential streets. A copy of the Neighborhood Traffic Calming Program is included in Appendix I.

The goals and objectives of the traffic calming program are intended to aid in the development and implementation of a traffic calming plan. The goals identify the desired outcome of the traffic calming program, and the objectives identify the method by which the goals of the traffic calming program will be achieved. This chapter reinforces the goals and objectives of the traffic calming program with additional policy recommendations.

GOAL 1: *Improve street safety, promote community character, and enhance the quality of life in Oceanside neighborhoods.*

GOAL 2: *Educate residents on the traffic calming process and make tools available that would address their concerns.*

GOAL 3: *Actively involve the community in identifying solutions to traffic concerns that achieve desired results for their neighborhood.*

OBJECTIVES:

- i.* Provide a structure to clearly identify traffic problems along a street or in a neighborhood.
- ii.* Provide a clear and concise list of tools that may be used to resolve traffic-related issues.
- iii.* Provide a structure for residents throughout the process of initiating traffic calming on their street or in their neighborhood.

CHAPTER HIGHLIGHTS

- Follow the City of Oceanside's Neighborhood Traffic Calming Program
- Support Traffic Calming Measures Where Needed

POLICIES:

- 8.1** The City shall strive to meet the goals, objectives, and standards contained in the City of Oceanside Neighborhood Traffic Calming Program.
- 8.2** The City shall follow established Neighborhood Traffic Calming Program guidelines for existing local streets and established neighborhoods in processing traffic calming requests.
- 8.3** The City shall, where feasible, integrate traffic calming features into the roadway design of local streets in new development areas.
- 8.4** The City shall locate traffic calming devices in new, in-fill, or redevelopment areas in order to minimize the potential for cut-through or high speed traffic.
- 8.5** The City shall consider pedestrian enhancements at intersections with high pedestrian activity.



9 INTELLIGENT TRANSPORTATION SYSTEM TECHNOLOGIES

Intelligent Transportation Systems (ITS) encompass a broad range of technologies and associated operations which seek to improve and maximize the efficiency of the existing transportation infrastructure. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies can alleviate congestion, improve safety, and enhance productivity. It can also be used as a cost effective means of increasing the efficiency of the transportation system.

The use of ITS to improve the efficiency and safety of our transportation resources and networks has been an increasing and progressive trend in the United States and throughout the world. It highlights the need to make the most of the physical infrastructure in order to reduce impacts to the overall urban environment. While the focus is frequently on the technologies being deployed through ITS, it is important to note that each ITS effort must be supported by appropriate operations and maintenance resources to ensure long-term effectiveness.

ITS Currently In Use or Under Development by the City:

The following technologies are either currently in use or under development by the City:

Central Signal Management System is a centralized software application used to monitor and manage traffic signals within the City. This system was updated in 2010 to the new regional standard known as the Regional Arterial Management System (RAMS). This system is also known regionally as QuicNet. This system allows City staff to remotely monitor signal operations and alerts for all signals that have communications back to the City Traffic Management Center (TMC). The system also allows for centralized management of coordinated signal timing plans for corridors. The recently upgraded system also allows for shared monitoring of City, Caltrans interchange, and neighboring jurisdiction signals where agreed to by the agencies involved. Finally, use of this system ensures the City retains consistency with the rest of the agencies in the region in terms of signal operations and providing relevant data to traveler information systems.

Advanced Signal Control Options allow for more advanced approaches to signal operations beyond the traditional application of fixed timing plans for different times of the day. Ranging from what is termed responsive to adaptive, these approaches can be deployed along corridors or in key areas to allow the signal operations to adapt to rapidly changing traffic flows and conditions. In 2010, the City initiated efforts on College Boulevard to test some of these options to assess where they may be most effectively applied.

Emergency Preemption System is the hardware and software comprising a system that provides for the altering of standard traffic signal timings and

CHAPTER HIGHLIGHTS

- Use the TMC to Monitor and Optimize Traffic in Real Time
- Fifty-Eight Intersections will be Connected to the TMC with CCTVs
- Support Various ITS Technologies within Oceanside Now and Potential Ones for the Future

sequences to efficiently accommodate approaching emergency vehicles in order to reduce response times. The City has already deployed an emergency preemption system at all signalized intersections. As this system is very useful for assisting in emergency response, the maintenance and lifecycle replacement should be considered over time.

Closed-Circuit Television (CCTV) is the use of video cameras to transmit a signal to a specific place on a limited set of monitors. The video cameras would usually be mounted on poles or other street fixtures to view traffic flows at intersections, roadways, highways, or bridges. In many cases, cameras used for detection purposes for signal operations can also provide video feeds to allow for real-time remote viewing of traffic conditions. In 2010, the City commenced design and installation of expanded traffic video monitoring capabilities with video feeds being brought to the City TMC.

Driver Feedback Signs and Devices are deployed to inform drivers of their speed as they approach and pass a particular location in relation to the posted speed limit. These devices can also collect data regarding approaching and passing speeds of vehicles, as well as volumes of vehicles, to assist City engineers in determining the effectiveness of speed control measures. The City has deployed some of these devices and will have 11 sites operational in the near-term. Additional sites are planned for the future with potential wireless communications to provide data back to the TMC.



Transportation Management Center serves as the central data collection center where real time information is gathered from many sources such as CCTV cameras and traffic signals. The information received at the TMC would enable City traffic engineers to monitor and optimize traffic in real time to ensure a fast, intelligent and coordinated response is made to improve traffic operations on the circulation system. This information and the associated response measures are usually managed through a software application known as an Advanced Traffic Management System (ATMS). Aside from the use of immediately improving the efficiency of the circulation system, the TMC can monitor and provide traveler information (with the use of changeable message signs) during peak traffic periods and/or emergency situations. In addition, the TMC allows traffic engineers to monitor and adjust traffic signal plans during special events, as well as implement real-time transportation management measures at incident locations. The TMC is equipped to operate as the primary location for the City's Emergency Operation Center. If a natural disaster were to occur, the TMC would provide emergency personnel with up-to-date information to share with officials and citizens. Finally, the City TMC could coordinate with partner TMCs operated by other cities and Caltrans to more readily respond to regional conditions that impact transportation in the City of Oceanside.

The City of Oceanside has completed Phase I of the **Transportation Management Center**. Phase II is currently underway, which consists of preparing plans to install a fiber optic backbone along Coast Highway, Oceanside Boulevard, El Camino Real, and College Boulevard, a 16-panel video wall, and 35 of the proposed CCTV cameras at key signalized

intersections. It is expected that additional phases would follow as funding becomes available.

Potential ITS Applications Under Consideration for Future Use:

The following technologies are being considered for potential future deployment and use within the City of Oceanside:

Changeable Message Signs are electronic traffic signs often used on roadways to give travelers information about traffic congestions, accidents, incidents, roadwork zones, or speed limits on a specific segment. In urban areas, they can also be used for parking guidance and information. As of 2010, the City had commenced design to support a limited deployment of changeable message signs. When these signs are installed, they will be managed from the City TMC to provide information and assist in traffic direction during special events, incidents, and other similar situations. Unlike their freeway counterparts, these signs are generally smaller and deployed to more readily match the scale of the city environment.

Transit Signal Priority (TSP) is an operational strategy that facilitates the movement of buses through predefined traffic-signal controlled intersections. The objectives of TSP include improved schedule adherence and improved transit travel time efficiency while minimizing impacts to normal traffic operations. Standards for TSP have been established regionally, but the City has not yet implemented these types of measures.



Arterial Speed and Conditions Detection is a method used to more rigorously monitor arterial speeds and queues similar to the specialized detection that is in place along much of the regions freeway network. Devices are placed in or alongside the roadbed to detect vehicles as they pass for counting the number of vehicles and speeds during a unit of time (typically 60 seconds). This information can be used for traffic conditions monitoring by staff at the TMC, for reporting information to traveler information systems such as 511, and for long-term monitoring of traffic speeds and trends. The City has not yet implemented these types of solutions, but regional tests are underway that may promote future deployment within the City.

511 Program is a regionwide program for providing near real-time traveler information for auto and transit users. Information can be accessed by phone (by dialing 5-1-1) or through the Internet. The goal is to provide a single source for traveler information data and conditions in the San Diego region. The information provided through 511 is subject to data made available by local, regional, and State agencies. The regional 511 Program has already been deployed and is managed by SANDAG, and information would be provided through the TMC and the various systems that the City of Oceanside deploys.



Smart Parking Systems can be deployed to provide information to travelers on available parking in constrained or high demand parking environments. For example, some California coastal cities have deployed these systems to

inform visitors of available beach parking spaces and provide directions to lots with available parking that may not be readily visible from major thoroughfares. Systems vary, but are generally deployed to detect vehicles in individual spaces or more commonly compare vehicles entering and leaving controlled parking lots. Information has typically been made available through specialize electronic signage, but many cities are now using Internet webpages or mobile device information options.

Street Lights Management includes systems to enhance energy and maintenance efficiency for City provided street lights along roads and other transportation facilities. The system can be used to dim lights in areas where no traffic or activity is present. In addition, the system can monitor and provide alerts for burned out bulbs, which allows for more focused maintenance and replacement. When combined with LED and low energy lighting options, this approach can improve safety and save energy.

Summary of ITS Device Deployment and Supporting Communications

The City of Oceanside has identified 58 intersections that will be connected to the TMC with CCTVs. Figure 9.1 (page 81) shows the City of Oceanside's traffic signal communication system. Table 9-1 shows the first 35 of the 58 intersections that will be connected to the TMC during initial operations. Table 9-2 shows the remaining 23 intersections that will be connected to the TMC.

**TABLE 9-1
PROPOSED CCTV INTERSECTION LOCATIONS TO BE INSTALLED DURING INITIAL OPERATIONS**

1. Coast Highway & Surfrider Way	19. Jefferson Street & Vista Way
2. Coast Highway & Mission Avenue (2 CCTVs)	20. Vista Way & El Camino Real
3. Coast Highway & Wisconsin Avenue	21. Vista Way & Rancho Del Oro Road
4. Coast Highway & Oceanside Boulevard	22. Vista Way & College Boulevard
5. Coast Highway & Vista Way	23. College Boulevard & Lake Boulevard
6. Mission Avenue & Horne Street	24. College Boulevard & Plaza Drive
7. Mission Avenue & San Diego Street	25. College Boulevard & Old Grove Road
8. Mission Avenue & Canyon Drive	26. College Boulevard & Mesa Drive
9. Mission Avenue & Foussat Road	27. College Boulevard & North River Road
10. Mission Avenue & El Camino Real	28. El Camino Real & Vista Oceana
11. Mission Avenue & Douglas Drive	29. El Camino Real & Douglas Drive
12. Oceanside Boulevard & State Tree Drive	30. North River Road & Douglas Drive
13. Oceanside Boulevard & Crouch Street	31. Rancho Del Oro Road & Via Rancho Road
14. Oceanside Boulevard & El Camino Real	32. Old Grove Road & Mesa Drive
15. Oceanside Boulevard & Rancho Del Oro Road	33. Vandegrift Boulevard & Parker Street
16. Oceanside Boulevard & College Boulevard	34. Lake Boulevard & Thunder Drive
17. Oceanside Boulevard & Peacock Boulevard	35. North Santa Fe Avenue & Melrose Drive
18. Oceanside Boulevard & Melrose Drive	

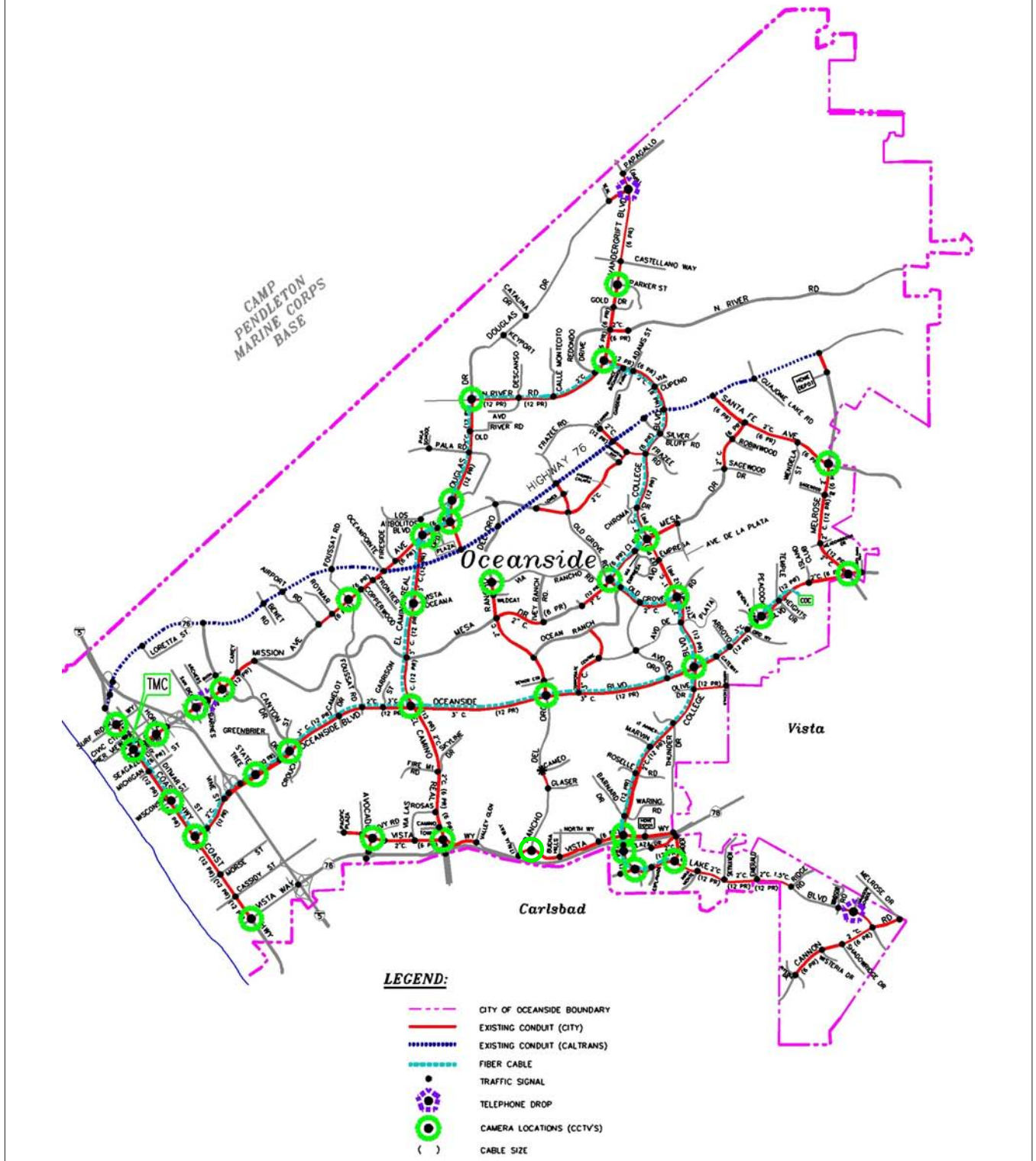
Source: City of Oceanside

**TABLE 9-2
PROPOSED CCTV INTERSECTION LOCATIONS**

1. Mission Avenue & Frazee Road	13. Lake Boulevard & Cannon Road
2. College Boulevard & Barnard Drive	14. Melrose Drive & Cannon Road
3. College Boulevard & Thunder Drive	15. Mesa Drive & Rancho Del Oro Drive
4. College Boulevard & SR 76 (outside of ROW)	16. Old Grove Road & Avenida Soledad
5. Douglas Drive & Vandegrift Boulevard	17. Old Grove Road & Avendia Del Oro
6. El Camino Real & Mesa Drive	18. Mesa Drive and Sagewood Drive
7. El Camino Real & Via Las Rosas	19. Oceanside Boulevard & Foussat Road
8. SR76 & Foussat Road (outside of ROW)	20. Lake Boulevard & Skyhaven Lane
9. SR76 & Coast Highway (outside of ROW)	21. Mission Avenue and Myers Street
10. North Santa Fe Avenue & Mesa Drive	22. Coast Highway & Morse Street
11. Oceanside Boulevard & Vine Street	23. SR76 (outside of Caltrans ROW) & Melrose Drive
12. Mission Avenue & Rancho Del Oro Drive	

Source: City of Oceanside

CITY OF OCEANSIDE TRAFFIC SIGNAL COMMUNICATION SYSTEM



Source: City of Oceanside



This section of the Circulation Element establishes a high-level ITS technology plan that creates the framework of policies for integrating the City of Oceanside's existing and future resources with ITS technology to effectively meet the future transportation needs and expectations of the City.

GOAL 1: *Encourage and support the use of Intelligent Transportation System technologies to increase the efficiency of the transportation network.*

GOAL 2: *Support the use of Intelligent Transportation System technologies as a cost-effective alternative to improve the transportation network.*

OBJECTIVE:

- i.* Improve the safety, security, and movement of goods, people, and services for all modes of transportation by using advanced technologies, coordinated management techniques, and by providing real-time traveler information.
- ii.* Improve air quality and reduce green house gas emissions through traffic signal optimization and the use of advanced signal control techniques.
- iii.* Ensure compliance with regional ITS architecture and National ITS standards where feasible to promote interoperability and information exchange with other agencies in the region.
- iv.* Work cooperatively with regional ITS and related operations efforts to enhance regional and local response to incidents and events impacting the City.
- v.* Collect data for public dissemination and/or analysis by the City traffic engineers.

POLICIES:

- 9.1** The City shall budget and allocate the operations and maintenance resources necessary to properly maintain and effectively operate the TMC through funding sources such as the City's Thoroughfare Fee or developer mitigation measure fees.
- 9.2** The City shall continue to support the development of a Traffic Management Center with an Advanced Traffic Management System (ATMS).
- 9.3** The City shall enhance the communications network, particularly fiber optic cables, for use with ITS technologies.

- 9.4 The City shall deploy functional and cost efficient ITS technology that will maximize the use of existing infrastructure.
- 9.5 The City shall improve the traffic signal equipment in order to facilitate signal coordination/synchronization and the deployment of an ATMS.
- 9.6 The City shall collaborate with NCTD to identify opportunities to provide transit signal priority along important or major transit/bus corridors.
- 9.7 The City shall ensure that all ITS technology related to transit signal priority gives first priority to emergency services signal preemption.
- 9.8 The City shall utilize available ITS technologies such as changeable electronic message signs and CCTV camera systems to improve event management, construction activity, and report real-time traffic conditions.
- 9.9 The City shall coordinate with neighboring jurisdictions and agencies to better enhance ITS technologies for transit and overall traffic operations across jurisdictional boundaries.
- 9.10 The City shall monitor traffic signals along major corridors for signal coordination and consider the need for retiming or adjustment every two years.