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4 Environmental Impact Analysis

This section discusses potential impacts to scenic vistas and visual resources in the planning area, and the potential for adverse changes in the visual character and quality to occur as a result of implementing the proposed land use changes and urban design policies. Potential impacts associated with light and glare are also addressed. During the scoping meeting held on November 30, 2015, attendees raised concerns regarding the potential for new development in certain districts and neighborhoods to conflict with the existing building character. In particular, concerns were raised about the potential for taller, higher-density development to be built in areas that historically have had only one- and two-story buildings. Additionally, several people stated that impacts related to shade and shadowing need to be addressed in the EIR. These concerns are addressed below under Impact 4.1.C.

# Existing Conditions

The planning area is almost completely urbanized. Costa Mesa sits atop a plateau approximately one mile from the Pacific Ocean. The Pacific Ocean can be seen along the City's western boundary, where the coastline creates a distinctive visual background. The eastern edge of the City affords some views of Upper Newport Bay. Views to the north and east include the San Gabriel Mountains (distant) and Santa Ana Mountains (nearby), respectively. Natural features in the City include the channelized Santa Ana River, which runs along the City's entire western border, and open space lands in Fairview Park and Talbert Regional Park. The Santa Ana River has a sandy bottom and irregular pockets of vegetation.

The urban environment consists primarily of residential neighborhoods, with several commercial districts and concentrations light industrial businesses. The northeastern portion of the planning area is bisected by the junction of three major freeways: Interstate 405 (I-405), State Route 55 (SR-55), and State Route 73 (SR-73). The intersection of these three freeways creates the Downtown/Triangle Square District, a triangular area that encompasses mostly commercial and light industrial uses, with some low-density residential. To the north of this triangular area is the Cultural Arts Center (home of the Orange County Performing Arts Center) and the South Coast Metro District which is anchored by South Coast Plaza. Industrial development is focused in the North Industrial/Business Park District, the Southwest Industrial/Business Park District, and the Airport/Business Park District.

Open space areas include the river-adjacent parks described above, City parks distributed throughout the community, and three golf courses. In the center of the City is the Fairgrounds/Orange Coast College District which contains the civic center complex, Vanguard University (a private institution), the Orange County Fairgrounds, and the Orange Coast College.

#### Scenic Vistas

Scenic vistas generally are defined as specific locations where natural landscapes form views of unique flora, geologic, or other natural features that can be viewed free from urban intrusions. Typical scenic vistas include views of mountains and hills; large, uninterrupted open spaces; and water features. Scenic vistas generally play a large role in the way a community defines itself and also affects development patterns for projects designed to take advantage of scenic viewsheds.

The Pacific Ocean, Santa Ana River, and Santa Ana Mountains form a scenic backdrop at specific locations within the planning area. Scenic vistas generally require large expanses of undeveloped land in close enough proximity so that a viewer can see the backdrop uninterrupted. Such locations include Fairview Park, Talbert Regional Park and adjacent wildlife refuge, and at the golf courses and parks and ballfields in the City.

### Scenic Resources

Scenic resources are occurrences of aesthetically pleasing natural or human-made forms. Typical examples of natural scenic resources include rock outcroppings, trees, natural land, water bodies, and prominent ridgelines. Scenic resources can also be architecturally distinctive structures or historic buildings. The Santa Ana River and its natural areas constitute a scenic resource, as do the Santa Ana Mountains and Upper Newport Bay.

# Scenic Highways

No officially designated Scenic Highways or highways that are considered eligible for Scenic Highway status are present in the planning area. Highway 1, which runs parallel to the Pacific Ocean just southwest of the planning area but generally does not afford views toward Costa Mesa, is an eligible State Scenic Highway which has not been designated (Caltrans 2015).

### Visual Character

A community's visual character can be defined by the historical development pattern and architectural precedence that have occurred over its history, coupled with the community theming and design elements that have been implemented. Most cities' visual character is divided into sub-areas, or districts, each with its own visual pattern. The City of Costa Mesa divides these sub-areas into districts. Districts are those sections of the City that have a certain identifiable character due to building architecture, neighborhood design, streetscape, land use, etc. A "district" is defined as an integral part of a larger urban area with common characteristics that make it unique from other areas of the community. Distinguishing features may include building type, use, activity, inhabitants, and/or topography.

#### **Residential Districts**

The following describes the primary residential districts within Costa Mesa.

### Eastside Residential District

This district contains a mix of single-family and multi-family homes on large lots. In recent years, many of the older, smaller homes have been replaced by larger Mediterranean-style homes and town homes. The Land Use Element discusses issues associated with this district related to narrow deep lots and lot consolidation.

### Westside Residential District

This area is characterized by a mix of residential densities and architectural types that include single-family homes, townhomes, and apartments. The styles are varied, dating to the 1940s and reflecting all eras since. More recent construction consists of taller buildings in modern styles. This district also encompasses the Costa Mesa Golf Course.

### Mesa Verde Residential District

This district has a mix of residential densities. Homes closer to the Mesa Verde Golf Course are much larger and at lower residential densities compared to those closer to Harbor Boulevard and the I-405 freeway.

# College Park Residential District

The homes within this district are characterized by a mix of residential densities and architectural styles. The majority of the units are higher-density homes located along Newport Boulevard, Wilson Street, and Victoria Street. This district also includes College Park, a large single-family residential tract dating to the 1950s.

# North Costa Mesa/Mesa del Mar/Halecrest Hall of Fame Residential District

This district contains mostly single-family residential tracts with higher residential densities near arterials. This district also contains pockets of commercial uses along Baker Street.

### Bristol/Paularino Residential District

This district is bordered between I-405, SR-73, and SR-55. The homes are comprised of higher residential densities mixed with commercial uses along Bristol Street.

# South Coast/Wimbledon Village Residential District

This district contains mostly single-family residential tracts with some townhomes and apartments.

#### **Commercial Districts and Corridors**

Costa Mesa's main commercial districts and corridors include:

# South Coast Metro District

This district is the economic heart of the City, where South Coast Plaza and other regional commercial and office developments are located. The district is characterized by commercial centers, entertainment venues, hotels, and high-rise office buildings. The district includes the Plaza Tower, Center Tower, South Coast Metro Center, and the Orange County Performing Arts Center. This district encompasses the primary commercial and cultural center of the City.

### Harbor Boulevard Corridor

Harbor Boulevard begins in the City at Newport Beach and travels north through and beyond Costa Mesa. The corridor represents the primary commercial corridor of the City, with a mix of vehicle-oriented uses, auto dealerships, neighborhood commercial centers, entertainment venues, and a few residential uses. Both the proposed Harbor Mixed-Use Overlay and Harbor Residential Incentive Overlay would apply within this district.

### **Downtown/Triangle Square**

Downtown/Triangle Square is located at one of the busiest intersections in Costa Mesa, where the SR-55 freeway (transitions to Newport Boulevard) and Harbor Boulevard intersect. The area within and surrounding Triangle Square is one of the busiest activity hubs in the community. Across the street from Triangle Square is the Costa Mesa Courtyards, a busy commercial center. The SoBECA Overlay and SoBECA Urban Plan apply to all properties is in this district.

### East 17th Street Corridor

This corridor is characterized by multi-tenant retail centers, restaurants, and offices. A wide variety of goods and services are available along this retail corridor.

# Newport Boulevard Corridor

Newport Boulevard parallels the SR-55 freeway from the I-405 Freeway south to where the SR-55 freeway ends at 19<sup>th</sup> Street. Newport Boulevard then continues south to 15<sup>th</sup> Street and into the City of Newport Beach. The corridor is characterized with a mix of uses that include neighborhood commercial businesses, motels, restaurants, and some residential development. The Newport Boulevard Residential Incentive Overlay is in this district.

#### Industrial/Business Park Districts

The City of Costa Mesa contains three distinct industrial districts, as described below.

# North Industrial/Business Park District

This district is characterized by large-sized industrial and office buildings, and includes the Automobile Club, Times Orange County, and Whittier Law School. This district includes two of the large vacant parcels remaining in the City—the Segerstrom Home Ranch and Sakioka Lot 2 Overlays—which are located between South Coast Drive and I-405, as well as the Los Angeles Times Overlay.

### Airport Industrial/Business Park District

This area is bordered by John Wayne Airport to the east, SR-73 to the south, the SR-55 to the west, and I-405 to the north. The area contains a concentration of industrial, office, and commercial uses in one- to two-story buildings.

## Southwest Industrial/Business Park District

This district is characterized by low-scale, older industrial plant facilities but also includes auto-related uses, manufacturing, and public storage. The district has a very distinct industrial character.

# Open Space/Recreational Districts

Major open space districts in the City include the following.

# Fairgrounds/Orange Coast College District

This area comprises the primary cultural, educational, and civic center district of the City. The Orange County Fairgrounds, Orange Coast College, Vanguard University, and Civic Center make up the majority of this district. Each use has a distinct aesthetic character. The fairgrounds, which includes exhibit buildings, parade grounds, and Pacific Amphitheater, are surrounded largely by vast parking lots. The 164-acre Orange Coast College campus has buildings of varying heights amid a well-landscaped campus and acres of surface parking lots, with athletic fields in the northeast quadrant, along Fairview Road and Adams Avenue. Vanguard University is a relatively compact campus, with midrise buildings set back from the university's Fair Drive frontage and athletic fields and lower-scale building on the campus interior. Adjacent to Vanguard is the Civic Center complex, which consists of low- and mid-rise buildings.

### Fairview Park/Talbert Nature Preserve District

This district, consisting entirely of open space uses, is bounded by the Santa Ana River to the west, Adams Avenue to the north, 19th Street to the south, and the Victoria-Placentia Quadrant Residential District to the east. The district includes the expansive Fairview Regional Park and an adjacent wildlife refuge. Additionally, the proposed Orange Coast River Park, when completed, will strengthen the linkage between Costa Mesa and the coast.

# Outdoor Lighting and Night Skies

Much of the planning area is urbanized, with numerous outdoor lighting sources such as street lights, building and parking lot lighting, sports field lighting, illuminated signs, etc. Views of night skies and stars are impacted throughout the planning area (and the region generally) due to the abundance of night lighting.

# Regulatory Setting

# Title 13 - City of Costa Mesa Planning, Zoning and Development Code

The City's Zoning Code addresses development standards (Title 13, Chapter 5 of the Municipal Code) to be used for projects all zoning districts. Title 13 sets forth such things as lot coverage, setbacks, building size and heights, yard areas, landscaping, signage, etc. Some standards are specific to the type use permitted, i.e. residential, commercial, industrial, institutional, planned developments, etc., while other apply to all zoning districts, i.e. landscaping. Under Chapter III, Section 13-29, the Code specifies that a planning application must go through design review with the City's Planning Division and receive final review approval by the Planning Commission. Design review applies to any construction that results in three or more dwelling units on a development lot in any residential zone (excluding a planned development). Most Other land uses are subject development review by the Planning Division (Title 13, Chapter III, Section 13-29).

# Thresholds of Significance

The proposed General Plan Amendments would result in significant aesthetic impacts if they would:

- A. Have a substantial adverse effect on a scenic vista.
- B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- C. Substantially degrade the existing visual character or quality of the site and its surroundings.
- D. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

# **Environmental Impacts**

IMPACT 4.1.A 4.1.B Impacts to scenic vistas and resources would be less than significant with implementation of draft General Plan policies.

As described above, scenic vistas within the City are limited to large areas of undeveloped land that offer views of scenic resources such as Upper Newport Bay, the Santa Ana River, and the Santa Ana Mountains. The proposed project will not alter scenic vistas located in existing parks or open space areas as none are subject to land use change. New development built on the Segerstrom Home Ranch and Sakioka Lot 2 sites could impact existing views of the Santa Ana Mountains since current land use policy allows buildings of heights greater than two stories; the proposed General Plan land use policies will continue this condition. However, with the implementation of the following Community Design Policies CD-5.A through CD-5.F below, potential impacts on scenic vistas and resources would be less than significant:

**GOAL CD-5: EDGES.** Utilize Costa Mesa's edges as opportunities for enhancing the image of the City along its boundaries.

Objective CD-5.1 Develop and implement programs that preserve and enhance City edges.

Policy CD-5.A	Preserve and optimize natural views and open spaces in Costa Mesa.
Policy CD-5.B	Control the visual impacts of new development on natural views of the coast and the wetlands.
Policy CD-5.C	Develop open space corridors and trails along the edges of Costa Mesa where feasible.
Policy CD-5.D	Continue to preserve natural open space, including restoration of the natural areas of Talbert Regional Park.
Policy CD-5.E	Continue protection of Fairview Park as an open space and recreation area.
Policy CD-5.F	Work with Caltrans to improve the design quality of freeway edges.

There are no designated or eligible State scenic highways within the planning area. Therefore, impact on scenic highways would be less than significant.



Impacts to the visual character and quality of the planning area would be less than significant with implementation of draft General Plan policies.

Impacts to the visual character and quality of the planning area could occur if proposed policies are not sufficient to preserve and enhance those areas that contribute to a sense of place and provide distinctive community identity. The planning area is almost fully developed, and future development supported by the General Plan would generally be constructed within the context of an urbanized environment.

The proposed policy framework addressed in the updated general plan elements will guide new private and public development in the existing developed Overlay areas to be consistent with existing natural and urban characters, while still providing a variety and visual interest. As discussed in Chapter 4.5 of this EIR, regulations are in place to protect the integrity of historical buildings and structures, and the proposed project would not result in any significant impacts to such visual resources. New development could create new areas of shade or shadowing on adjacent on existing buildings or open areas. Effects of shade and shadowing on existing land uses would be assessed as part of community design review when new projects come forward for development permits. Refer to relevant community design community goals and objectives below.

GOAL CD-8: QUALITY COMMERCIAL DEVELOPMENT. Achieve a high level of quality design for commercial development.

Objective CD-8.1 Encourage high level of architectural and site design quality.

Policy CD-8.A.	Require that new and remodeled commercial structures and properties be designed to
-	reflect architectural diversity, yet be compatible with the scale and character of the
	district.

Policy CD-8.B. Use distinctive commercial architectural styles to reinforce a positive sense of place. Commercial architectural design elements and materials must be of high quality and style as well as suitable for long-term maintenance. Consistent architectural design should be considered in choosing materials, finishes, decorative details, color, accent features.

Policy CD-8.C. Encourage the use of entrance patios, courtyards, plazas, arcades, fountains, porches, tower elements, covered walks, and other features in commercial areas. Promote pedestrian amenities.

Policy CD-8.D. Ensure that common areas, walkways, driveways, and parking spaces be landscaped consistent with landscaping standards contained in the zoning code. Utilize landscaping to provide project amenities for new and remodeled commercial uses, and to screen parking and equipment areas. Landscaped areas generally should incorporate planting utilizing a three-tiered system: 1) grasses and ground covers, 2) shrubs and vines, and 3) trees.

Policy CD-8.E. Ensure that site access, parking, and circulation for commercial uses is designed in a logical, safe manner. Parking should not dominate the site in areas adjacent to street; and be well landscaped with a clear hierarchy of circulation. Wherever possible, parking lots should be divided into a series of connected smaller lots utilizing walkways and raised landscape strips. Parking lots should also include landscaping that accents the importance of driveways from the street, frames the major circulation aisles, and highlights pedestrian pathways.

Policy CD-8.F. Require that areas for outside equipment, trash receptacles, storage, and loading areas be located in the least conspicuous part of the site. Utility and mechanical equipment (e.g. electric and gas meters, electrical panels, and junction boxes) should be concealed from view from public streets, neighboring properties, and nearby higher buildings. Trash enclosures should be architecturally compatible with the project. Landscaping should be incorporated into the design of trash enclosures to deter graffiti.

Policy CD-8.G. Encourage decorative paving treatments to be incorporated throughout commercial developments, including driveway entries, pedestrian walkways, plazas, and other areas. The design, materials, and colors of decorative paving treatments (e.g., stamped concrete, stone, brick or granite pavers, exposed aggregate, or colored concrete) should complement the architectural style of the primary buildings and make a positive contribution to the aesthetic and function of the site.

Policy CD-8.H. Require that exterior lighting on commercial properties be consistent with the architectural style of the commercial building. On each commercial site, all lighting fixtures should be from the same family of fixtures with respect to design, materials, color, fixture, and color of light. Lighting sources should be shielded, diffused or indirect to avoid spillover on adjacent properties, nighttime sky light pollution, and glare to pedestrians and motorists. To minimize the total number of freestanding light standards, wall-mounted and pathway lights should be utilized to the greatest extent possible.

Objective CD-8.2 Preserve the scale character of established neighborhoods near commercial uses.

Policy CD-8.I. Ensure that new commercial development utilize site planning and design features that optimize compatibility with adjacent residential neighborhoods. The following guidance should be considered:

 When adjacent residential and nonresidential uses can mutually benefit from connection, appropriate linkages (e.g., walkways, common landscape areas, and building orientation) are encouraged. Successful interaction between commercial and residential uses may be achieved through adequate setbacks, landscape buffers, screening, decorative masonry walls, berms, building orientation, and limitations of commercial activities.

- Loading areas, access and circulation driveways, trash and storage areas, and rooftop equipment should be located as far as possible from adjacent residences.
- Building orientation and landscaping of commercial buildings should minimize direct lines of sight into adjacent residential private open space. Require that new and remodeled commercial structures and properties be designed to reflect architectural diversity, yet be compatible with the scale and character of the district.

**GOAL CD-9: MIXED-USE.** Promote development of mixed-use projects that seamlessly integrate multiple uses both functionally and aesthetically.

<u>Objective CD-9.1</u> Design mixed-use development projects to achieve a high quality character.

Policy CD-9.A. Require that mixed-use development projects be designed to mitigate potential conflicts between uses. Consider noise, lighting, and security.

<u>Objective CD-9.2</u> Provide for the development of projects that integrate housing with commercial uses and other compatible uses.

All of the areas for which land use changes are proposed are in districts that are either largely commercial and/or industrial development in nature (Harbor Boulevard, Newport Boulevard, SoBECA) or support agricultural uses (Segerstrom Home Ranch, Sakioka Lot 2). The Fairview area supports an institutional land use.

The Harbor Boulevard and Newport Residential Incentive Overlay applies to parcels displaying a mix of architectural styles with no defined character. Most buildings in the vicinity of parcels to which the Overlay will apply are one story and comprise strip malls, restaurants, motels, automobile dealerships, auto repair shops, car washes, etc. The Overlay would allow for new high-density residential uses up to 40 units per acre in areas where only commercial uses were previously allowed. Buildings can be up to four stories in height. Privacy concerns of established neighborhoods would be addressed through General Plan goals, objectives and policies under CD-9 (listed above). New residential development will be subject to design review under Title 13, Chapter III, Section 13-29 of the Planning, Zoning and Development Code to provide for appropriate relationships to surrounding residential development. The Overlay will not degrade the existing visual character of this district.

The Harbor Boulevard Mixed Use Overlay mostly comprises budget motels, strip malls, restaurants, and other similar small-scale commercial development. The architectural styles vary, with no real visual connection among the various businesses. The new Overlay is intended to promote lot consolidation for commercial properties and provide a synergy between the Harbor Boulevard commercial corridor and 19th Street, focusing on the Triangle as the downtown. The proposed overlay will allow for residential uses at 20 units per acre and mixed-use projects. These new developments are intended to revitalize the area and provide newer projects that enhance the area. With design review processes implemented, the overlay is anticipated to result in an improved aesthetic condition. The new land use designation would not degrade the visual character of this district.

Two areas for which land use changes are proposed are currently in agricultural production: Segerstrom Home Ranch and Sakiota Site 2, both of which are located in the North Industrial/Business Park District. With the proposed General Plan Amendments, the Segerstrom Home Ranch property would support up to 1.2 million square feet of development at a maximum FAR of 0.64. Sakioka Site 2, located at Sunflower Avenue and Main Street, would support residential development at up to 80 units per acre but not to exceed the existing total unit allocation of 660 units. This new development could impact the visual character and quality of the planning area if not property designed. With the implementation of Community Design Goal CD-8 and Objectives CD-8.1 and CD-8.2 and policies CD-8.A through CD-8.1 above and requirements for design review set forth in the *North Costa Mesa Specific Plan*, potential impacts on visual character and quality related to the development of these two large vacant parcels would be less than significant.

The Los Angeles Times Site Overlay is in the North Industrial/Business Park District. The majority of the North Industrial/Business Park District currently supports warehouses and parking lots, but also includes a ball field and other recreational facilities. With the implementation of Community Design Goals and Objectives under CD-10 below, future development of commercial and office uses in this Overlay would reflect the character of surrounding uses. No adverse change in the visual character would occur.

**GOAL CD-10: INDUSTRIAL AND BUSINESS PARKS.** Promote quality design approaches for the redevelopment of existing industrial buildings, encourage the design to incorporate or provide flexibility for the needs of emerging types of industrial uses, and strive to match design with overall character of node, corridor, or district if applicable.

Objective CD-10.1 Require that industrial and business park projects meet high quality design standards.

Objective CD-10.2 Control the development of industrial projects to ensure they are a positive addition to the City's community setting, and that they do not result in adverse impacts with adjacent uses.

The SoBECA Overlay includes a mix of retail/service commercial businesses, light industrial uses, creative studios, retail campuses, entertainment and restaurant uses, and limited residential development. The Urban Plan for this Overlay would be updated to allow additional residential opportunities, with densities up to 40 units per acre, with a residential capacity of 450 units. Permitted development approaches would be mixed-use development that combines residential and commercial uses, as well as stand-alone residential uses at up to four stories/60 feet. This designation would continue to emphasize commercial uses as the predominant use in the district, with the overall aim to expand the established innovative, eclectic, and unique uses that demonstrate the importance of homegrown and incubator-type businesses to the local economy. Residential and mixed-used development is anticipated to add to this eclectic nature. Development project would continue to be subject to the development standards and landscaping requirements established in the *SoBECA Urban Plan (CM 2006)*, which will continue to shape the district as envisioned. Application of the overlay would not degrade the visual character of this district.

The State-operated Fairview Developmental Center opened in 1959 and currently serves approximately 270 people with developmental and intellectual disabilities. It has an institutional character, with one-story buildings dating largely to the 1950s, and is surrounded on three sides by the Costa Mesa Golf Course. The land use change for this area provides the opportunity for the City to encourage a comprehensive reuse plan to consist of residences (up to 500 units at residential densities ranging from 15 to 25 units per acres), parks and open spaces, public facilities, and institutional uses. Proposed General Plan land use policies would require creation of a specific plan for the comprehensive repurposing of this site with any non-State associated development. Through the specific plan process, the City will be able identify the development approaches that provide for compatibility with surrounding land uses. With application of standard City development and design review practices, any potential visual character impacts can be avoided. Thus, the new land use designation would not degrade the visual character of this district.

IMPACT 4.1.D Impacts due to light and glare would be less than significant with implementation of proposed General Plan Amendment policies.

Development directed by the goals and policies of the General Plan Amendments could produce new sources of light and/or glare that may potentially cause significant impacts to daytime and/or nighttime views. Excessive or inappropriately directed lighting can adversely impact nighttime views by reducing the ability to see the night sky and stars. Glare can be caused from unshielded or misdirected lighting sources. For example, a floodlight attached to the side of a single-family residence could be oriented to shine into a neighbor's house. Reflective surfaces (e.g., polished metal) can also cause glare. Impacts associated with glare range from simple nuisance to potentially dangerous situations (e.g. if glare is directed into the eyes of motorists).

New commercial development could introduce inappropriate lighting or use building materials that could cause inappropriate glare in the planning area. Community Design Policy CD-8.1.H above, and the requirements of Section 13-49 (Development standards for establishments within two hundred feet of residentially zoned property) of the Municipal Code which implements the policy, require that outdoor lights be shielded to avoid spillover onto adjacent properties and specifically, to be directed away from residential area. With implementation the above policy and existing requirements of the Municipal Code, potential impacts relating to light and glare would be less than significant.

# Mitigation Measures

No mitigation measures are required.

# References

California Department of Transportation (Caltrans), 2015. California Scenic Highway Mapping System, Orange County, accessed on 11/12/2015, http://www.dot.ca.gov/hq/LandArch/16\_livability/scenic\_highways/index.htm Google Earth Accessed on December 3, 2015.

California Department of Developmental Services. 2015. Fairview Developmental Center, website accessed on December 3, 2015 at <a href="http://www.dds.ca.gov/fairview/">http://www.dds.ca.gov/fairview/</a>.

City of Costa Mesa, 2006. *SoBECA Urban Plan,* prepared by the Development Services Department, City of Costa Mesa, adopted April 4, 2006.

# Agricultural and Forestry Resources 4.2

This section evaluates the potential effects on agricultural and forestry resources associated with long-term implementation of the amended General Plan Elements. This section is primarily based on the California Department of Conservation Farmland Mapping and Monitoring Program, 2008 and the General Plan and Zoning Ordinance. No comments related to agricultural or forestry resources were submitted during circulation of the Notice of Preparation.

# **Existing Conditions**

The map of Important Farmland in California (2010) prepared by the Department of Conservation does not identify any location within the City as being Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (DOC 2008). No Williamson Act contracts are active within the City limits (DOC 2007).

Two large parcels in the planning area are still used for commercial agriculture production: the Segerstrom Home Ranch property and the Sakiota Lot 2 property, both located north of I-405. The Segerstrom Home Ranch agricultural fields comprise approximately 35 acres of the 44-acre site (see Figure 4.2-1, Segerstrom Home Ranch). The Sakioka Lot 2 property supports agricultural fields on roughly 30 acres of the 33-acre site (see Figure 4.2-2, Sakioka Lot 2 Property). Although the Segerstrom Home Ranch and Sakioka Lot 2 properties still support commercial agricultural use, neither is zoned for agriculture nor are they currently designated for agricultural use in the General Plan. Both are zoned and designated for commercial use by the *North Costa Mesa Specific Plan*, which does not specifically exclude agricultural production; the current uses are considered historical remnant agricultural operations ultimately to be replaced by urbanization.

Public Resources Code Section 12220(g) identifies forest land as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." The City does not contain any land currently being managed or used for forest resources as identified in Public Resources Code Section 12220(g). The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP) land cover maps for the City identify it as urban type, indicating that it is not capable of growing industrial wood tree species (CDFFP 2015).

# Planning and Regulatory Framework

### Farmland Mapping and Monitoring Program (FMMP)

The California Department of Conservation's (CDC) Farmland Mapping and Monitoring Program (FMMP) rates agricultural land soil quality and irrigation status. The first three categories in descending order of potential are Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. In addition, under the FMMP, each county may define and identify lands important to the local agricultural economy, or Farmland of Local Importance. In general, Farmland of Local Importance is either currently producing, or has the capability to produce, but may not meet the criteria of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland (CDC 2015).

### California Land Conservation act (Williamson Act)

The Williamson Act (CGC §51200 et seq.) allows county governments to enter into contracts with private landowners who agree to restrict parcels of land to agricultural uses or uses compatible with agriculture for at least ten years. In return, landowners receive property tax assessments that are much lower than normal because they are based upon income derived from farming and open space uses as opposed to full market value of the property.



Figure 4.2-1: Google Earth (2015) view of Segerstrom Home Ranch Property showing agricultural fields

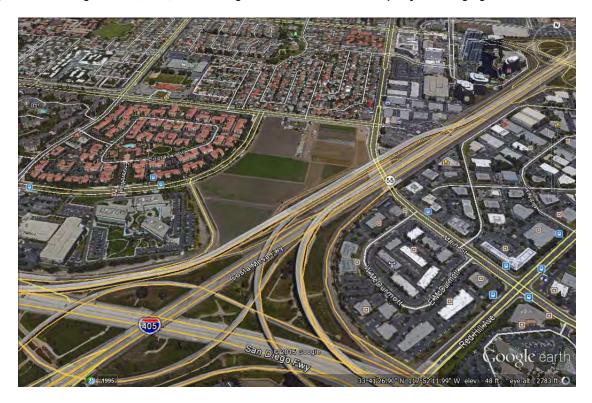


Figure 4.2-2 Google Earth (2015) view of Sakioka Lot 2 Property showing agricultural fields

California Government Code section 51250 sets forth that a breach of contract has occurred if: 1) a commercial, industrial, or residential building is constructed that is not allowed by Williamson Act, local uniform rules or ordinances consistent with the provisions of the Williamson Act, and that is not related to an agricultural use or compatible use, and 2) the total area of all of the building or buildings causing the breach exceeds 2,500 square feet. State-owned buildings, however, are exempt from these specific breach of contract provisions (CGC §51250(s)(1)(C)).

### Costa Mesa General Plan

Due to the lack of lands zoned or designated for agriculture or timber production, the Costa Mesa General Plan does not address agricultural and forestry resources.

# Thresholds of Significance

Implementation of the General Plan Amendments would have significant impacts if:

- A. Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, are converted to non-agricultural use.
- B. New land use designations would conflict with existing zoning for agricultural use, or a Williamson Act contract.
- C. New land use designations would conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104 (g)).
- D. New land use designations would result in loss of forest land or conversion of forest land to non-forest use.
- E. Changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

# Environmental Impacts



Implementation of the General Plan Amendments would not impact prime farmland, lands under Williamson Act contracts, forest land or timberland.

The City of Costa Mesa is an almost fully developed, suburbanized area that does not contain any areas zoned or designated solely for commercial agriculture or forest resources. As described above, no areas of the City support Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, there will be no conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance to a non-agricultural use as a result of build out of the General Plan. No Williamson Act contracts are in effect within the planning area.

As mentioned above, the City of Costa Mesa is a fully developed, suburban area that does not contain any forest land. Thus, there would be no loss of forest land or conversion of forest land to non-forest use as a result of build out of the General Plan. No impact would occur.



Changes to the existing environment would not result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

The only large parcels in the planning area still in agricultural production are the Segerstrom Home Ranch property and the Sakioka Lot 2 property. The land use designation for both properties is Urban Center Commercial; the amended Land Use Element would not change this designation. Both properties are surrounded by urban land uses, as indicated in Figures 4.2-1 and 4.2.-2. The actual loss of existing agricultural uses on the two properties would be at the discretion of the private property owners, and not a result of land use changes in the area, nor from a change in the land use designation of the property. Thus, the impact would be less than significant.

The City does not contain any forest or timber land within its boundaries. Therefore, build-out of the General Plan would not encroach onto forest or timber land nor would it encourage the conversion of existing forest or timber land to a nonforest use.

# Mitigation Measures

No mitigation is required.

# References

California Department of Conservation. Farmland Mapping and Monitoring Program, 2008. The City of Costa Mesa is indicated as "Urban and Built-Up Land" in the 2010 map of Orange County. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/ora10.pdf [Accessed April 2015].

California Department of Conservation. Williamson Act Program, 2007. <a href="mailto:ttp://ftp.consrv.ca.gov/pub/dlrp/wa/Orange\_WA\_03\_04.pdf">ttp://ftp.consrv.ca.gov/pub/dlrp/wa/Orange\_WA\_03\_04.pdf</a> [Accessed April 2015].

California Department of Forestry and Fire Protection Fire and Resources Assessment Program (FRAP). California Land Cover Map: Multi-Source Data Compiled in 2006. http://frap.cdf.ca.gov/data/frapqismaps/pdfs/fvegwhr13b\_map.pdf [Accessed April 2015].

Google Earth, 2015. View of Segerstrom Home Ranch and Sakioka Lot 2 property in Costa Mesa. [Access December 2015].



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This section analyzes potential air quality impacts that could result from implementation of the proposed General Plan Amendments. Comments regarding air quality impacts were submitted in response to the City's Notice of Preparation of the Draft EIR, from the South Coast Air Quality Management District (SCAQMD) during the NOP period. These comments are included in Appendix B and addressed in this section. Comments regarding air quality impacts were not expressed at the scoping meeting from held on November 30, 2015.

# **Existing Conditions**

The City of Costa Mesa and Orange County are defined by a semi-arid Mediterranean climate characterized by mild winters and summers. Annual rainfall averages 11.3 inches, with the rainy season occurring during the winter (WRCC) The coolest month of the year is January, with an average monthly low of 46.9° Fahrenheit (F). The warmest month is August, with an average monthly high of 63.2° F. The annual average maximum temperature is 67.8° F, and the annual average minimum temperature is 54.6° F. Costa Mesa is located at an elevation of approximately 98 feet above mean sea level (AMSL).

# **Regional Air Quality**

The City is located within the South Coast Air Basin (Basin) (SCAQMD). The Basin includes Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside counties. The Basin is bounded by the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east; these topographic features trap ambient air and pollutants within the Los Angeles and Inland Empire valleys below. The Basin is managed by the South Coast Air Quality Management District (SCAQMD). Pursuant to the California Clean Air Act (CCAA), SCAQMD is responsible for bringing air quality within the Basin into conformity with federal and State air quality standards by reducing existing emission levels and ensuring that future emission levels meet applicable air quality standards. SCAQMD works with federal, State, and local agencies to reduce pollutant emissions from stationary, mobile, and indirect pollutant sources through the development of rules and regulations.

Both California and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants (known as *criteria pollutants*). These pollutants are ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), inhalable particulate matter with a diameter of 10 microns or less (PM<sub>10</sub>), fine particulate matter with a diameter of 2.5 microns or less (PM<sub>2.5</sub>), and lead (Pb). The State has also established AAQS for the additional pollutants of visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The AAQS are designed to protect the health and welfare of the populace within a reasonable margin of safety. Where State and federal standards differ, State AAQS are more stringent than federal AAQS. Federal and State standards are shown in Table 4.3-1 (Ambient Air Quality Standards). Descriptions of each criteria pollutant are provided below.

#### Ozone

Ozone is a pungent, colorless, and highly reactive gas that forms from the atmospheric reaction of organic gases with nitrogen oxides in the presence of sunlight. Ozone is most commonly associated with smog. Ozone precursors such as reactive organic gases (ROG) and oxides of nitrogen ( $NO_X$ ) are released from mobile and stationary sources. Ozone is a respiratory irritant and can cause cardiovascular diseases, eye irritation, and impaired cardiopulmonary function. Ozone also causes damage to building materials and plant leafs.

### Carbon Monoxide

Carbon monoxide is primarily emitted from vehicles due to the incomplete combustion of fuels. Carbon monoxide has wide-ranging impacts on human health because it combines with hemoglobin in the body and reduces the amount of oxygen transported in the bloodstream. Carbon monoxide can result in reduced tolerance for exercise, impairment of mental function, impairment of fetal development, headaches, nausea, and death at high levels of exposure.

# Nitrogen Dioxide

Nitrogen dioxide and other oxides of nitrogen  $(NO_X)$  contribute to the formation of smog and results in the brownish haze associated with it. They are primarily emitted from motor vehicle exhaust but can be omitted from other high-temperature stationary sources. Nitrogen oxides can aggravate respiratory illnesses, reduce visibility, impair plant growth, and form acid rain.

### Particulate Matter

Particulate matter is a complex mixture of small-suspended particles and liquid droplets in the air. Particulate matter between ten microns and 2.5 microns is known as  $PM_{10}$ , also known as coarse or inhalable particulate matter.  $PM_{10}$  is emitted from diverse sources including road dust, diesel soot, combustion products, abrasion of tires and brakes, construction operations, and windstorms.  $PM_{10}$  can also be formed secondarily in the atmosphere when  $NO_2$  and  $SO_2$  react with ammonia. Particulate matter less than 2.5 microns in size are called  $PM_{2.5}$  or fine particulate matter.  $PM_{2.5}$  is primarily emitted from point sources such as power plants, industrial facilities, automobiles, wood-burning fireplaces, and construction sites. Particulate matter is deposited in the lungs and cause permanent lung damage, potentially resulting in lung disease and respiratory symptoms like asthma and bronchitis. Particulate matter has also been linked to cardiovascular problems such as arrhythmia and heart attacks. Particulate matter can also interfere with the body's ability to clear the respiratory tract and can act as a carrier of absorbed toxic substances. Particulate matter causes welfare issues because it scatters light and reduces visibility, causes environmental damage such as increasing the acidity of lakes and streams, and can stain and damage stone, such as that applied in statues and monuments.

# Sulfur Dioxide

Sulfur dioxide and other oxides of sulfur ( $SO_X$ ) are reactive gasses emitted from the burning of fossil fuels, primarily from power plants and other industrial facilities (USEPA). Other less impacting sources include metal extraction activities, locomotives, large ships, and off-road equipment. Human health impacts associated with  $SO_X$  emissions include bronchoconstriction and increased asthma symptoms.

#### Lead

Lead is primarily emitted from metal processing facilities (i.e. secondary lead smelters) and other sources such as manufacturers of batteries, paints, ink, ceramics, and ammunition. Historically, automobiles were the primary sources before lead was phased out of gasoline. The health effects of exposure to lead include gastrointestinal disturbances, anemia, kidney diseases, and potential neuromuscular and neurologic dysfunction. Lead is also classified as a probable human carcinogen.

Table 4.3-1
Ambient Air Quality Standards

Dollutant	Averaging Time	California	Standards <sup>1</sup>	Federal Standards <sup>2</sup>			
Pollutant Averaging Tim		Concentration <sup>3</sup> Method <sup>4</sup>		Primary <sup>3.5</sup> Secontary <sup>3.6</sup>		Method <sup>7</sup>	
Ozone (O <sub>3</sub> )	1 Hour	0.09 ppm (180 μg/m³)	Ultraviolet	•	Same as Primary	Ultraviolet	
Ozone (O3)	8 Hour 0.07 ppm (137 µg/m³)	Photometry	0.075 ppm (147 µg/m³)	Standard	Photometry		
Respirable Particulate	24 Hour	50 μg/m³	Gravimetric or Beta	150 µg/m³	Same as Primary	Inertial Separation and Gravimetric	
Matter (PM10)	Annual Arithmetic Mean	20 μg/m³	Attenuation	-	Standard	Analysis	
Fine	24 Hour	No Separate	State Standard	35 µg/m³	Same as Primary	Inertial Separation	

Table 4.3-1 Ambient Air Quality Standards

Ambient Air Quality Standards									
Pollutant	Averaging Time		Standards <sup>1</sup>	Federal Standards <sup>2</sup>					
	J J J	Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3.5</sup>	Secontary <sup>3.6</sup>	Method <sup>7</sup>			
Particulate Matter (PM2.5)	Annual Arithmetic Mean	12 μg/m³	Gravimetric or Beta Attenuation	15 μg/m³	Standard	and Gravimetric Analysis			
Carbon	8 Hour	9 ppm (10 mg/m³)	Non-Dispersive	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry			
Monoxide (CO)	1 Hour	20 ppm (23 mg/ m³)	Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	None	(NDIR)			
(00)	8 Hour (Lake Tahoe)	6 ppm (7 mg/ m³)	(NDIIV)	-	-	-			
Nitrogen	Annual Arithmetic Mean	0.03 ppm (57 μg/m³)	Gas Phase	53 ppb (100 µg/m³)	Same as Primary Standard	Gas Phase			
Dioxide (NO <sub>2</sub> )	1 Hour	0.18 ppm (339 µg/m³)	Chemiluminescence	100 ppb (see footnote 8)	None	Chemiluminescence			
	24 Hour	0.04 ppm (105 μg/m³)		-	-	Ultraviolet Fluorescence;			
Sulfur Dioxide (SO <sub>2</sub> )	3 Hour	-	Ultraviolet Fluorescence	-	0.5 ppm (1,300 µg/m³)	Spectrophotometry (Pararosaniline Method)			
	1 Hour	0.25 ppm (655 μg/m³)		75 ppb (196 µg/m³)	-	-			
	30 Day Average	1.5 µg/m³		-	-	-			
Lead <sup>9</sup>	Calendar Quarter	-	Atomic Absorption	1.5 µg/m³	Same as Primary	High Volume			
(Pb)	Rolling 3-Month Average <sup>10</sup>	-		0.15 µg/m³	Standard	Sampler and Atomic Absorption			
Visibility Reducing Particles	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No					
Sulfates	24 Hour	25 µg/m³	Ion Chromatography		Federal				
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m³)	Ultraviolet Fluorescence		Standards				
Vinyl Chloride <sup>9</sup>	24 Hour	0.01 ppm (26 μg/m³)	Gas Chromatography	Sidiludius					

Source: ARB, May 2015

#### PPM, parts per million

µg/m3, micrograms per cubic meter

- 1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- 2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
- 3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- 4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used
- 5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- 6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- 7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

# Table 4.3-1 Ambient Air Quality Standards

		2 112 1 2				
Dallutant	A	California S	tandards <sup>1</sup>		Federal Standards <sup>2</sup>	
Pollutant	Averaging Time	Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3.5</sup>	Secontary <sup>3.6</sup>	Method <sup>7</sup>

- **8.** To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that EPA standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
- 9. On June 2, 2010, the US EPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM has adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO2 standard of 0.14 ppm and the annual primary SO2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO2 standard was not revised at that time; however, the secondary standard is undergoing separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
- 10. The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- 11. National lead standard, rolling 3-month average: final rule signed October 15, 2008.
- 12. Extinction coefficient of 0.23 per kilometer visibility of ten miles or more (0.07 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent.

#### Non-Attainment Status

Air pollution levels are measured at monitoring stations located throughout the Basin. Areas that are in nonattainment with respect to criteria pollutants are required to prepare plans and implement measures that will bring the region into attainment. Table 4.3-2 (South Coast Air Basin Attainment Status) summarizes the attainment status in the Basin for the criteria pollutants. The Basin is currently in nonattainment status for ozone  $(O_3)$  and fine and inhalable particulate matter  $(PM^{2.5}$  and  $PM^{10})$ .

Pollution problems in the Basin are caused by emissions within the area and the specific meteorology that promotes pollutant concentrations. Emissions sources vary widely from smaller sources such as individual residential water heaters and short-term grading activities to extensive operational sources including long-term operation of electrical power plants and other intense industrial use. Pollutants in the Basin are blown inward from coastal areas by sea breezes from the Pacific Ocean and are prevented from horizontally dispersing due to the surrounding mountains. This is further complicated by atmospheric temperature inversions that create inversion layers. The inversion layer in Southern California refers to the warm layer of air that lies over the cooler air from the Pacific Ocean. This is strongest in the summer and prevents ozone and other pollutants from dispersing upward. A ground-level surface inversion commonly occurs during winter nights and traps carbon monoxide emitted during the morning rush hour.

Table 4.3-2 South Coast Air Basin Attainment Status

Pollutant	Federal	State						
O <sub>3</sub> (1-hr)	N/A	Nonattainment						
O <sub>3</sub> (8-hr)	Nonattainment	Nonattainment						
PM <sub>10</sub>	Nonattainment	Nonattainment						
PM <sub>2.5</sub>	Nonattainment	Nonattainment						
CO	Attainment	Attainment						
NO <sub>2</sub>	Attainment	Attainment						
SO <sub>2</sub>	Attainment	Attainment						
Pb	Attainment	Nonattainment						
Sources: CARB 2012, USEPA 2012								

# **Local Air Quality**

The City of Costa Mesa is located in the North Coastal Orange County air monitoring and source receptor area (SRA 18). Air quality in SRA 18 is monitored at the New Song Worship Center (1850 Mesa Verde Drive East) in the City of Costa Mesa. Air monitoring results for this area over the last three years of available data is summarized in Table 4.3-3 (2012-2014 Local Air Quality) (SCAQMD). Note that this station does not monitor particulate matter, lead, or sulfate. Table 4.3-4 (2012-2014 Air Quality Standards Exceedance) summarizes the number of days for each monitoring year that air quality standards were exceeded. Based on the 2012-2014 air quality monitoring data, the North Coastal Orange County area experiences ozone pollution and has exceeded the State 8-hr maximum concentration a minimum of six days in 2014. This is not necessarily due to local production of ozone, but due to how ozone forms and travels over the Basin. Ozone precursors are emitted primarily in the urban centers of the Basin such as Los Angeles and Santa Ana. Ozone does not form immediately but rather forms over the day. This combined with prevailing winds blowing ozone precursors inland cause the highest concentrations of ozone in the Basin to occur in the San Bernardino valley and mountain regions.

# Sensitive Receptors

Some populations are more susceptible to the effects of air pollution than the population at large; these populations are defined as sensitive receptors. Sensitive receptors include children, the elderly, the sick, and people who spend hours outdoors in vigorous exercise. Land uses associated with sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Pollutants of particular concern when relating to sensitive receptors include carbon monoxide, toxic air contaminants, and odors. The City currently has numerous sensitive land uses, in particular residences, schools, health care facilities, and playgrounds. These sensitive land uses will continue to exist and new sensitive land uses will be established pursuant to General Plan policies.

# **Toxic Emission Sources**

According to the EPA, 310 identified toxic air emitters operate within the planning area. Warehouse and other similar industrial uses exist within the southwestern, northern, and southeastern portions of the City, as well as along Harbor Boulevard and Baker Street. These land uses may generate high volumes of truck traffic resulting in diesel-particulate matter emissions, an identified toxic air contaminant.

### **Local Transportation**

Regional access to Costa Mesa is provided by SR-55, which traverses the eastern central portion of the planning area in a northeast-southwest direction; SR-73, which traverses the eastern central portion of the planning area in a northwest-southeast direction; and I-405, which runs in east-west along the northern boundary of the planning area. Costa Mesa's roadway network is generally based on a grid system, with major roadways located half-mile to one-mile apart providing access to most portions of the City. According to the 2013 Orange County Congestion Management Plan (CMP), of the three CMP intersections in the planning area, none currently operates at an unacceptable level of service (LOS) E or worse during morning or evening peak hours (OCTA). According to the traffic impact study prepared by Stantec Consulting Services, Inc., based on the intersection LOS performance criteria, all of the intersection locations analyzed in the City currently operates at an acceptable LOS (LOS D or better) with the exception of the intersection of Hyland Avenue and MacArthur Boulevard during the PM peak hour.

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Table 4.3-3 2012-2014 Local Air Quality

							· J						
	CO	O <sub>3</sub> (F	PPM)	NO	<sub>2</sub> (PPM)	SO <sup>2</sup> (PPM)	PM <sup>10</sup> (µ	ug/m³)	PM <sup>2.5</sup> (	μg/m³)	Pb (µ	g/m³)	SO₄ (µg/m³)
Monitoring Station	Max 8-hr	Max 1-hr	Max 8-hr	Max 1-hr	AAM	Max 24- hr	Max 24- hr	AAM	Max 24-hr	AAM	Max Month	Max Qtr	Max 24-hr
North Orange County Coastal													
2014	1.9	0.096	0.079	60.6	10.8	8.8	1						
2013	2.0	0.095	0.083	75.7	11.6	4.2	1						
2012	1.7	0.090	0.076	74.4	10.4	6.2							

Source: SCAQMD 2012-2014

-- pollutant not monitored PPM, parts per million μg/m³, micrograms per cubic meter AAM, annual arithmetic mean

Table 4.3-4 2012-2014 Air Quality Standards Exceedance

	2012 20	7117111 @44	inty otaria	ar do Exco	Juarroo			
		O <sub>3</sub> (PPM)		PM <sup>10</sup> (	μg/m³)	$PM^{2.5} (\mu g/m^3)$		
Monitoring Station	Fed*	State	State	Fed	State	Fed^		
	8-hr	1-hr	8-hr	24-hr	24-hr	24-hr		
North Orange County Co	oastal							
2014	4	1	6					
2013	1	1	2					
2012	1	2	1					
Cource CCAOMD 2012 20	Source: SCAOMD 2012 2014							

Source: SCAQMD 2012-2014

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<sup>--</sup> pollutant not monitored \* 0.075 ppm

<sup>^35</sup> µg/m<sup>3</sup>

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### **Local Emissions**

Local emissions are defined by area source emissions, energy demand emissions, and mobile source emissions. Area source emissions are the combination of many small emissions sources that include use of outdoor landscape maintenance equipment, use of consumer products such as cleaning products, and use of architectural coatings in the construction and maintenance of developments. Energy demand emissions result from use of electricity and natural gas. Mobile source emissions will result from automobile, truck, and other vehicle sources associated with build out of the General Plan Update.

### Odors

According to the CEQA *Air Quality Handbook*, land uses associated with odor complaints include agricultural operations, wastewater treatment plants, landfills, and certain industrial operations (such as manufacturing uses that produce chemicals, paper, etc.). Currently, those activities that could create odors include remnant agricultural operations adjacent to SR-55. Also, two crematoriums operate in Costa Mesa, as do numerous light and heavy industrial uses that have the potential for odor generation.

# Planning and Regulatory Framework

#### Clean Air Act

The federal Clean Air Act (CAA) defines the U.S. Environmental Protection Agency's (EPA) responsibilities for protecting and improving the United States air quality and ozone layer (USEPA). Key components of the CAA include reducing ambient concentrations of air pollutants that cause health and aesthetic problems, reducing emission of toxic air pollutants, and stopping production and use of chemicals that destroy the ozone.

Federal clean air laws require areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop State Implementation Plans (SIPs). SIPs are comprehensive documents that identify how an area will attain National Ambient Air Quality Standards (NAAQS). Deadlines for attainment were established in the 1990 amendments to the CAA based on the severity of an area's air pollution problem. Failure to meet air quality deadlines can result in sanctions against the state or the EPA taking over enforcement of the CAA in the affected area. SIPs are a compilation of new and previously submitted plans, programs, district rules, and state and federal regulations. The SCAQMD implements the required provisions of an applicable SIP through its AQMPs and updates. Currently, SCAQMD implements the 8-hr Ozone and PM<sup>2.5</sup> SIP in the 2007 AQMP and the PM<sup>10</sup> SIP in the 2003 AQMP. The PM<sup>2.5</sup> SIP is currently being revised by SCAQMD in response to partial disapproval by the EPA.

### California Clean Air Act

The California Clean Air Act (CCAA) of 1988 was enacted to develop plans and strategies for attaining California Ambient Air Quality Standards (CAAQS). The California Air Resources Board (ARB), which is part of the California Environmental Protection Agency (Cal-EPA), develops statewide air quality regulations, including industry-specific limits on criteria, toxic, and nuisance pollutants. The CCAA is more stringent than federal law in a number of ways including revised standards for PM¹0 and ozone and State for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

### **Toxic Hotspots**

State requirements specifically address air toxics issues through Assembly Bill (AB) 1807 (known as the Tanner Bill) that established the State air toxics program and the Air Toxics Hot Spots Information and Assessment Act (AB

2588). The air quality regulations developed from these bills have been modified to incorporate the federal regulations associated with the Federal Clean Air Act Amendments of 1990. The Air Toxics Hot Spots Information and Assessment Act (Hot Spots Act) was enacted in September 1987. Under this bill, stationary sources of emissions are required to report the types and quantities of certain substances that their facilities routinely release into the air.

The SCAQMD is required to prepare an annual report on the status and forecast of air toxic hotspots pursuant to Section 44363 of the California Health and Safety Code. SCAQMD monitors facilities that are not exempt from the fee and reporting requirements of AB2588.

Some facilities are covered under umbrella permits that address industry-wide categories. SCAQMD has issued general permits for the following seven activities:

- Retail gasoline dispensing
- Perchloroethylene dry cleaning
- Auto body shops
- Fiberglass molding

- Printing
- Metal plating
- Wood stripping and finishing

Emissions inventories and risk assessment guidelines have been prepared for the seven industry-wide categories. Approximately 1,400 auto body shops, 3,200 gasoline stations, and 1,400 perchloroethylene dry cleaners within the District are covered under these umbrella permits.

Depending on the severity of the facilities' TAC releases, SCAQMD requires either public notification of toxic hot spots or preparation of a risk reduction plan, as follows:

	Cancer Risk (per million)	Acute Risk	Chronic Risk
Action Risk Level Public Notification Level	>= 25 >= 10	>= 3.0 >= 1.0	>= 3.0 >= 1.0
Exempt	<1	<0.1	<0.1

# Air Quality Management Plan

Under State law, SCAQMD is required to prepare an overall plan for air quality improvement, known as the Air Quality Management Plan. The purpose of an AQMP is to bring an air basin into compliance with federal and State air quality standards and is a multi-tiered document that builds on previously adopted AQMPs (SCAQMD). The 2012 AQMP was adopted in December 2012 and demonstrated  $O_3$  and  $PM^{10}$  for the covered Basin. It also provides the maintenance plans for CO and  $NO_2$ , which the Basin has been in attainment for since 1997 and 1992, respectively.

The 2012 AQMP was adopted by the SCAQMD governing board on December 7, 2012, approved by ARB on September 27, 2007, and submitted to the EPA as part of the 2007 SIP on February 1, 2013. The AQMP identifies short- and long-term control measures designed to reduce stationary, area, and mobile source emissions, organized into four primary components:

- 1. District Stationary and Mobile Source Control Measures
- 2. Air Resources Board (ARB) State Strategy
- 3. Supplement to ARB Control Strategy
- 4. SCAG Regional Transportation Strategy and Control Measures

The 2012 AQMP further builds on the 2007 AQMP to address the federal PM $^{2.5}$  air quality standard, as well as proactively addressing the federal 8-hour ozone air quality standard to be attained by 2023. Overall, the 2012 AQMP projected a three percent reduction in NO<sub>X</sub> and 17 percent reduction in PM $^{2.5}$  emissions by 2014, and a three percent reduction in NO<sub>X</sub> and one percent reduction in VOC emissions by 2023 compared to respective 2014 and 2023 projected baselines for each pollutant. The AQMP anticipated attainment of the 24-hour PM $^{2.5}$  standard by 2014 and attainment of the 8-hour ozone standard by 2023.

Stationary source control measures in the 2012 AQMP are based on implementation of all feasible control measures through the application of available cleaner technologies, best management practices, incentive programs, as well as development and implementation of zero- and near-zero technologies and control methods. These would be applied to both point source (typically facilities permitted by SCAQMD) as well as area sources associated with smaller/non-permitted emissions. Notable PM<sup>2.5</sup> stationary control measures that will begin implementation in 2013 include further reductions from the Regional Clean Air Incentives Market (RECLAIM) NO<sub>X</sub> and SO<sub>X</sub> cap-and-trade program, further reductions from residential and open wood burning, and reductions from under-fired charbroilers. Notable ozone stationary control measures that began implementation in 2015 include targeting reducing emissions from coatings and solvents, combustion sources, petroleum operations and fugitive volatile organic compounds (VOCs), as well as incentive and education programs.

Mobile source reduction includes actions seeking further emission reductions from both on-road and off-road mobile sources, such as accelerated penetration of zero- and near-zero emission vehicles and early retirement of older vehicles as well research and development of advanced control technologies from various mobile sources. These measures are designed to achieve attainment for both  $PM^{2.5}$  and ozone; however, greater reductions in ozone are necessary to achieve attainment, so a more robust program to reduce  $NO_X$  emissions that contribute to ozone levels to evaluate, develop, demonstrate, fund, and deploy new technologies is designed to achieve the necessary reductions.  $NO_X$  emissions contribute greatly to ozone levels and are the primary target for reduction to achieve ozone attainment.

SCAG's Regional Transportation Strategy and Transportation Control Measures included in SCAG's 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) are designed to expand infrastructure to limit congestion and expand transportation choices, as well as encourage population and employment growth in high quality transit areas to make transit more feasible. While these measures are primarily intended to affect road congestion and transportation choices, they also can help achieve substantial measurable reductions in emissions that are incorporated into the 2012 AQMP.

#### **SCAQMD** Rule Book

To control air pollution in the Basins, SCAQMD adopts rules that establish permissible air pollutant emissions and governs a variety of businesses, processes, operations, and products to implement the AQMP and the various federal and State air quality requirements. SCAQMD does not adopt rules for mobile sources; those are established by ARB or U.S. EPA. Rules that will be applicable during buildout of the proposed General Plan Updates include Rule 402 (Nuisance), Rule 403 (Fugitive Dust), Rule 1108 (Cutback Asphalt) and Rule 1113 (Architectural Coatings). Rule 402 prohibits discharges of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Rule 403 prohibits emissions of fugitive dust from any grading activity, storage pile, or other disturbed surface area if it crosses the project property line or if emissions caused by vehicle movement cause substantial impairment of visibility (defined as exceeding 20 percent opacity in the air). Rule 403 requires the implementation of Best Available Control Measures (BACM) and includes additional provisions for projects disturbing more than five acres and those disturbing more than fifty acres. Rule 1108 restricts the sale or use of any cutback asphalt containing more than 0.5 percent by volume organic compounds. Rule 1113 establishes maximum concentrations of VOCs in paints and other applications and establishes the thresholds for low-VOC coatings.

# Thresholds of Significance

The General Plan Amendments could result in potentially significant impacts related to air quality if they would:

- A. Conflict with or obstruct implementation of the applicable air quality plan.
- B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- C. Result in a cumulatively considerable net increase of any criteria pollutant that the region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- D. Expose sensitive receptors to substantial pollutant concentrations.
- E. Create objectionable odors affecting a substantial number of people.

Implementation of the General Plan Amendments would influence future development that could potentially result in criteria pollutant and toxic contaminant emissions. Background information is provided on what levels of emissions are anticipated to be generated as a result of implementation of the General Plan Amendments. However, since the project would not directly result in emissions, the General Plan Amendments are analyzed primarily in terms of consistency with the AQMP to determine impacts on region-wide emissions, as well as how implementing projects pursuant to the General Plan would be analyzed individually to determine potentially substantial impacts.

Implementing projects would be screened to determine if maximum daily criteria pollutant emissions from construction and operation are individually and/or cumulatively significant. To determine this, the SCAQMD significance thresholds would be used. These thresholds are identified in Table 4.3-6 (SCAQMD Maximum Daily Emissions Thresholds [lbs/day]). Cumulative impacts are typically determined by analyzing vehicle miles traveled, long-term pollutant reductions, or average vehicle ridership, depending on the use.

Table 4.3-6
SCAQMD Maximum Daily Emissions Thresholds (lbs/days)

30AQMD Maximum Daily Emissions Thicsholds (ibs/days)								
Pollutant	Construction	Operation						
VOC/ROG	75	55						
NOx	100	55						
CO	550	550						
SO <sub>2</sub>	150	150						
PM <sub>10</sub>	150	150						
PM <sub>2.5</sub>	55	55						
Lead	3	3						

Source: MIG, 2015

Note: Volatile organic compounds are measured as reactive organic gases

SCAQMD also has established thresholds for emissions of toxic air contaminants. Toxic air emissions from a project are considered potentially significant if maximum incremental cancer risk is greater than 10 persons in 1,000,000. Cancer risk is determined by calculating the annual average toxic concentration (micrograms per cubic meter, or  $\mu g/m^3$ ) and multiplying it by the unit risk factor (URF) for the toxic and the lifetime exposure adjustment (LEA) of the receptor. URF represents the estimated probability that a person will contract cancer as a result of inhalation of a toxic of one  $\mu g/m^3$  continuously over 70 years. Because some receptors are exposed to toxics for less than 70 years (i.e., off-site workers), the LEA adjusts the receptors exposure to represent actual exposure time. The LEA for residential uses and other sensitive receptors is 1.0, representing an assumed exposure of 70 continuous years. Acute and chronic non-cancer risks are considered significant if a project's toxic air contaminant emissions result in a hazard index greater than or equal to one. The hazard index is determined by calculating the average annual toxic

concentration ( $\mu g/m^3$ ) divided by the reference exposure level (REL) for a particular toxic. The REL is the concentration at which no adverse health impacts are anticipated and is established by OEHHA.

# Environmental Impact

IMPACT 4.3.A

> 4.3.B 4.3.C

The proposed General Plan Amendments will not conflict with the 2012 Air Quality Management Plan because land use policy will support the projected level of population growth. Also, projected cumulative daily pollutant emissions program-wide will not exceed SCAQMD thresholds for criteria pollutants. Impacts at the program level would be less than significant.

### **Construction Emissions**

The proposed General Plan Amendments would not directly result in construction of any development or infrastructure; however, future development supported by the policies of the General Plan would result in short-term construction-related criteria pollutant emissions. Short-term criteria pollutant emissions would occur during site preparation, grading, building construction, paving, and painting activities associated with specific new development projects. Emissions would occur from use of equipment, worker, vendor, and hauling trips, and disturbance of onsite soils (fugitive dust). Pursuant to existing CEQA requirements, short-term, project-specific construction-related emissions will be analyzed as development proposals are submitted. Mitigation will be applied, where necessary, and typically includes requirements for use of low-VOC paints, installation of diesel particulate filters on older construction equipment, and limitations on hauling distances and or daily trips.

# **AQMP Consistency and Pollutant Emissions**

A significant impact could occur if the proposed project conflicts with or obstructs the implementation of SCAQMD 2012 AQMP. Conflicts and obstructions that hinder implementation of the AQMP can delay efforts to meet attainment deadlines for criteria pollutants and maintaining existing compliance with applicable air quality standards. Because of this program-level analysis, Thresholds A through C are discussed as a whole in this section.

As a policy document, no development is authorized or would directly occur from the adoption of the General Plan Amendments. However, development can be expected to occur within the planning area guided by amended General Plan policies. Short-term criteria pollutant emissions would occur during site preparation, grading, building construction, paving, and painting/coating activities. Emissions would occur from use of construction equipment, worker, vendor, and hauling trips, and disturbance of on-site soils (fugitive dust). Long-term criteria air pollutant emissions would result from the operation of potential development. Long-term emissions are categorized as area source emissions, energy demand emissions, and operational emissions. Operational emissions would result from automobile, truck, and other vehicle sources associated with daily trips to and from future development.

Pursuant to the methodology provided in Chapter 12 of the 1993 SCAQMD *CEQA Air Quality Handbook*, consistency with the 2012 Air AQMP is affirmed when a project: (1) does not increase the frequency or severity of an air quality standards violation or cause a new violation and (2) is consistent with the growth assumptions in the AQMP (SCAQMD). These criteria are discussed below.

# Criterion 1

To address the first criterion, an air quality modeling analysis is typically performed to determine if a specific project could cause a violation of any air quality standard either regionally or locally. However, given that the proposed General Plan Amendments represent a programmatic proposal and would not directly result in construction of any development or infrastructure, such analysis cannot be completed at this time. Future developments that result from buildout of the proposed General Plan would be subject to CEQA, which, depending on the project, may include conducting an air quality analysis to determine if a project could increase the frequency or severity of an air quality standards violation or cause a new violation. To determine if the proposed General Plan Amendments could

potentially contribute or cause a new air quality violation by exceeding applicable ambient air quality standards, consistency with the growth projections used in the AQMP is appropriate, as discussed in criterion 2 below.

# Criterion 2

The proposed General Plan Amendments have the potential to support 9,271 more dwelling units, 21,166 more residents, and approximately 5.6 million square feet more of non-residential development compared to the existing conditions. Due to the changes in proposed land uses from the existing General Plan Land Use Plan, upon which the 2012 AQMP is partially based, and the proposed General Plan Amendments and potential future development supported by implementation of the amended General Plan may not be consistent with the growth projections utilized in the 2012 AQMP. This could result in potentially significant impacts because air quality attainment goals could be delayed since the strategies adopted in the AQMP would not account for land use changes in the planning area.

The 2012 AQMP long-term emissions inventory is based on the growth and land use projections included in SCAG's 2012 *Regional Transportation Plan/Sustainable Communities Strategy.* According to the RTP/SCS, by 2035 Costa Mesa's population is projected to be 114,000 and the total employment base is projected to be 88,800. As is detailed in the Project Description, the proposed land use plan can accommodate a build-out population of 131,690 and the total employment base is projected to be 104,425. Therefore, the proposed General Plan is inconsistent with the growth projections used in the RTP/SCS and would be inconsistent with the 2012 AQMP.

Despite this consistency, the following policies in the updated General Plan support attainment of air quality goals through assessment and mitigation of future development projects and City operations in regards to construction and operational pollutants, vehicle miles traveled and trips generated, alternative transit systems, and use of alternative energy.

### Land Use Element

<u>Objective LU-2.1:</u> Encourage new development and redevelopment to improve and maintain the quality of the urban environment.

Policy LU-2.O: Incorporate the principles of sustainability into land use planning, infrastructure, and development processes to reduce greenhouse gas emissions consistent with State goals.

Objective LU-5.1: Allow for desired, beneficial, and sustainable growth.

Policy LU-5.D: Apply development standards to residential development proposed within 500 feet of I-405 that will reduce noise and air quality impacts, including the use of buffering, sound walls, landscaping, air filtration systems, and similar measures.

Policy LU-5.E: Develop a pedestrian and streetscape plan that provides design standards and guidelines to create an attractive streetscape and connectivity to major activity areas, including South Coast Plaza, Metro Pointe, and the Theatre and Arts District.

Policy LU-5.F: Ensure new development projects fall within the maximum vehicle trip budget established in the North Costa Mesa Specific Plan.

Policy LU-5.R: Create a pedestrian and streetscape plan for the SoBECA district that provides design standards and guidelines for an attractive, walkable, vibrant shopping village,

where commercial and roadway design encourage pedestrian activity and provide connectivity to surrounding activity centers on Bristol Street and Baker Street.

Policy LU-5.AA: Establish and enforce design regulations to require new buildings to be of high

quality, with pedestrian-oriented and active uses along the street (Harbor Boulevard)

appropriate for the specific location.

Policy LU-5.EE: Encourage improvements within the Westside Urban Plans that promote walkable,

bikeable neighborhoods, with sidewalks, street trees, and "green street" roadway

improvements for bike lanes and sidewalks with routes to schools.

Policy LU-5.FF: Ensure that new development projects meet the maximum vehicle trip budget and

housing unit limits established by the Westside Urban Plans.

# **Growth Management Element**

<u>Objective GM-1:</u> Transportation and infrastructure systems that meet the current and future needs of residents and businesses.

Policy GM-1.B: Maintain land use patterns and mixes that allow for easy pedestrian and bicycle

circulation, and that reduce the need for residents to commute long distances to

work.

### Circulation Element

<u>Objective C-1.1:</u> Plan, develop, and implement a comprehensive transportation system that serves all users and modes of travel.

Policy C-1.A: Develop as many street projects as possible in an affordable, balanced, responsible,

and equitable way that accommodates and encourages travel by motorists, bicyclists, public transit vehicles and their passengers, and pedestrians of all ages and abilities.

Policy C-1.B: Improve the appearance and function of Costa Mesa's street system by redesigning

streets using the "Complete Streets" approach, which collectively considers the needs of pedestrians, people with mobility constraints, bicyclists, and public transit users.

Policy C-1.D: Design, plan, and operate streets to serve multiple purposes; provide flexibility in

design to adapt to future demands.

Policy C-1.E: Allow for flexible use of public rights-of-way to accommodate all users of the street

system while maintaining safety standards.

Policy C-1.F: Consider street retrofit and modifications that can improve mobility and safety for

bicyclists, users of electric bicycles/scooters, pedestrians, and wheelchair users through such measures as neighborhood traffic management strategies and

Complete Streets design.

Policy C-1.G: Coordinate with other responsible agencies the planning, funding, prioritization, and

implementation of bicycle, pedestrian, and transit programs and supporting

infrastructure.

- Policy C-1.I: Eliminate or minimize physical obstacles and barriers on City rights-of-way that impede movement of cyclists, pedestrians, wheelchair users, transit riders, and others using alternative transportation modes.
- <u>Objective C-2.2:</u> Employ street improvements and congestion management tools to encourage efficient performance of the transportation system.
  - Policy C-2.J: Incorporate street system improvements into the Capital Improvement Program.
  - Policy C-2.K: Continue to employ intelligent transportation systems (ITS) strategies—such as adaptive signal controls, fiber optic communication equipment, closed circuit television cameras, real-time transit information, and real-time parking availability information—to reduce traffic delays, lower greenhouse gas emissions, improve travel times, and enhance safety for drivers, pedestrians, and cyclists.
  - Policy C-2.L: Investigate all operational measures, including the use of one-way streets, to improve traffic circulation and to minimize congestion for all travel modes.
  - Policy C-2.M: Attempt to maintain or improve mobility within the City to achieve a standard level of service not worse than Level of Service "D" at all intersections under the sole control of the City.
- Objective C-3.1: Expand, enhance, and protect the existing bicycle and pedestrian network to provide a comprehensive, system of Class I, Class II, Class III, and Class IV facilities to increase connectivity between homes, jobs, schools transit, and recreational resources in Costa Mesa.
  - Policy C-3.A: Develop an extensive bicycle and pedestrian backbone network through the use of standard and appropriate innovative treatments.
  - Policy C-3.B: Plan and install new bicycle lanes on Major Arterials, where feasible and appropriate.
  - Policy C-3.C: Plan and install shared lane markings ("sharrows") and signage on appropriate existing and planned bicycle routes where bicycle lane implementation is demonstrated to be not feasible.
  - Policy C-3.D: Where feasible, Class I shared-use paths should be a priority for future developments.
  - Policy C-3.E: Plan and install new shared-use paths in utility corridors and/or along flood control channels, and extend existing bicycle and shared-use paths.
  - Policy C-3.F: Plan and complete north/south multi-purpose and bicycle routes through the City to augment the east/west route.
  - Policy C-3.G: Consider the identification and feasibility of potential Class IV cycle tracks.
  - Policy C-3.H: When feasible, implement the completion through regional coordination of the Costa Mesa roadway and trail segments of regional bikeway plans.

Policy C-3.I:	Encourage reallocation of roadway rights-of-way where appropriate to accommodate shared-use path and bicycle facilities, while preserving and respecting the character of each adjacent neighborhood.
Policy C-3.J:	Support bicycle improvement projects that close gaps in the regional bicycle network either by implementing specific projects recommended in the Plan or through other treatments.
Policy C-3.K:	Encourage bicycle projects that connect local facilities and neighborhoods to major bicycle corridors.
Policy C-3.L:	Work cooperatively with adjoining jurisdictions and local/regional agencies to coordinate bicycle planning, and implementation activities. Where required, develop consistent active transportation plans and policies with regional and adjacent agencies.
Policy C-3.M:	Prioritize safe access to major regional trails such as the OC Loop/Santa Ana River Trail and the Newport Back Bay Trail System. Where feasible, plan and provide a continuous low-stress Class I and/or Class IV facility from east to west across the city between these facilities.
Policy C-3.N:	Explore favorable opportunities to remove parking to accommodate bicycle lanes.
Policy C-3.P:	Consider every street in Costa Mesa as a street that cyclists could use.
Policy C-3.Q:	Link on-road and off-road bicycle and pedestrian facilities within Costa Mesa to existing and planned facilities in adjacent and regional jurisdictions.
Policy C-3.S:	Establish designated safe routes to schools for biking and walking.
Policy C-3.T:	Designate walkable districts in the City.
Objective C-3.2: Provid	le end-of-trip facilities that support the bicycle network.
Policy C-3.U:	Provide bike parking and bike-related amenities at public facilities and along public rights-of-way.
Policy C-3.V:	Pursue public-private partnerships to furnish local businesses with secure bike parking and other related amenities.
Policy C-3.W:	Develop and adopt bicycle parking equipment standards for bicycle parking to be installed within the public right-of-way and post on the City website.
Policy C-3.X:	Work with local schools and colleges to provide ample and secure bike parking and other related amenities for students and employees.
Policy C-3.Y:	Work with OCTA to maximize bicycle amenities, such as bus stop solar lighting and bicycle lockers, at high-volume transit stops.
Policy C-3.Z:	Prioritize the installation of bicycle-scale and/or pedestrian-scale lighting.

Policy C-3.AA: Encourage and incentivize providing attended bicycle parking services, such as a bicycle valet, at major City events, OC Fair, Farmers' Markets, holiday festivals, and

other community events.

Policy C-3.BB: Prioritize schools with the highest auto traffic volume during peak hours and

insufficient parking for staff and parents. Plan and install bicycle facilities adjacent

those schools.

Policy C-3.CC: Provide bike parking and bike-related amenities at public facilities and along public

right-of-way.

<u>Objective C-3.3:</u> Encourage sustainable modes of transportation to fill gaps between the first and last miles of trips (walking, biking, ride sharing, transit, taxi and car-sharing).

Policy C-3.DD: Identify citywide infrastructure needed to create the interconnected multi-trail system.

Policy C-3.EE: Improve the quality, aesthetics, and safety of high-use pedestrian corridors.

Policy C-3.FF: Develop and implement a bicycle sharing system.

Policy C-3.GG: Proposed new mode split goals:

- 50 percent motor vehicles
- 10 percent transit
- 10 percent bicycles
- 20 percent walking
- 10 percent carpools, taxi, transportation network company services, and car sharing

Policy C-3.HH: Establish a goal for all trips of less than three miles to be 30 percent by bicycle, and

establish a goal of less than 1 mile to be 30 percent by walking.

Policy C-3.II: Consider implementing a small-scale transportation system to encourage mode shift

to popular destinations as defined by users.

<u>Objective C-4.1:</u> Develop bicycle and pedestrian facilities with approved uniform design standards, and implementation of way-finding signage providing information on various destinations.

Policy C-4.B: Provide and maintain bicycle and pedestrian signal detectors, informational signage,

and lighting along City bikeways.

Policy C-4.C: Develop, install and maintain a bicycle and pedestrian way-finding signage program

to indicate route turns, the presence of intersecting bikeways, streets and distances

to nearby local and major destinations.

Policy C-4.E: Utilize Complete Streets elements as demonstrated in most recent versions of

National Association of City Transportation Officials (NACTO) Urban Street Design

Guide and Bikeway Design Guide.

Objective C-5.1: Consider bicycle and pedestrian facilities during land use planning process.

- Policy C-5.A: Incorporate the Costa Mesa Bicycle and Pedestrian Master Plan into the City's General Plan.
- Policy C-5.B: Ensure that all current and proposed land use planning is consistent with the Costa Mesa Bicycle and Pedestrian Master Plan.
- Policy C-5.C: Require new developments to provide adequate bicycle parking and pedestrian access.
- Policy C-5.D: Collaborate with property owners to increase bicycle parking over time.
- Policy C-5.E: Encourage the integration of compatible land uses and housing into major development projects to reduce vehicle use.
- Policy C-5.F: Provide a fully integrated network of modern active transportation facilities to and from major activity centers and residential centers.
- Policy C-5.G: Identify areas where an increase in the need for active transportation can reasonably be anticipated due to housing/business growth.
- Policy C-5.I: Develop creative, artistic, and functional bicycle parking solutions, and install them throughout the City as a standard.
- <u>Objective C-5.2</u>: Integrate bicycle and pedestrian facility improvements during planning, design, and implementation of transportation projects.
  - Policy C-5.J: Promote the preservation of bicycle access within all roadway rights-of-way, as well as the development of innovative, safety-enhanced on-street facilities, such as bicycle boulevards and cycle tracks.
  - Policy C-5.K: Establish bike boulevards on streets with low traffic volumes and slow speeds to encourage bicycling.
  - Policy C-5.L: Proactively seek new opportunities for acquisition of abandoned rights-of-way and other lands for the development of new multi-use pathways that integrate with the planned network.
- Objective 6.1: Encourage more people to walk and bicycle by supporting programs that foster community support for bicycling and walking, and raise public awareness about active transportation.
  - Policy C-5.L: Proactively seek new opportunities for acquisition of abandoned rights-of-way and other lands for the development of new multi-use pathways that integrate with the planned network.
  - Policy C-6.B: Support programs aimed at increasing bicycle and walk trips by providing incentives, recognition, or services that make bicycling and walking a more convenient transportation mode.

- Policy C-6.C: Promote bicycling and walking at City-sponsored and public events, such as Earth Day, Bike to Work Day/Month, farmers' markets, public health fairs, art walks, craft fairs, and civic events.
- Policy C-6.D: Encourage and promote bicycle related businesses within Costa Mesa including, but not limited to, involvement of civic clubs and organizations.
- Policy C-6.E: Promote active transportation events in Costa Mesa to raise awareness and encourage bicycling, including, but not limited to, those that may involve temporary road closures, bike to work/school, senior walks, historic walks, and ciclovias.
- Policy C-6.F: Encourage major employment centers and employers to promote commuting by bicycle including the use of flex-time work schedules to support non-rush bicycle commuting. Build a coalition with City, businesses, schools, and residents to promote active transportation.
- Policy C-6.G: Encourage participation in bicycle and pedestrian promotion activities by education facilities, arts programs, active transportation clubs, and entertainment providers.
- Policy C-6.H: Achieve "Silver Level Bicycle Friendly Community" by League of American Bicyclists by 2025.
- Policy C-6.I: Achieve "Walk Friendly Community" status from WalkFriendly.org by 2025.
- Policy C-6.J: Achieve "HEAL City" designation by 2017.
- Objective 7.1: Improve air quality and public health and reduce ambient noise by promoting Active Transportation programs.
  - Policy C-7.A: Determine baseline emissions levels, then track and communicate changes in emissions as modes of transportation trips shift to encourage more walking and biking.
  - Policy C-7.C: Increase pedestrian and bicycle trips, thereby reducing vehicle trips and vehicle miles traveled.
  - Policy C-7.D: Coordinate with appropriate federal, state, and county health agencies on active transportation programs to achieve health benefits.
- Objective 8.1: Continuously monitor and evaluate Costa Mesa's implementation progress on the Bicycle and Pedestrian Master Plan policies, programs, and projects.
  - Policy C-8.A: Establish a monitoring program to measure the effectiveness and benefits of the Costa Mesa Bicycle and Pedestrian Master Plan.
  - Policy C-8.B: Track citywide trends in active transportation through the use of Census data, bicycle and pedestrian counts, travel surveys, and online surveys as part of annual reviews of the General Plan.

Policy C-8.C: Ensure that Bicycle and Pedestrian Master Plan programs and projects are implemented in an equitable manner, geographically, socioeconomically, and serving disadvantaged communities.

<u>Objective 8.2:</u> Pursue grants and other sources of funding for bicycle and pedestrian projects.

Policy C-8.D: Strategize use of resources on developing effective and efficient grant application and program administration.

Policy C-8.E: Pursue multiple sources of funding and support efforts to maintain or increase federal, state and local funding for the implementation of the Bicycle and Pedestrian Master Plan.

Policy C-8.F: Consider designating a portion of development traffic impact fees to fund bicycle and pedestrian facilities.

<u>Objective C-11.1:</u> Coordinate land use policies and development activities that support sustainable transportation system.

Policy C-11.A: Ensure that new development projects are consistent with the vehicular trip budgets adopted for the North Costa Mesa Specific Plan and the Westside Urban Plans.

Policy C-11.B: Require that large developments and redevelopments provide short-term and long-term vehicular traffic impact studies.

Policy C-11.C: Promote the development of new mixed-use projects near established transit corridors and nodes to provide a practical alternative to the single-occupant vehicle, consistent with the Land Use element.

Policy C-11.D: Ensure that zoning regulations accommodate facilities to support use of alternative fuel vehicles, both at commercial locations and at residences.

Policy C-11.E: Match parking policies to land use and circulation element goals.

Policy C-11.G: Support consistency with the Orange County Sustainable Communities Strategy (OC SCS) and SCAG RTP/SCS by providing an integrated land use and transportation plan to meet mandated emissions reduction targets consistent with SB 375.

#### **Conservation Element**

<u>Objective C-2:</u> Work towards the conservation of energy resources in both existing and new buildings, utilities, and infrastructure.

Policy C-2.A: Promote efficient use of energy and conservation of available resources in the design, construction, maintenance, and operation of public and private facilities, infrastructure, and equipment.

Policy C-2.B: Consult with regional agencies and utility companies to pursue energy efficiency goals and expand renewable energy strategies to reach zero net energy for both residential and commercial new construction.

- Policy C-2.C: Continue to develop partnerships with participating jurisdictions to promote energy efficiency, energy conservation and renewable energy resource development by leveraging the abilities of local governments to strengthen and reinforce the capacity of energy efficiency efforts.
- Policy C-2.D: Encourage new development to take advantage of Costa Mesa's optimal climate in the warming and cooling of buildings, including use of heating, ventilation and air conditioning (HVAC) systems.
- Policy C-2.E: Promote environmentally sustainable development principles for buildings, neighborhoods, and infrastructure.
- Policy C-2.F: Encourage construction and building development practices that reduce resource expenditures throughout the lifecycle of the structure.
- Policy C-2.G: Continue to require all City facilities and services to incorporate energy and resource conservation standards and practices and new municipal facilities be built within the LEED Gold standards or equivalent.
- Policy C-2.H: Take a leadership role in implementing programs for energy and water conservation, waste reduction, recycling and reuse, and increased reliance on renewable energy.
- Policy C-2.I: Continue City green initiatives in purchases, equipment, and agreements that favor sustainable products and practices.
- <u>Objective C-4.A:</u> Pursue the prevention of the significant deterioration of local and regional air and water quality.
  - Policy C-4.A: Support regional policies and efforts that improve air quality to protect human and environmental health, and minimize disproportionate impacts on sensitive population groups.
  - Policy C-4.B: Consult with businesses, industries, residents, and regulatory agencies to reduce the impact of direct, indirect, and cumulative impacts of stationary and non-stationary pollution sources, such as industry, diesel trucks, and aircraft.
  - Policy C-4.C: Require that sensitive uses such as schools, childcare centers, parks and playgrounds, housing, and community gathering places are protected from adverse impacts of emissions.
  - Policy C-4.D: Continue to participate in regional planning efforts with nearby jurisdictions and the South Coast Air Quality Management District to meet or exceed air quality standards.
  - Policy C-4.E: Support regional, State, and federal efforts to enforce existing pollution control laws and strengthen regulations.
  - Policy C-4.F: Encourage compact development, infill development, and a mix of uses that are in proximity to existing transportation infrastructure and supports walking.

Policy C-4.G: Enhance bicycling and walking infrastructure, and support public bus services,

pursuant to the Circulation Element's goals, objectives, and policies.

Policy C-4.H: Incentivize renewable energy installation, facilitate green technology and businesses,

and reduce community-wide energy consumption.

Policy C-4.I: Develop green procurement plans and seek energy savings in operations and

maintenance of City facilities.

These policies would work to reduce criteria pollutant emissions in the planning area in a number of ways. These policies aim to reduce the City's carbon footprint, ensure the long-term viability and productivity of the community's natural and human-made environment, and manage resources wisely to meet the needs of a growing population and economy. Community planning decisions would be based on sustainable practices that reduce environmental pollutants, conserve resources, and minimize waste. These policies would also reduce the dependence on fossil fuels by encouraging the design of energy-efficient buildings, using renewable energy, and promoting alternative methods of transportation. However, because the proposed General Plan Update would be inconsistent with AQMP growth projections, impacts would still be significant.

Construction and operation related impacts of developments constructed as a result of the proposed General Plan Update will be identified on a project-by-project basis, at which time additional mitigation would be adopted, if necessary.

Regarding potential contribution to an existing or projected air quality violation, the 2012 AQMP is projected to achieve attainment of criteria pollutants based on the projections, measures, and timeframes included in each as described in Section 4 (Regulatory Framework) of this section. The proposed General Plan Amendments would support AQMP implementation to achieve the attainments through the measures included in the AQMP through the proposed policies; however, because the accommodated growth would exceed projections assumed in the 2012 AQMP, as previously stated, the proposed General Plan may interfere with the implementation of the 2012 AQMP. Impact would be significant.

IMPACT 4.3.D The proposed General Plan Amendments have the potential to result in the exposure of sensitive receptors to substantial pollutant concentrations associated with industrial uses. However, impacts would be less than significant with implementation of General Plan policies and application of standard development practices.

#### **Concentrations of Criteria Pollutants**

The proposed General Plan Amendments would not authorize any specific construction; however, future development projects constructed pursuant to General Plan land use policies could potentially expose sensitive receptors to temporary, localized pollutant concentrations in excess of air quality standards, even if the broader region is in attainment. Examples include emissions of fugitive dust and vehicle and machinery exhaust during large-scale grading activities and roadway construction. Under limited circumstances, large-scale construction activities could result in emissions of fugitive dust, nitrogen oxides, and other criteria pollutants that could exceed SCAQMD daily thresholds of significance and thereby could result in a significant impact. Emissions of fugitive dust near sensitive receptors are a primary concern because, unlike gaseous pollutants that quickly rise and affect the upper atmosphere, particulate matter tends to remain close to the ground.

Pursuant to existing law, future development associated with buildout of the proposed General Plan would be required to prepare an air quality impact analysis for individual development projects where possible emissions could impact sensitive receptors. Such analyses will include project-specific mitigation measures, as appropriate.

Furthermore, future construction activities will be subject to routine control measures as required by SCAQMD (Rules 402, 403, 1108, and 1113). It should be noted that SCAQMD guidance indicates that analysis of localized criteria pollutant impacts is required; therefore, future construction projects would be assessed for localized criteria pollutant impacts on a case-by-case basis under the purview of the City. Impacts related to local criteria pollutant emissions would not be significant with implementation of existing regulations and the proposed policies of the General Plan update.

According to the *Air Quality and Land Use Handbook*, ARB recommends that sensitive land uses not be located within 500 feet of highways or major arterials having average annual daily traffic (AADT) that exceeds 100,000 vehicles. This is due to the concentration of pollutants that accumulate in this proximity to freeways and other major arterials. No non-freeway roadways within the planning area either currently or over the long term are projected to have an AADT that exceeds 100,000 vehicles. I-405, SR-55, and SR-73 currently have and will likely continue to have AADTs that exceed 100,000.¹ Based on ARB guidelines, a significant impact could occur if the General Plan Amendments would permit new residential or other sensitive uses within 500 feet of these highways.

Today, residential land uses exist within 500 feet of these highways within the planning area. Also, there are a number of vacant parcels designated for residential land use within 500 feet of either freeway. With the implementation of proposed General Plan policies and adherence to existing environmental regulations that require specific analysis of impacts of industrial projects on existing or potential sensitive receptors and sensitive receptors from existing industrial projects, significant impacts to sensitive receptors from heavy traffic roadway criteria pollutants would be less than significant.

#### **Toxic Air Contaminants**

Some industrial land uses have the potential to generate substantial toxic air contaminant (TAC) concentrations that could adversely affect sensitive receptors. Such emissions could be produced by a variety of interior processes and outdoor activities that generate emissions of TACs. TACs are air pollutants that may cause or contribute to an increase in deaths or serious illnesses or that may pose a present or potential hazard to human health. Unlike criteria pollutants, there are no levels of exposure to TACs that do not produce adverse health effects. The Tanner Bill requires implementation of risk reduction measures for toxic contaminant releases with cancer risks that are equal to or greater than 25 per million and the SCAQMD has established a TAC emissions cancer risk threshold of equal to or greater than ten per million. For example, common facilities within the District that have a cancer risk of approximately 10 per million include forges, refineries, fuel distribution and storage facilities, and heavy plating facilities. Common facilities with a cancer risk of approximately 25 per million or more include aircraft manufacturing, large plating and machining facilities, and chemical manufacturing.

The proposed General Plan land use plan includes Industrial Park (IP) and Light Industrial (LI) land use categories that permit varying degrees of manufacturing, processing, and distribution activities. Future businesses of these types that may be developed within the designated industrial areas could result in emissions of a variety of toxic air contaminants.

ARB research has documented increased potential health risks for sensitive receptors as the distance to sources of hazardous emissions is reduced. Based on these findings, they have developed guidelines to assist local government agencies in siting new land uses that could be occupied by "sensitive individuals" at a safe distance from such sources.<sup>2</sup> Sensitive individuals refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses where sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (also known as sensitive sites or sensitive land uses).

The recommended distances are based on a variety of health studies and air pollution monitoring and modeling. Major air pollution source categories currently found in Costa Mesa, or that could be developed in the future within designated industrial zones, and their associated air pollutant risks, are described below.

# Freeways and High-Traffic Roadways

High-traffic roadways such as freeways or other major roadways with traffic volumes at 100,000 vehicles per day or more. Primary pollutants of concern include diesel particulate matter, benzene, and 1,3-butadiene.

## **Distribution Centers:**

Distribution warehouses result in the generation of heavy diesel truck traffic and have been linked with high emissions of diesel particulate matter (DPM), established as an air toxic contaminant by ARB in 1998.<sup>3</sup> DPM was identified as a toxic because of its potential to cause cancer, premature deaths, and other health problems. Health hazards associated with DPM are especially hazardous for children because their lungs are still developing, and the elderly who may have other serious health problems.

# Perchloroethylene Dry Cleaners:

Perchloroethylene is the most common used solvent in the dry cleaning industry to clean clothes and other materials. Although dry cleaning operations are subject to regulations enforced by ARB and SCAQMD, continued studies still show a substantial risk even near well-controlled operations. Perchloroethylene is a carcinogen and also presents other non-cancer health risks including dizziness, impaired judgment and perception, and liver and kidney damage.

## Gasoline Dispensing Facilities:

Common local gas stations present a relatively low-risk to land uses in the general proximity. However, large-volume, high throughput gas stations have become a concern due to the high amounts of gasoline being pumped (in excess of 2.4 million gallons per year) and are the main target of the recommended buffer. The pollutant of concern associated with gasoline stations is benzene.

Five years of monitoring indicates that strong winds at the Costa Mesa air quality monitoring station come primarily from the southwest with some strong winds also coming from the northeast less frequently, which should generally representative of the wind pattern in Costa Mesa.<sup>4</sup> In those cases where residential uses and other sensitive land uses are located immediately northeast or southwest of industrial land uses, a potentially significant impact could occur because sensitive uses could be exposed to emissions carried by wind from the industrial land uses. Based on the ARB recommended siting standards, land designated for residential development within 1,000 feet downwind of a designated industrial land use concentration is considered to be a potentially significant pollutant exposure area. Existing school and park facilities and ¼-mile buffer areas are shown on Figure 4.3-1 (Air Quality Sensitivity) and the 1,000-foot industrial buffer areas, regardless of wind direction, are identified in Figure 4.3-2 (Existing Emission Locations) and Figure 4.3-3 (Potential Emission Locations) and the residential land uses are shown previously in Exhibit 3.0-3 (Draft Land Use Plan).

Since existing and planned industrial land uses exist throughout much of the planning area, much of the City may be affected by any potential substantial industrial emission source that currently exists or may be developed in the future regardless of wind direction. This does not mean that any existing homes in the identified 1,000-foot buffer areas are currently exposed to significant health risks; this is intended simply as a guideline for estimating where there is the most potential for exposure of sensitive receptors to substantial toxics concentrations generated within areas of industrial uses. Actual levels of risk can only be determined through site-specific analysis and specialized air pollutant modeling, based on an actual relationship between an industrial emission source and a specific residential site. Such

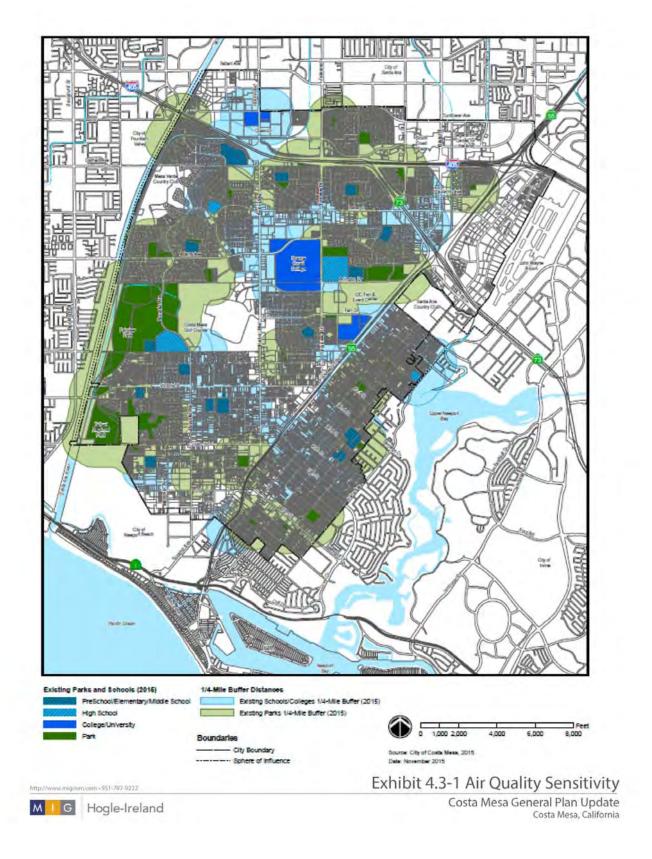


Figure 4.3-1 Air Quality Sensitivity

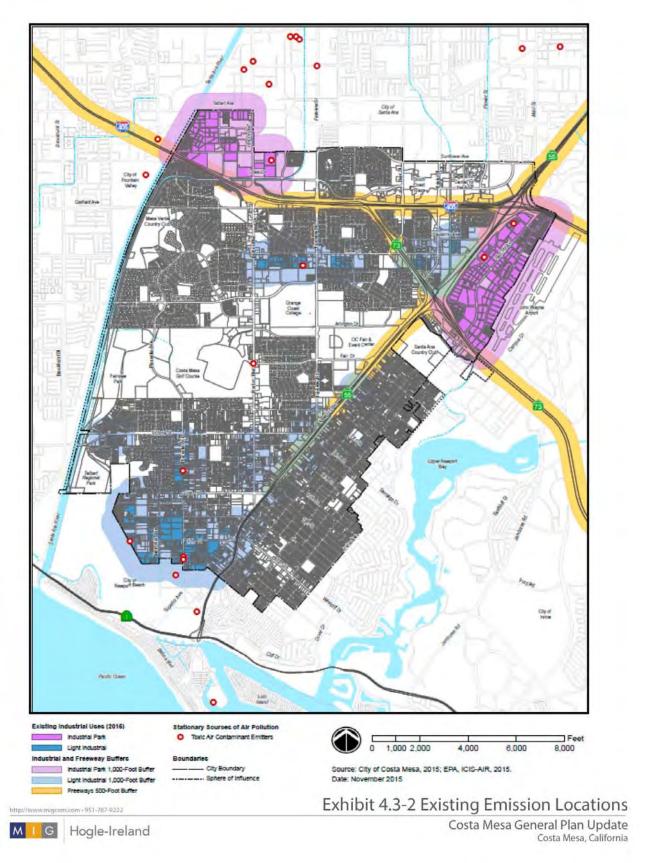


Figure 4.3.2 Existing Emission Locations

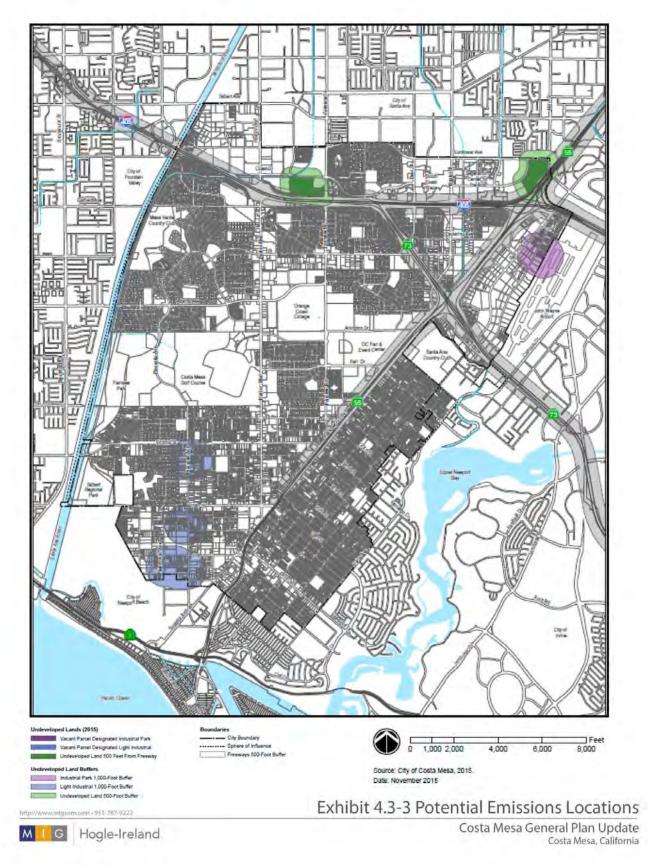


Figure 4.3-3 Potential Emissions Locations

assessments might determine that there are less than significant health risks, or that there could be some significant level of exposure to pollutants that need to be mitigated through siting, site design, or operational restrictions. General Plan policies for proposed developments to prepare an air quality analysis, which would include health risk assessments where appropriate, would address any potential impact that could occur in these identified areas or any other area of the City. With implementation of proposed General Plan policies and existing regulations that regulate and monitor toxic emitters, potential health impacts to sensitive receptors due to exposure to toxic air contaminants will be less than significant.

# **Carbon Monoxide Hotspots**

A carbon monoxide (CO) hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. CO hotspots have the potential to violate state and federal CO standards at intersections, even if the broader Basin is in attainment for federal and state levels. In general, the California Department of Transportation *Project-Level Carbon Monoxide Protocol* (CO Protocol) recommend analysis of CO hotspots when a project increases the number of vehicles operating in cold start mode by more than two percent, increases traffic volumes by more than five percent, or worsens average traffic speeds. In addition, CO hotspots are typically associated with intersections with lower ratings of Level of Services (LOS), such as LOS E or F, which indicate high congestion and high amounts of idling vehicles that have the potential to generate a CO hotspot. Currently the following intersection operates at LOS E, and no intersections operate at LOS F:5

Hyland Avenue and MacArthur Boulevard

Pursuant to existing regulations, future development projects associated with buildout of the proposed General Plan will be screened and analyzed pursuant to the CO Protocol to determine if a CO hotspot may occur at congested intersections. Mitigation may be required, if necessary, to alleviate traffic congestion and minimize the hotspot potential. Other mitigation could include operational restrictions on future development. With screening and analysis of future projects pursuant to the CO Protocol, impacts related to carbon monoxide hotspots would be less than significant.

IMPACT 4.3.E The proposed General Plan Amendments have the potential to result in the exposure of sensitive receptors to odors from industrial uses. Impact would be less than significant with implementation of General Plan policies and application of standard development practices.

According to the *CEQA Air Quality Handbook*, land uses associated with odor complaints include agricultural operations, wastewater treatment plants, landfills, and certain industrial operations (such as manufacturing uses that produce chemicals, paper, etc.). While odors do not present a health risk of themselves, they are often considered a nuisance by people who live, work, or otherwise are located near outdoor odor sources. Odor controls are routinely established by cities, on a case-by-case basis, during the development project review/entitlement process, based on the unique characteristics of the specific development proposal. Future potential sources of odors would have to be considered in light of potential impacts to surrounding land uses. Pursuant to existing environmental regulations, projects would be evaluated with regard to potential impacts related to odors. While siting is the primary way to prevent exposure to odors, odors can also be mitigated in similar fashion to air pollutant emissions (i.e., filtering). Impacts related to odors would be less than significant with implementation of existing development review practices.

# Mitigation Measures

No mitigation is available to provide for consistency of the proposed General Plan Amendments with the 2012 AQMP growth projections. As part of the process of preparing the subsequent RTP/SCS on which the subsequent AQMP will be based, the City will work with SCAG to ensure that the regional projections reflect Costa Mesa's updated land

use objectives and projections, as well as the policies and measures the City is pursuing to help achieve regional air pollution reduction goals. In the interim, however, no mitigation is available.

Pursuant to proposed General Plan policies, CEQA, and SCAQMD regulations, individual development projects would be required to perform project-specific air quality analyses to determine potential impacts and mitigation measures to comply with the applicable AQMP and maximum daily emission thresholds.

# Level of Impact with Mitigation Incorporated

Not applicable

# References

Stantec Consulting Services, Inc. City of Costa Mesa General Plan Update Traffic Analysis. February 12, 2016.

United States Environmental Protection Agency. Clean Air Act. www.epa.gov/air/caa/ [November 16, 2015].

United States Environmental Protection Agency. EnviroMapper for Envirofacts. http://www.epa.gov/emefdata/em4ef.home [November 15, 2015].

United States Environmental Protection Agency. Particulate Matter. http://www.epa.gov/air/particlepollution/index.html [November 14, 2012].

Western Regional Climate Center. Period of Record Monthly Climate Summary: Newport Beach Harbor, California (046175). http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6175 [November 15, 2015].

This section discusses potential impacts of the General Plan Amendment's implementation on vegetation communities, wildlife habitat, rare, endangered, and special status species, wildlife migration, and wetlands and riparian habitat. The analysis is this section is based in part on the:

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database
- County of Orange Central and Coastal Sub-Region: Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP)
- Fairview Park Master Plan
- California Land Cover Mapping and Monitoring Program

Additional information on special status species and habitats was acquired from the NatureServe Explorer, the University of California, and other publically available resources. The California Department of Fish and Wildlife submitted a comment letter on the Notice of Preparation. This section includes information recommended in the comment letter and addresses Fairview Park as a potential habitat reserve for the Orange County NCCP/HCP.

# Existing Conditions

#### Climate

Orange County is characterized by mild summers and winters. The average winter high temperature is 46.9° Fahrenheit (F) and the average summer high temperature is 73.4° F. Daytime winds are from the southwest at six to eight miles per hour (MPH) as air moves onshore from the Pacific Ocean. Rainfall in the area is infrequent and variable. Most precipitation occurs from December through March, averaging 11.0 inches per year (WRCC 2015).

#### Flora and Fauna

A majority of Costa Mesa's natural biological resources are located in areas free from large-scale development intrusion. Areas such as these are found in western Costa Mesa near the Santa Ana River and include Fairview Regional Park and the adjacent wildlife refuge. Additionally, the agricultural fields in northern Costa Mesa support a unique animal community related to field crop production.

#### Flora

Prior to development in the City of Costa Mesa, the natural landscape was covered with a wide variety of native grasses, with small sage scrub communities along the coastal bluffs and canyons. What remains of this natural environment is not representative of conditions at that time. The grasslands on the mesa at Fairview Park and the Santa Ana River lowlands have been significantly altered by the introduction of nonnative grasses, grazing, agricultural production and discing, and frequent human activity. Adjacent sage-scrub communities have been disrupted by bluff erosion and grading, while the smaller riparian community near the Santa Ana River has been impacted by efforts to channelize the river for flood protection purposes.

In spite of these alterations, examples of all three communities (grassland, sage scrub, and riparian) can be found in limited amounts within the present City limits. A detailed description of these and other plant communities broken down into finer categories can be found in the Fairview Park Master Plan. This document includes descriptions of sensitive species and habitats not included below, and it is hereby incorporated by reference.

#### Grasslands

Grasslands are generally found at low elevations on flat plains or gentle hillsides having a deep layer of clay-bearing soil. A list of plants generally associated with this community is included below in Table 4.4-1 (Plants of the Grassland Community). Species most common to the Fairview Park and river lowlands are non-native species and include Russian thistle (*Salsola kall*), Curly Dock (*Rumex crispus*), mustard (*Brassica* ssp.), Mexican tea (*Chenopodium ambrosiodes*), Bermuda grass (*Cynodon dactylon*), brome grass (*Bromus* spp.), wild oat (*Avena fatua*), Italian rye (*Lolium multiflorium*), and clover (*Trifolium* sp.). Some native species also occur and include California buckwheat (*Eriogonum fasciculatum*), California poppy (*Eschscholzia californica*), shooting stars (*Dodecatheon clevelandii*), and California buttercup (*Ranunculus californicus*).

Table 4.4-1
Plants of the Grassland Community and Status in Planning Area

	s of the Grassiana Community and S		Confirmed	Possible
Common Name	Scientific Name	Status	Observation	Present
Desert needlegrass	Achnatherum speciosum	-	X	
Red-skinned Onion	Allium haematochiton	-	X	
Southwestern beardgrass	Andropogon glomeratus	-	Χ	
California sagebrush	Artemesia californica	-	Χ	
Coulter's saltbrush	Atriplex coulteri	CNPS 1B		Χ
Slender wild oat	Avena barbata	-	Χ	
Wild oat	Avena fatua	-	Х	
Black mustard	Brassica negra	-	Χ	
Red brome	Bromus rubens	-	Х	
Poverty brome	Bromus sterilis	-	Χ	
Prostrate spineflower	Chorizanthe procumbens	CNPS 4		
Wild hyacinth	Dichelostemma pulchellum	-	Χ	
Shooting stars	Dodecatheon clevelandii	-	Χ	
California buckwheat	Eriogonum fasciculatum	-	Χ	
White-stemmed filaree	Erodium moschatum	-	Χ	
California poppy	Eschscholzia californica	-	Χ	
California Chocolate lily	Fritillaria biflora	-	Χ	
Southern tarplant	Hemixonia Parryi ssp. Australis	CNPS 1B, FSC		Х
Vernal barley	Hordeum intercedens	CNPS 3		Χ
Wild barley	Hordeum murinum	-	Χ	
Goldentop grass	Lamarckia aurea	-	Х	
Coulter's goldfields  Lasthenia glabrata ssp. Coulter's		CNPS 1B, FSC		Х
Hairy peppergrass	Lepidium nitidum	-	Х	
Small-flowered microseris	Microseris douglasii var. platycarpha	CNPS 4		Χ
Coastal prickly-pear	Opuntia littoralis	-	Χ	
California buttercup	Ranunculus californicus	-	Χ	
Johnson grass	Sorghum halepense	-	Χ	
Johnny jump-ups	Viola pendunculata	-	Χ	

FSC: Federal Species of Concern

CNPS 1B: California Native Plant Society List for Plants Rare or Endangered in California and Elsewhere

Source: Biological Consulting Services for the Conservation Element of the Costa Mesa General Plan, prepared by BonTerra Consulting, May 22, 2000. Species status updated from CDFW CNDDB, November 2015.

CNPS 3: California Native Plant Society List for Plants About Which We Need More Information – A Review List

CNPS 4: California Native Plant Society List for Plants of Limited Distribution – A Watch List

# Sage Scrub

Sage scrub communities, consisting of grayish-green scrub usually less than three feet high, can be found at elevations less than 3,000 feet on foothills and coastal bluffs and canyons. The most prevalent form of sage in the Costa Mesa area is the coastal sage. Plants most commonly associated with this community are noted in Table 4.4-2 (Plants of the Sage Scrub Community).

Table 4.4-2
Plants of the Sage Scrub Community and Status in Planning Area

	s of the Sage Scrub community and	otatus III I Iai	Confirmed	Possible
Common Name	Scientific Name	Status	Observation	Present
Red-skinned Onion	Allium haematochiton	-	Χ	
Aphanisma	Aphanisma blitoides	CNPS 1B,		Χ
·	·	FSC		
California sagebrush	Artemesia californica	-	X	
Coulter's saltbrush	Atriplex coulteri	CNPS 1B		Χ
South coast saltscale	Atriplex pacifica	CNPS 1B,		Χ
		FSC		
Parish's brittlescale	Antriplex parishii	CNPS 1B,		Χ
		FSC		
Davidson's saltscale	Atriplex serenana var. davidsonii	CNPS 1B		Χ
Slender wild oat	Avena barbata	-	Х	
Wild oat	Avena fatua	-	Х	
Goldenstar	Bloomeria crocea	-	Χ	
Wavy-leaved soap plant	Chlorogalum pomeridianum	-	Χ	
Buckwheat	Eriogonum fasciculatum	-	Χ	
Decumbent goldenrush	Isocoma menziesii var. decumbens	CNPS 1B		Χ
Robinson's pepper-grass	Lepidium virginicum var. Robinsonii	CNPS 1B		Χ
Deerweed	Lotus scoparius	-	Χ	
Laurel sumac	Malosma laurina	-	Χ	
Melic grass	Melica frutescens	-	Χ	
Lemonadeberry	Rhus integrifolia	-	X	
California wild rose	Rosa californica	-	X	
White sage	Salvia apiana	-	Χ	
Purple sage	Salvia leucophylla	-	X	
Black sage	Salvia mellifera	-	X	
Hedge mustard	Hedge mustard Sisymbrium officinale		X	

FSC: Federal Species of Concern

CNPS 1B: California Native Plant Society List for Plants Rare or Endangered in California and Elsewhere

Source: Biological Consulting Services for the Conservation Element of the Costa Mesa General Plan, prepared by BonTerra Consulting, May 22, 2000. Species status updated from CDFW CNDDB, November 2015.

## Riparian

Riparian communities are associated with relatively permanent springs, streams, seeps and ponds. Within Costa Mesa such communities are found around the small pond near the Santa Ana River and Victoria Street, in the northwestern portion of the Fairview Park and along the bottom of Canyon Park. Because of the availability of water, these areas provide favorable habitats for a large variety of trees, shrubs and grasses. Such communities are generally characterized by the species identified in Table 4.4-3 (Plants of the Riparian Community).

Table 4.4-3
Plants of the Riparian Community and Status in Planning Area

i idi	its of the Riparian community and st	atas III i lailii	J	
	0.1.117.11	<b>3</b> 1. 1	Confirmed	Possible
Common Name	Scientific Name	Status	Observation	Present
Big-leaf maple	Acer macrophyllum	-	Χ	
White alder	Alnus rhombifolia	-	Х	
Mule fat	Baccharis salicifolia	-	Х	
Santa Barbara morning-glory	Calystegia sepium ssp. Binghamiae	CNPS 1B		X (Historic)
Salt marsh bird's-beak	Cordylanthus maritimus ssp. Maritimus	FE, SE		X (Historic)
Los Angeles sunflower	Helianthus nuttallii ssp. Parishii	FSC		X (Historic)
Western sycamore	Plantanus racemosa	-	Х	
Sword fern	Polystichum munitum	-	Х	
Fremont cottonwood	Populus fremontii	-	Х	
Canyon oak	Quercus chrysolepis	-	Х	
Castor bean	Ricinus communis	· · · · · · · · · · · · · · · · · · ·		
Arroyo willow	Salix lasiolepis	-	Х	
Mexican elderberry	Sambucus Mexicana	-	Х	
Coastal bulrush	Scirpus robustus	-	Х	
Posion oak	Toxicodendron diversilobum	-	Х	
Broad-leaved cattail	Typha latifolia	-	Х	
California bay laurel	Umbellularis californica	-	Х	
Desert wild grape	Vitis giardiana	-	Х	

FE: Federally-listed endangered

FSC: Federal Species of Concern

SE: State-listed endangered

CNPS 1B: California Native Plant Society List for Plants Rare or Endangered in California and Elsewhere

Source: Biological Consulting Services for the Conservation Element of the Costa Mesa General Plan, prepared by BonTerra

Consulting, May 22, 2000. Species status updated from CDFW CNDDB, November 2015.

### Non-Native Vegetation

Subsequent urban development and agricultural production have introduced a wide variety of non-native vegetation to the area. These species were imported as agricultural crops (citrus fruits, avocados, grapes), for protection from winds (eucalyptus) and as ornamental landscaping. A majority of these trees, shrubs and flowers were brought from the Mediterranean region, South Africa, South America, Central America, Australia and Eastern Asia, as well as Northern California and the Eastern United States. Canary Island Pine, a variety of species of eucalyptus, deodar, podocarpus, pyracantha, azaleas and pittosporum are only a few examples. Today, species such as these are the dominant forms of vegetation within Costa Mesa.

#### Fauna

Based on paleontologic records, Orange County was inhabited by a wide variety of wildlife ranging from bison, jaguars, camels, wolves, ground sloths, bears and sabre-toothed cats to shrews and rats. The skeletal remains of a nearly perfectly preserved mastodon was excavated in 1962 near the intersection of Boa Vista Drive and Nevis Circle. However, as was the case of Costa Mesa's vegetative heritage, today's range of wildlife has been substantially reduced to those species which have adapted to close human contact. What remains today is an abbreviated predator-prey food chain consisting of squirrels, voles, white-tail kites, red-tail hawks, occasional coyotes, and numerous dogs and cats. The most noticeable form of wildlife is the California ground squirrel (*Spermophilus beecheyl*).

Some species of special interest that inhabit open spaces within the City include the burrowing owl (*Speotyto cuniculara*), an indigenous species that uses abandoned rodent burrows for nests; the San Diego fairy shrimp (*Branchinecta sandiegonensis*) which occupies vernal pools in Fairview Park; the Belding's savannah sparrow (*Passerculus sandwichensis belding*) which resides year-round in coastal salt marshes of Southern California, and the

Least Bell's vireo (*Vireo bellii pusillus*) which inhabits riparian and terrestrial fields, shrubland, chaparral, and woodlands. These special status species are discussed further below.

There is a direct relationship between the type and diversity of plant material found in an area and the type and diversity of wildlife supported by this vegetation. The plant communities on the County of Orange's Talbert Nature Preserve and the City's Fairview Park sites offer seasonally important sources of food for migratory birds, occasional nesting and feeding sites for sea and shore birds. In the same area, the bluffside vegetation and thickets provide habitats for more reclusive species of birds, mammals, and reptiles.

Some of these species which inhabit the remaining undeveloped lands within Costa Mesa are unique and of special interest. An example is the burrowing owl (*Speotyto cuniculara*). Observations of the owls have been reported on the Costa Mesa Golf Course and Country Club and on the slopes of the Corona del Mar Freeway (SR-73). The burrowing owl is a wild indigenous species of predatory bird that uses abandoned rodent burrows for nests. It is currently on the Audubon Society Blue List of rare birds and is a California Species of Special Concern.

Two other species that are becoming increasingly rare in the area occupy the County's parks and City's Fairview Park. The first, Coast horned lizard (*Phrynosoma loronatum*), is extremely rare in this area. Second is the reclusive trapdoor spider, found along the bluff edge feeding on small ground-dwelling insects. These spiders are found in higher concentrations on the park site than elsewhere in Orange County. Provisions to retain a natural area for the spiders are included in the development plans for the park.

One sensitive species that frequents Costa Mesa is the California least tern (*Sterna albifrons*), included on the State and Federal list of endangered species. It is also designated as a California fully protected species. Although the primary nesting sites for the least tern are located farther south at the mouth of the Santa Ana River, the pond south of Victoria Street provides an occasional feeding area. The pond is of such importance that it has been proposed as an "essential habitat" for the least tern colony by the United States Department of Interior, Fish and Wildlife Service.

Based on biological studies prepared as part of the Fairview Park Master Plan, numerous other sensitive species have been found at the park. Detailed accounts of these species found in that document are hereby incorporated by reference. A general list of wildlife species which are known, or are presumed to inhabit Costa Mesa, is provided in Table 4.4-4, Species List of Mammals, Reptiles and Amphibians and Table 4.4-5 (Species List of Birds).

Table 4.4-4 Species List of Mammals, Reptiles and Amphibians and Status in Planning Area

Common Name	Scientific Name	Status	Confirmed Observation	Possible Present
	Species List of Mamma	als		
Coyote	Canis latrans	-	X	
Virginia opossum	Didelphis virginiana	-	X	
Black-tailed jackrabbit	Lepus californicus	-	X	
Striped skunk	Mephitis mephitis	-	X	
California vole	Microtus californicus	-	X	
House mouse	Mus musculus	-	X	
Long-tailed weasel	Mustela frenata	-	X	
Dusky-footed woodrat	Neotoma fuscipes	-	X	
Desert woodrat	Neotoma lepida	-	X	
Cactus mouse	Peromyscus eremicus	-		Χ
California mouse	Peromyscus californicus	-	X	
Deer mouse	Peromyscus maniculatus	-		Χ
Western harvest mouse	Reithrodontymos megalotis			Χ
Broad-footed mole	Scapanus latimanus	-		Χ
Ornate shrew	Sorex ornatus	-	Х	_

Table 4.4-4 Species List of Mammals, Reptiles and Amphibians and Status in Planning Area

			Confirmed	Possible
Common Name	Scientific Name	Status	Observation	Present
California ground squirrel	Spermophilus beecheyi	-	Χ	
Desert cottontail	Sylvilagus audobonii	-	Χ	
Botta's pocket gopher	Thomomys bottae	-	Х	
	Species List of Reptiles and Ar	nphibians		
Silvery legless lizard	Anniella pulchra pulchra	FS, CSC		Χ
Black-bellied slender	Batrachoseps nigriventris	-	Χ	
salamander	. 0			
Western toad	Bufo boreas	-	Χ	
Coastal western whiptail	Cnemidophorus tigris multiscutatis	-		Χ
Western skink	Eumeces skiltonianus	-		Х
San Diego alligator lizard	Gerrhonotus multicarinatus webbi	-		Χ
Pacific tree frog	Hyla regilla	-	Х	
Common kingsnake	Lampropeltis getulus	-	Х	
Coast horned lizard	Phyrnosoma coronatum	-	Х	
San Diego Gopher snake	Pituophis melanuoleucus annectens	-	X	
Bullfrog	Rana catesbeiana	-		Χ
Coast patch-nosed snake	Salvadora hexalepis	-		Χ
Western fence lizard	Sceloporus accidentalis	-	X	
Western terrestrial garter			Χ	
snake	. ,			
Side-blotched lizard	Uta stansburiana	-	Х	
FS: Forest Service Sensitive Speci	es CSC: State-listed California Species of S	pecial Concern	FE: Federally-Listed	Endangered

Source: Biological Consulting Services for the Conservation Element of the Costa Mesa General Plan, prepared by BonTerra Consulting, May 22, 2000. Species status updated from CDFW CNDDB Special Animals List, January 2015

Table 4.4-5
Species List of Birds and Status in Planning Area

Common Name	Scientific Name	Status	Confirmed Observation	Possible Present
Sharp-shinned hawk	Accipiter striatus	=	X	
Cooper's hawk	Accipiter cooperii	-	X	
Spotted sandpiper	Actitis macularia	-	X	
Mallard	Anas platyrhyncho	-	X	
Cinnamon teal	Anas cyanoptera	-	X	
American widgeon	Anas Americana	-	X	
Green-winged teal	Anas crecca	-	Х	
Northern shoveler	Anas clypeata	-	X	
Greater white-fronted goose	Anser albifrons	-	Х	
American pipit	Anthus reubescens	-	X	
Great blue heron	Ardea Herodias	-	Х	
Burrowing owl	Athene cunicularia	CSC	Х	
Lesser scaup	Aythya affinis	-	Х	
Canvasback	Aythya valisineria	-	Х	
Brant	Branta bernicla	CSC	X	
Bufflehead	Bucephala albeola	-	Χ	
Red-tailed hawk	Buteo jamaicensis	-	Х	
Western sandpiper	Calidris mauri	-	Χ	
Sanderling	Calidris alba	-	Χ	
Dunlin	Calidris alpine	-	Χ	

Table 4.4-5 Species List of Birds and Status in Planning Area

	Species List of Birds and Status in Planning Area  Confirmed Possible					
Common Name	Scientific Name	Status	Observation	Present		
Anna's hummingbird	Calypte anna	-	X			
Cactus wren	Campylorhynchus brunneicapillus	-	Χ			
Lesser goldfinch	Carduelis psaltria	-	Χ			
House Finch	Carpodacus mexicanus		Χ			
American goldfinch	Carudelis tristis		Χ			
Turkey vulture	Cathartes aura	-	Χ			
Hermit thrush	Catharus guttatus	-	Χ			
Willet	Catoptrophorous semipalmatus	-	Χ			
Belted kingfisher	Ceryle alcyon	-	Χ			
Semipalmated plover	Charadrius semipalmatus	-	Χ			
Killdeer	Charadrius vociferous	-	Χ			
Western snowy plover	Charadrius alexandrinus nivosus	FT, CSC	Χ			
Marsh wren	Cistothoris palustris	-	Χ			
Northern flicker	Colaptes auratus	-	Χ			
American crow	Corvus brachyrhynchos	=	Χ			
Yellow-rumped warbler	Dendroica coronate	-	Χ			
White-tailed kite	Elanus leucurus	-	Χ			
American kestrel	Falco sparverius	-	X			
American coot	Fulica Americana	-	X			
Common yellowthroat	Geothlypis trichas	_	X			
Black-necked stilt	Himantopus mexicanus	-	X			
Dark-eyed junco	Junco hyemalis	_	X			
Loggerhead shrike	Lanius ludovicianus	CSC	X			
Bonaparte's gull	Larus Philadelphia	-	X			
Ring-billed gull	Larus delawarensis	-	X			
Long-billed dowitcher	Limnodromus scolopaceus	_	Λ			
Short-billed dowitcher	Limnodromus griseus		Χ			
	Melospiza melodia	-				
Song sparrow Lincoln's sparrow	Melospiza lincolnii	-	<u>Λ</u> Χ			
		-	<u>Λ</u> Χ			
Northern mockingbird	Mimus polyglottos	-				
Ruddy duck	Oxyura jamaicensis	-				
Belding's savannah sparrow	Passerculus sandwhichensis	CSC	Χ			
California towhee	(spp. Beldingi)		X			
	Pipilo crissalis	-				
Spotted towhee	Pipilo maculates	-	X X			
Eared grebe	Podiceps nigricollis	-				
Pied-billed grebe	Podilymbus podiceps	-	X			
Blue-grey gnatcatcher	Polioptila caerulea	-	X			
Bushtit	Psaltriparus minimus	-	X			
American avocet	Recurvirostra Americana	-	X			
Rugy-crowned kinglet	Regulus calendula	-	X			
Say's phoebe	Sayornis saya	-	X			
Black phoebe	Sayornis nigricans	-	X			
Black-chinned sparrow	Spizella artogularis	-	X			
California least tern	Sterna antillarum browni	FE, SE, FP	X			
Spotted dove	Streptopelia chinensis	-	Χ			
European starling	Stumus vulgaris	-	Χ			
Western meadowlark	Sturnella neglecta	-	Χ			
Bewick's wren	Thryomanes bewickii	-	Χ			

Table 4.4-5
Species List of Birds and Status in Planning Area

Common Name	Scientific Name	Status	Confirmed Observation	Possible Present	
Lesser yellowlegs	Tringa flavipes	-	X		
Least Bell's vireo	Vireo bellii pusillus	FE, SE	X		
Mourning dove	Zenaidura macroura	-	X		
Golden-crowned sparrow	Zonotrichia atricapilla	-	X		
White-crowned sparrow	Zonotrichia leucophrys	-	X		
FE: Federally-listed Endangered	FT: Federally-listed Threatened SE: State-	-listed Endangere	d		
ST: State-listed Threatened CSC: State-listed California Species of Special Concern FP: State Fully Protected					
	rices for the Conservation Element of the Costa 1 s status updated from CDFW CNDDB Special Ar			та	

# Special Status Wildlife, Plants, and Habitat

Special status wildlife species are those listed under federal or State Endangered Species acts, listed as *Species of Special Concern* by the State, protected under official conservation programs (e.g., Multi-Species Conservation Programs), and/or those designated by local legislation as requiring protection. Special status plants are those listed under federal or State endangered species acts, protected under official conservation programs (e.g., Multi-Species Conservation Programs), and/or considered *sensitive*, such as those listed by the California Native Plant Society (CNPS). The CNPS utilizes a ranking system to define the status of sensitive plant species, as follows:

- 1A: Plants presumed extinct in California
- 1B: Plants that are rare, threatened, or endangered in California and elsewhere
- 2: Plants that are rare, threatened, or endangered in California but more common elsewhere
- 3: Plants about which the CNPS needs more information. This is the review list.
- 4: Plants of limited distribution. This is the watch list.

The California Natural Diversity Database (CNDDB) inventories occurrences of rare, threatened, endangered, and sensitive animals, plants, and natural communities in California. The CNDDB inventories both aquatic and terrestrial natural communities that are extremely high quality, very limited distribution, or threatened. The CNDDB inventory for the Newport Beach 7.5' Quadrangle provides species occurrences within and near the planning area. Species occurrences and status within and near the planning area are summarized in Table 4.4-6 (CNDDB Species Occurrences). According to the CNDDB, 80 plant and animal species and four natural communities occur within a five-mile radius of the Costa Mesa planning area. Of these, only 10 species and two natural communities are located within the planning area and all occurrences are found either in Fairview Park, Talbert Regional Park or the adjacent wildlife preserve. The 10 species include three birds, a fairy shrimp, and six plants. The natural communities are the southern coastal salt marsh and the southern cottonwood willow riparian forest. Additional information regarding the 10 species and two natural communities is provided below. Information related to species listing is provided in the *Planning and Regulatory Framework* section below.

## Wildlife

#### Belding's Savannah Sparrow

Belding's savannah sparrow (*Passerculus sandwichensis beldingl*) is one of few species of birds that reside year-round in coastal salt marshes of Southern California. It inhabits coastal salt marshes from Santa Barbara south through San Diego County. It nests in pickleweed (*salicornia virginica*) on and about the margins of tidal flats. Locally it is known from the Santa Ana River mouth.

Table 4.4-6
CNDDB Species Occurrences

Last Seen	Species	Donula	tion Status	Listing Status		
Last seem	Species	Popula	liuii Status	USFWS	CDFG	CNPS
2006	Burrowing Owl	Presumed	present	-	SSC	-
2002	Belding's Savannah Sparrow	Presumed	present		E	-
2014	Least Bell's Vireo	Presumed	present	E	E	-
2014	San Diego Fairy Shrimp	Presumed	present	E	-	-
2015	San Diego Button- Celery	Presumed present		E	E	1B.1
2015	Southern Tarplant	Presumed	present	-	-	1B.1
1993	Coulter's Goldfields	Presumed	absent	-	-	1B.1
2010	Mud Nama	Presumed	present	-	-	1B.2
1932	Chaparral Sand Verbena	Presumed	absent	-	-	1B.1
2015	Prostrate Vernal Pool Navarretia	Presumed present		1	-	1B.1
Source: CDFW 2015						
USFWS E Endangered		_	CDFG Endangered			

Threatened

SSC Species of Special Concern

#### **CNPS Categories**

Τ

Threatened

Candidate Species

- 1A Plants presumed extinct in California
- 1B Plants that are rare, threatened, or endangered in California and elsewhere
- 2 Plants that are rare, threatened, or endangered in California but more common elsewhere
- 3 Plants about which the CNPS needs more information. This is a review list.
- 4 Plants of limited distribution. This is a watch list.

#### **CNPS Threat Code Extensions**

None: Plant is lacking threat information 2: Fairly endangered in California 3: Not very endangered in California

#### Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a small, long-legged owl and a California *Species of Special Concern* found throughout western and central North America. Habitat includes open grasslands such as prairies, plains, and savanna although it can also be found in any open space, such as a vacant lots. Burrowing owls are opportunistic residents nesting and roosting in burrows dug by other mammals or in other burrow-like features. Although most burrowing owl breeders are migratory, both locally and long distance, Southern California populations are generally considered resident. Threats to the burrowing owl include habitat loss, degradation, and fragmentation. Particularly in western North America, eradication of prairie dog populations, conversion of rangeland to agricultural land, and suburbanization have contributed to population declines. Locally, this species has been reported within Fairview Park and on the slopes of the Corona del Mar Freeway (SR-73).

#### Least Bell's Vireo

Least Bell's vireo (*Vireo bellii pusillus*) is a small song bird listed as a State and federal endangered species. Habitat includes riparian and terrestrial fields, shrubland, chaparral, and woodlands. It is particularly found in dense brush, mesquite, willow-cottonwood forest, streamside thickets, scrub oak, moist woodlands, and woodland edges. Least Bells' vireo is migratory, migrating into Southern California near the end of March and leaving for the cape region of Baja California in late July to September, although some may overwinter in the U.S. Primary threats include loss of

habitat to urbanization and infrastructure projects and nest parasitism by cowbirds. Locally, this species has been reported within the Talbert Nature Preserve. No critical habitat for this species has been established within or near the planning area.

## San Diego Fairy Shrimp

The San Diego fairy shrimp (*Branchinecta sandiegonensis*) is a small aquatic crustacean generally visible in shallow pools (vernal pools) from January through March. Mature individuals lack a carapace (a hard outer covering of the head and thorax), and have a delicate elongated body, large stalked compound eyes and 11 pairs of swimming legs. They swim or glide gracefully upside down by means of complex wave-like beating movements of the legs that pass from front to back. The species is found in vernal pools located in Fairview Park. No critical habitat for this species has been established within or near the planning area.

#### **Plants**

# San Diego Button-Celery

The San Diego button-celery (*Eryngium aristulatum var. parishii*) is a member of the parsley family. It is a vernal pool plant that is found in San Diego Mesa hardpan and claypan vernal pools. The species is found in vernal pools located in Fairview Park (Calflora 2015).

#### Southern Tarplant

The southern tarplant (*Centromadia parryi ssp. australis*) is an annual herb in the sunflower family that is native to California. Its preferred habitat is valley and foothill grasslands near alkaline soils, and marsh and swamp margins (Calflora 2015). Locally the species is found in the Talbert Nature Preserve.

#### Coulter's Goldfields

Coulter's goldfields (*Lasthenia glabrata ssp. Coulteri*) is an annual herb in the aster family. It is associated with alkali sink, coastal salt marshes, and freshwater wetlands. The species has not been observed recently in the planning area and is presumed extirpated (Calflora 2015).

#### Mud Nama

The mud nama (*Nama stenocarpum*) is an annual or perennial herb in the borage family that is native to California. It is associated with freshwater wetlands and wetland-riparian habitats (Calflora 2015). Locally this species is known from Fairview Park.

## Chaparral Sand-Verbena

The chaparral sand-verbena (*Abronia villosa var. aurita*) is a short, hairy annual wildflower in the four o'clock family which grows in creeping prostrate masses along the ground. It is associated with coastal beach habitat and desert sands (Calflora 2015). It has not been observed recently in the planning area and is presumed extirpated.

#### Prostrate Vernal Pool Navarretia

The prostrate vernal pool navarretia (*Navarretia prostrate*) is an annual low-growing herb associated with vernal pools and moist places from Santa Barbara to San Bernardino Counties (Calflora 2015). Locally this species is known from the vernal pools at Fairview Park.

### Natural Communities

#### Southern Coastal Salt Marsh

The Southern Coastal Salt Marsh natural community is a wetland plant community that occurs sporadically along the Pacific Coast from Humboldt Bay to San Diego. This salt marsh type is found in bays, harbors, inlets, and other protected areas subject to tidal flooding. Plant species in this community are adapted to the saline conditions and low oxygen content typically found in the water-saturated soils. As a result of the demanding conditions, species diversity is relatively low. Typical plant species in this community include salt grass (*Distichlis spicata*), franconia (*Frankenia salina*), pickleweed and glasswort (*Salicornia* spp.), cordgrass (*Spartina foliosa*), and seep weed (*Suaeda californica*).

#### Southern Cottonwood-Willow Riparian Forest

This community is characterized as a tall, open, broad-leafed winter-deciduous riparian forest dominated by cottonwoods and willows. Vegetation within this community is predominantly composed of deciduous species. The tall riparian trees and dense understory result in almost full canopy cover. Typical tree species include Fremont cottonwood, several species of willow (arroyo, yellow, red), box elder, black walnut, sycamore, elderberry and coast live oak. Associated trees include big leaf maple, white alder, and valley oak. Shrubs include California blackberry, snowberry, toyon, and California rose.

## Wildlife Movement and Migratory Routes

Wildlife movement is essential to wildlife survival. Local movement is required for individuals seeking food, shelter, and mates. Long-range movement is necessary to satisfy the seasonal migratory needs of species to find favorable climatic conditions. Opportunities for movement are also essential for the dispersal of young to new homes. Opportunities for movement and migration are also important for gene flow, population recolonization, and range shifts. Movement corridors are particularly important for larger, terrestrial animals such as mountain lions, badgers, and bighorn sheep that require wide ranges to roam. Impediments to wildlife movement include roads, railroads, dams, urban development, and agriculture.

Migration behavior is the regularly occurring, seasonally oriented movement of a species. Migration may consist of short- or long-distance dispersal and one-and two-way migratory trips over time cycles consisting of hours to years. A migratory route is the geographic path a species takes as it acts on its migratory behavior. Aquatic species typically migrate along streams and rivers. Avian species utilize wetlands and other open space areas as resting and feeding nodes as they migrate. Groundborne species generally require wildlife corridors to migrate.

Southern California forms a portion of the Pacific Flyway, a generic term used to categorize the numerous and complex migratory routes used by bird species migrating from the Bering Strait to South America. Essentially, any waterbody or open space within the Pacific Flyway can serve as a travel node on a migratory path. Major California nodes include the Salton Sea, San Luis Reservoir, Mono Lake, and the Eel River. While the Least Bell's vireo is a migratory bird, the burrowing owl and Belding's savannah sparrow are both year round residents of the planning area. The Santa Ana River corridor presents an opportune candidate as a node on a migratory path due to the expanse of open space and water.

## Wetlands and Riparian Habitat

Wetlands are areas of soil that are saturated with moisture such as a swamp, marsh, or bog. A wetland is subject to Section 404 of the federal Clean Water Act (CWA) with the legal definition of a wetland defined under Title 33, Part 328.3(a) of the Code of Federal Regulations (CFR). Delineating a wetland is implemented through the US Army Corps of Engineers' (ACOE) Wetland Delineation Manual that includes identification of such things as the presence of hydrophytic vegetation, hydric soils, and wetland hydrology.<sup>1</sup>

Wetlands serve not only as nodes for avian and aquatic migratory routes but also provide a unique habitat for various species. The USFWS maintains the National Wetlands Inventory and Mapping System and according to the most recent data, the planning area contains riverine habitat along the Santa Ana River and Freshwater Emergent wetlands adjacent to the Santa Ana River in the southwestern portion of the planning area (USFWS NWI 2015).

Riparian habitat is composed of trees and other vegetation and physical features found on stream banks and floodplains associated with streams, lakes, and other bodies of water. Riparian habitat is unique in its support of an abundance of fish and wildlife species.

## Wildlife Nurseries

A native wildlife nursery includes facilities and protected habitat for the rehabilitation of injured or rare species for eventual release into the wild. No existing or proposed native wildlife nurseries have been documented within the planning area.

# Planning and Regulatory Framework

A variety of federal, State, and local regulations address sensitive plants and wildlife resources. These plans and programs have been enacted through federal, State, and local action, and are administered by agencies and special districts. The following paragraphs summarize the regulatory context that biological resources are managed within the planning area.

# Federal Endangered Species Act

The Federal Endangered Species Act (FESA) is administered by the United States Fish and Wildlife Service (USFWS) and was established to protect wildlife species and habitats from extinction and diminishment. FESA applies to federally listed species and habitat occupied by federally listed species. FESA Section 9 forbids acts that directly or indirectly harm listed species. Section 9 also prohibits "taking" of any species of wildlife or fish listed as endangered. These restrictions apply to all federal agencies and all persons subject to U.S. jurisdiction. Specifically, Section 9 (16 U.S.C. 1538) identifies prohibited acts related to endangered species and prohibits all persons, including federal, State and local governments, from "taking" listed species of fish and wildlife except as specified under the provisions for exemptions (16 U.S.C. 1539). The term *take* is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or an attempt to engage in any such conduct (16 U.S.C. 1532[18]).

#### Critical Habitat

Critical habitats are specific geographic areas, whether occupied by a species under FESA or not, that are essential for its conservation and that have been formally designated by a rule published in the Federal Register. Critical habitat receives protection under Section 7 of FESA through prohibition against destruction or adverse modification of critical habitat with regard to actions carried out, funded, or authorized by a Federal Agency. There is no critical habitat for the San Diego fairy shrimp in the planning area (USFWS 2000).

#### **Incidental Take Permits**

An incidental take permit is issued under Section 10(a)(1)(B) of the FESA to a non-federal party undertaking an otherwise lawful project that might result in the take of an endangered or threatened species. Application for an incidental take permit is subject to certain requirements including preparation by the permit applicant of a Habitat Conservation Plan (HCP). An HCP outlines ways of maintaining, enhancing, and protecting a given habitat type needed to protect species. The HCP usually includes measures to minimize impacts and may include provisions for permanently protecting land, restoring habitat, and relocating plants or animals to another area. The planning area is contained within the Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) or the County of Orange which was adopted in 1996 (County of Orange 1996). Specifically, the planning area is covered under the County of Orange Central and Coastal Subregion (Parts I and II: NCCP/HCP). Even though the City of Costa Mesa is within the NCCP/HCP plan boundary, the City is not a signatory to the plan implementation agreement. Not being a signatory means that any projects receiving development permits in the City would not be covered for incidental take of state or federally-listed species addressed in the NCCP/HCP. Talbert Regional Park and Talbert Nature Preserve located within the City boundaries is included within the boundaries of an identified NCCP/HCP habitat reserve as an "outlying island" (County of Orange 1996). The park, managed by the County of Orange, provides important biodiversity habitat along the Santa Ana River.

# California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code, Section 2050 et seq.) generally parallels the main provisions of FESA and is administered by the California Department of Fish and Wildlife (CDFW). Under CESA, the term *endangered species* is defined as a species of plant, fish, or wildlife that is "in serious danger of becoming extinct throughout all, or a significant portion of its range" and is limited to species or subspecies native to California. CESA prohibits the taking of listed species, except as provided in State law. Specifically, section 2053 of CESA prohibits projects that would jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat that would prevent jeopardy. Any future development or redevelopment in the planning area that has the potential to affect wildlife is subject to the restrictions contained in CESA.

## **Natural Community Conservation Planning Act**

The Natural Community Conservation Planning (NCCP) program of the CDFW takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. The NCCP program, established pursuant to the 1991 NCCP Act (Fish and Game Code 2003) is broader in its orientation and objectives than the CESA or FESA. While the CESA and FESA are designed to identify and protect species that have already declined significantly in numbers, the NCCP program seeks to prevent species listing by focusing on the long-term stability of wildlife and plant communities. As stated above under incidental take permits, the planning area is within the boundaries of the County of Orange NCCP/HCP, but the City is not a participant in the plan (Natural Communities Coalition 2015). The City's Talbert Nature Preserve, however, is included as an area that could support future NCCP/HCP habitat reserves (CM 2008).

#### Native Plant Protection Act

California's Native Plant Protection Act (NPPA) (California Fish and Game Code, Sections 1900-1913) requires all State agencies to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use that would adversely impact listed plants. This requirement allows CDFW to salvage listed plant species that would otherwise be destroyed.

## **Streambed Alteration Agreements**

The CDFW, through provisions of the Fish and Game Code Sections 1600-1603, is empowered to issue agreements (Streambed Alteration Agreements) for projects that would "divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake" (Fish and Game Code Section 1602[a]). Streams and rivers are defined by the presence of a channel bed, banks, and intermittent flow. The limits of CDFW jurisdiction are also based on riparian habitat and may include wetland areas that do not meet U.S. Army Corps of Engineers (ACOE) criteria for soils and/or hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream away from frequently saturated soils).

# Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703) implements various treaties and conventions between the U.S., Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Under the MBTA, the taking, killing or possessing of migratory birds is unlawful, unless expressly permitted by other federal regulations. The MBTA provides that it is unlawful to pursue, hunt, take, capture or kill any migratory bird, part, nest, egg or product. The MBTA requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (1 February to 31 August, annually). Migratory bird species protected by this act are defined in Title 50, CFR Section 10.13.

#### Clean Water Act

Section 401 of the CWA requires an applicant to obtain certification for any activity that may result in a discharge of a pollutant into waters of the United States. As a result, proposed fill in waters and wetlands requires coordination with the appropriate State Regional Water Quality Control Board (RWQCB) that administers Section 401 and provides certification. The RWQCB also plays a role in review of water quality and wetland issues, including avoidance and minimization of impacts. Section 401 certification is required prior to the issuance of a Section 404 permit, as discussed below.

Under Section 404 of the CWA, the U.S. Army Corps of Engineers (ACOE) has jurisdiction *over* Wetlands and Waters of the United States. Permitting of activities that could discharge fill or dredge materials or otherwise adversely modify wetlands or other waters of the United States and associated habitat is required. Permits authorized by ACOE under the Act typically involve mitigation to offset unavoidable impacts on wetlands and other waters of the United States in a manner that achieves no net loss of wetland acres or values.

# Local Regulations

# City of Costa Mesa Planning, Zoning and Development Code

The City has adopted an ordinance regulating the preservation of landmark trees, as codified in Title 15, Chapter V. Parkway Trees, Section 15-138 of the Planning, Zoning, and Development Code. On a voluntary basis, residents can nominate trees that have historical significance, are a rare or unusual species, or which have a unique form or shape that currently contribute to the skyline or have the potential to do so in the future. If approved by the Parks, Recreation Facilities, and Parkways Commission, nominated trees are then placed on the landmark tree list and warrant certain protections.

# Thresholds of Significance

Implementation of the General Plan Amendments would result in a significant impact if they:

- A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
- B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.
- C. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- F. Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.

# **Environmental Impacts**

IMPACT 4.3.A Impacts to special status species and their habitat would be less than significant with implementation of draft General Plan policies and Mitigation Measure 4.3.A-1.

Impacts to special status species would be considered significant if development under the proposed General Plan Update converts vacant lands that have a reasonable potential to support special status species or habitat to developable lands. A reasonable potential for occurrence includes relatively recent sightings and presence of appropriate habitat for the species.

With the exception of the Segerstrom Home Ranch and Sakioka Lot 2 sites, which are currently in active agricultural use, the properties affected by the proposed General Plan land use changes are already developed and located within highly urbanized areas, with little opportunity to support native wildlife or special status species. The active agricultural activities have resulted in the removal of native habitat that could support sensitive species. The CNDDB identified four animal species and six plant species that have occurred or do occur in the planning area. According to the CNDDB search of the planning area, two of the plant species are presumed to be absent from the planning area (see Table 4.3-6). Additionally, all special status species occurrences were restricted to Fairview Park and Talbert Regional Park and Nature Preserve due to the presence of natural habitat and the close proximity to the Santa Ana River. Except for the burrowing owl, no special status species have a reasonable potential to occupy lands that are subject to the proposed general plan land use changes. Furthermore, within the entire planning area, goals and policies contained in the Conservation Element promote the conservation of important biological resources (see Goal and Objective CON-1 and Policies C-1.A to E, and C-1.G). Impacts on special status species, other than the burrowing owl, are considered less than significant.

#### GOAL CON-1: PRESERVED AND RESTORED NATURAL COASTAL HABITAT AND LANDFORMS.

It is the goal of the City of Costa Mesa to provide its citizens with a high quality environment through the conservation of resources, including land, water, wildlife, and vegetation; and protection of areas of unique natural beauty. Continue to preserve and restore natural habitat and associated plants and wildlife including wetlands, riparian areas, and other sensitive biological resources. Carefully balance natural lands, habitat, and protection of multiple species with the need to accommodate development.

Objective CON-1. Evaluate the preservation of the City's existing biotic resources in as ecologically viable and natural a condition as possible, and restore and integrate these resources into the urban environment, where feasible.

## Habitat and Biological Resources Protection and Restoration

- Policy CON-1.A: Natural habitat is essential to ensuring biodiversity and protecting sensitive biological resources. Protect these areas and consult with the California Department of Fish and Wildlife, Orange County Water District, Orange County Parks, and other regional agencies to identify areas for special protection, and establish appropriate protection measures for these areas.
- Policy CON-1.B: Contribute to regional biodiversity and the preservation of rare, unique, or sensitive biological resources by maintaining functional wildlife corridors and habitat linkages.
- Policy CON-1.C: Coordinate with the United States Fish and Wildlife service, the California Department of Fish and Wildlife, and other regulatory agencies to mitigate project impacts affecting open and natural spaces.
- Policy CON-1.D: Promote and protect native plant species within Fairview Park and remove and control the spread of invasive species, including plants, animals, and fungi.
- Policy CON-1.E: Ensure that all future development is reviewed with regard to protecting natural topography and bluffs to preserve and enhance Costa Mesa's natural beauty.

One species of particular concern that has been sighted in the planning area is the burrowing owl. Although the owl's occurrence was documented in Fairview Park, it is known to nest in existing burrows, culverts, or other appropriately sized holes found on vacant land. This allows it to occur theoretically on any vacant site in the planning area. Any future development on vacant land pursuant to the proposed Land Use Element could potentially impact this species, including future development of the Segerstrom Home Ranch and Sakiota Lot 2 sites, which are currently in active agricultural use. Due to this, Mitigation Measure 4.3.A-1 is recommended to reduce the impact on burrowing owls to less than significant.

IMPACT 4.3.B No impact to any riparian area or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS would occur as a result of implementation of the General Plan Amendments.

The CNDDB identified two sensitive natural communities within the planning area: Southern Cottonwood Willow Riparian Forest within the Santa Ana River and Southern Coastal Salt Marsh found in Talbert Regional Park. In addition, vernal pools are present in Fairview Park. The proposed General Plan Amendments do not propose any land use changes that would impact these areas. No impact to these sensitive habitats would occur.

IMPACT 4.3.C No impact to Section 404 wetlands would occur as a result of implementation of the General Plan Amendments.

No wetlands located within the planning area are subject to land use changes. All wetlands occur along the edge of the Santa Ana River within dedicated parklands and consists of riverine habitat along the Santa Ana River and Freshwater Emergent wetlands adjacent to the Santa Ana River in the southwestern portion of the planning area.

Vernal pool wetlands occur in Fairview Park. Therefore, Implementation of the proposed General Plan Amendments would not impact any wetlands as defined by Section 404 of the Clean Water Act.

IMPACT 4.4.D No impact to wildlife corridors or any wildlife nurseries would occur as a result of implementation of the General Plan Amendments.

The amended General Plan Land Use Plan addresses five new Overlay Zones and one new land use designation. None of these would result in land use changes that could fragment the Santa Ana River and freshwater emergent wetlands adjacent to the Santa Ana River that act as a wildlife corridor because all amended planning zones are well away from this area. Therefore the project would not impede its use as local or migratory wildlife corridors. There are no known wildlife nurseries in the planning area. No impacts would occur.

IMPACT 4.3.E No impact related to conflicts with the proposed General Plan Amendments and other existing policies, regulations, or standards would occur.

Development pursuant to the amended General Plan Land Use Plan would be required to comply with proposed General Plan policies and existing City policies related the protection of biological resources. In addition to the General Plan policies of the Conservation Element, new and existing development must comply with the Zoning ordinance related to the preservation of landmark trees (see above under Local Regulations). As a result, the project would not conflict with any City policies, regulations, or standards designed to protect biological resources applicable to the planning area.

IMPACT 4.3.F No impact related to conflicts between the proposed General Plan Amendments and any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan would occur.

None of the land use changes proposed would conflict with the County of Orange NCCP/HCP because none of the changes apply to properties within the NCCP/HCP. As described above, the City of Costa Mesa is not a participant to the NCCP/HCP; however, proposed reserve lands occur within the City's jurisdiction in the Talbert Nature Preserve. Reserves are also proposed in Talbert Regional Park, which is under the jurisdiction of the County of Orange (Natural Communities Coalition 2015). The revised Fairview Park Master Plan (CM 2008) recommends that 111 acres of habitat restoration areas within the park ultimately be incorporated into the Orange County NCCP/HCP (CM 2008).

# Mitigation Measures

MITIGATION 4.3.A-1 A focused survey for burrowing owls shall be conducted by a qualified professional biologist for any new development project proposed on a vacant site of two acres or larger and with a landscape of annual and perennial grasslands, desert, or arid scrubland with low-growing vegetation or agricultural use or vegetation. The purpose of

the survey is to determine if burrowing owls are foraging or nesting on or adjacent to the project site. If surveys confirm that the site is occupied habitat, mitigation measures to minimize impacts to burrowing owls, their burrows, and foraging habitat shall be identified. The results of this survey, including any mitigation recommendations, shall be incorporated into the project-level CEQA compliance documentation. Owl surveys and approaches to mitigation shall be in accordance with the Staff Report on Burrowing Owl Mitigation, issued by the California Department of Fish and Wildlife on March 7, 2012 (CDFW 2012).

# Level of Impact with Mitigation Incorporated

Impacts associated with the potential use on the Segerstrom Home Ranch and Sakiota Lot 2 parcels by burrowing owls would be less than significant with incorporation of Mitigation Measure 4.3.A-1. All other impacts do not require mitigation.

# References

Bon Terra Consulting, 2000. *Biological Consulting Services for the Conservation Element of the Costa Mesa General Plan*, prepared by BonTerra Consulting, May 22, 2000.

Calflora. 2015: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. [web application]. 2015. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/ (Accessed: Nov 19, 2015).

California Department of Fish and Wildlife. 2012. Staff Report on Burrowing Owl Mitigation, March 7, 2012.

California Department of Fish and Wildlife. 2015. CNDDB Search, November 2015.

Costa Mesa. 2008. *City of Costa Mesa Fairview Park Master Plan*, March 1998, Revised February 2001 and November 2002, updated November 2008.

Department of the Interior, U.S. Fish & Wildlife Service, Carlsbad Fish and Wildlife Office, 2000. *Critical Habitat Designation for Endangered San Diego Fairy Shrimp, SC-G 00-173*, Contact: Andy Yuen, Jim Bartel, Nancy Gilbert, or Jane Hendron - 760/431-9440. October 17, 2000, http://www.fws.gov/cno/news/2000/2000-173.htm

Natural Communities Coalition. 2015. Reserve Map for Orange County NCCP/HCP. http://occonservation.org/land-areas/reserve-map/.

Western Regional Climate Center. 2015. Period of Record Monthly Climate Summary: Newport Beach Harbor, California (046175). http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6175 [May 18, 2015].

This section evaluates the potential environmental effects the General Plan Amendments could have on cultural and paleontological resources. The analysis is based in part on cultural resources data provided by the National Register of Historic Places and the General Plan Historic and Cultural Resources Element. Several letters and emails were received asking that historical resources at Fairview Park be preserved. This issue is addressed under Threshold A, below.

# **Existing Conditions**

# **Locally Important Historic Resources**

As with other cities in Orange County, historical property types characteristic of the early colonization and subsequent growth of the City may include houses and churches, agri-industrial buildings, railroad structures, cultural institutions and parks, bridges and street patterns, early water distribution features and canals, and land use patterns. Early houses were typically vernacular, wood frame, one- or two story structures with a simple rectangular or  $\mathcal{L}$  plans and gable roofs. Commercial structures were usually brick with cast iron storefronts, while agri-industrial buildings were either brick or wood frame.

Following World War I, historical resource property types may be represented by Arts and Crafts styles, including the California Bungalow, two-story Craftsman, Prairie, and English cottage/Tudor Revival. In addition, styles that referenced the American Colonial period and French, Spanish-Italian Renaissance, and English architecture may have also been popular. Beaux Arts Classicism reached its peak in the post-World War I period civic architecture, while Gothic Revival and Spanish Colonial Revival influenced designs for churches. Finally, historical resource property types characteristic of the post-World War II years may include tracts of post-war vernacular style houses. These one-story residences were modest in size and typically had wood or stucco siding and attached garages; the tracts themselves were designed with curving street patterns.

## Historical Development of Costa Mesa

The history of Costa Mesa is the story of three communities of the past. An old boomtown called Fairview, the farming colony of Paularino, and the Village of Harper once thrived within Costa Mesa's boundaries. Their growth and blending together played a significant role in the history of Orange County and California.

Sometime after 1800, three adobes were built along the bluffs of Costa Mesa overlooking the Santa Ana River. The first adobe, known as the Polloreno or Banning Adobe, was located about one-third of a mile south along the bluff from Adams Avenue. It fell to ruin between 1903 and 1906 after treasure hunters dug around the old building looking for hidden gold. The second adobe, known as the Gabe Allen Adobe or the Estancia, still exists. It is believed that the Estancia adobe was built by the padres from Mission San Juan Capistrano as a way station for herders. The third adobe, called the Rice Adobe, was located just north of Gisler Avenue. This adobe was torn down by Edward Pomeroy, the owner at the time, in 1919, to keep treasure hunters off the property.

#### **Fairview**

Between the fall of 1887 and the summer of 1888, the town of Fairview was introduced. The town centered on the present day intersection of Adams Avenue and Harbor Boulevard. In October 1887, a syndicate consisting of local businessmen formed to purchase various tracts in the Newport District and develop portions of them. Over the next few years, development of Fairview grew at a rapid pace. During this time, the Fairview Post Office was established in a corner drug store and the three-story Hotel Fairview was also completed. Four other developments demonstrated the rapid rise of this new town: the discovery of a hot mineral water spring and natural gas, the publication of a local newspaper, and the Santa Ana, Fairview & Pacific Railroad.

Despite attempts to promote the continuing development of Fairview, by spring of 1889 it was over. The town began to collapse as rapidly as it had appeared. By 1889 the land boom of Southern California was over. Many of the land transactions throughout the region fell through. Fairview's expansion was curtailed at this point. In mid-March, a severe rainstorm washed out a section of the Fairview Railroad tracks. The roadbed midway between Fairview and Santa Ana, next to the Santa Ana River, which had overflown, was gone. In addition, many of the residents began to leave town. Formerly successful business establishments boarded up their doors and windows.

By 1911, all that remained in Fairview was the town's schoolhouse, the hotel, and a few scattered houses. The Fairview School closed its doors in 1915 when it merged with the Harper District. In 1918, an earthquake cut off the flow of hot mineral water to the hotel resort. This closed the hotel almost immediately, and the structure was sold and demolished two years later. The few remaining residential houses succumbed to new development in the 1930s and 1950s or to accidents such as fire.

#### Paularino

Paularino was considered a typical farming community, with approximately 800 acres bounded by today's Fairview Road to the west, Newport Boulevard on the east, the San Diego Freeway on the north, and by a boundary line approximately one-half mile south of Baker Street. The Paularino community did not amount to more than a name with a few scattered farmhouses, one public school building, and a railroad siding complete with a loading platform and a warehouse. The Paularino railroad siding was located on what is now the west side of Newport Boulevard between Paularino Avenue and Baker Street. It was connected to the Santa Ana & Newport Railroad, which ran between Santa Ana and Newport Beach. The lack of growth of Paularino eventually led to its demise.

### <u>Harper</u>

Harper was named after a rancher who came to the area after the Fairview land boom. Building activity was quiet on the mesa from 1903 to 1906. Developers and oil discoveries during the next six years promoted further settlement. These two factors led to the addition of stores, schools, highways, water systems, and churches. Parallel with the land development, the area experienced its first oil boom, which served to promote and expand population. Three oil wells went up in 1906 just south of the present Newport Harbor High School location. In the latter part of 1907, several more wells were installed on the northern end of the Newport Heights Tract. The oil boom was short-lived. The oil that had been found turned out to be a thick, sticky substance and thus, very difficult to pump. Within two or three years, the old derricks were abandoned. The growth and development of Harper fell back upon land development.

In 1920 the farming community of Harper was renamed to Costa Mesa. In the summer of 1920, the second store on Newport Boulevard—the Wayside Market—opened for business. Several more store buildings went up along the boulevard during 1921, including a garage and blacksmith shop, barbershop, and soda fountain.

Development increased throughout Costa Mesa until January 21, 1932 when the Costa Mesa Branch of the Bank of Balboa closed its doors during the Great Depression. In December 1933, the branch line of the Southern Pacific Railroad, which ran from Santa Ana to Newport Beach along Newport Boulevard through the heart of town, was abandoned. The tracks were pulled up two years later.

Growth continued in 1940 with the opening of several commercial stores, including the new Sprouse-Reitz Variety at 1830 Newport Boulevard, the Myers & Myers Department Store at 1816 Newport Boulevard, and the Post Office at 1809 Newport Boulevard. Through 1940 Costa Mesa continued to be recognized as a small town; then World War II accelerated growth.

### The Santa Ana Army Air Base

As world tension mounted, additional military installations were planned throughout the nation. A prime contract was awarded to the Griffith Company of Los Angeles for construction of the United States Air Corps Replacement Training Center. Construction of the base intensified after the United States formally declared war. On April 7, 1942, the base was renamed the Santa Ana Army Air Base (SAAAB). It consisted of three schools: the Air Force Classification Center, the Air Force Pre-Flight School for pilots, and the Air Force Pre-Flight School for bombardiers and navigators. The base eventually reached the size of 1,283 acres, including territory west from Newport Boulevard to Harbor Boulevard, and south from Warehouse Road to the present Vanguard University. The main gate was located on Newport Boulevard.

After the war, in 1946 the War Department announced that the Base was for sale to any educational institution for the price of one dollar. Two hundred and forty-three acres of what had been choice farming land and Air Force buildings were transferred from the War Assets Administration to the Orange Coast Junior College District. The school opened for the first time on September 13, 1948. Also, in 1948 the Southern California Assemblies of God Churches purchased 126 acres of the Army Air Base from the War Assets Administration for a future campus. In 1950, a new Southern California Bible College opened. Today, all that remains of the SAAAB are a few warehouses located near the corner of Dale Way and College Avenue, plus a few "standardized designed" buildings on the Orange County Fairgrounds, including the 1.4-acre Memorial Garden and Bird Sanctuary, also located on the Fairgrounds.

#### Historical Resources within Costa Mesa

A City-wide survey of historic resources in the City was conducted by PCR Services Corporation in 1999. For the General Plan Amendment and update of the Historic and Cultural Resources Element a records search and review of the National Register of Historic Places and its annual updates, as well as the 1995 California Historic Resources Inventory maintained by the State Office of Historic Preservation (OHP), was conducted to determine any existing evaluations and designations in the City of Costa Mesa,. Table CUL-1, City of Costa Mesa Historic Resources Inventory, reflects the results of the research conducted.

Table CUL-1
City of Costa Mesa Historic Resources Inventory

Map #	Address	Year Built	Property Type	Comments		
I. Sites Eligible for National Register Listing and Local Register Listing						
1	420 W. 19th St.	1928	Religious	Spanish Colonial/Methodist Church		
2	1900 Adams Ave.	c. 1823	Adobe	Diego Sepulveda Adobe		
3	3315 Fairview Rd.	1915	SF Residential	Craftsman/Segerstrom House		
4	3315 Fairview Rd.	1928	Agricultural	Western Style/Segerstrom Barn		
5	2150 Newport Blvd.	1880	Commercial	Queen Anne/Stationmaster House		
II. Site Eligible for Local Register Listing						
6	123 E. 18 <sup>th</sup> St.	1926	SF Residential	Spanish Colonial		
7	127 E. 18 <sup>th</sup> St.	1926	SF Residential	Spanish Colonial		
8	179 E. 18 <sup>th</sup> St.	1923	SF Residential	Bungalow/TeWinkle House		
9	565-7 W. 18th St.	1950	Government	Int'l. Style/Vet's Hall/Police Substation		
10	1534 Adams Ave.	1963	Theater	Modern/International Style		
11	147 Albert Place	c. 1923	SF Residential	Bungalow		
12	195 Albert Place	1924	SF Residential	Bungalow		
13	1293 Baker St.	1928/30	SF Residential	Spanish Colonial/McClintock House		
14	1950 Church St.	1928	Religious	Craftsman/Church		
15	1817 Fullerton Ave.	c. 1909	SF Residential	False Front/Blacksmith's House		
16	137 Magnolia St.	c. 1920	SF Residential	Bungalow/Blacksmith's House		
17	200 Magnolia St.	1936	SF Residential	Monterey Style/Sparke's House		
18	208 Magnolia St.	1972/40	SF Residential	Period Revival/Leroy Anderson		

determined.

Table CUL-1 City of Costa Mesa Historic Resources Inventory

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Map #	Address	Year Built	Property Type	Comments			
19	301 Magnolia St.	c. 1923/39	Religious	Church			
20	2180 Newport Blvd.	c. 1962	Commercial	International Style/Stater Brothers			
21	1734 Orange Ave.	c. 1939/50	Religious	Mesa Bible Chapel			
22	1835 Orange Ave.	1930	SF Residential	Craftsman/Bungalow			
23	2048 Orange Ave.	1923	SF Residential	Craftsman/Bungalow			
24	2172 Orange Ave.	1923	SF Residential	Craftsman/Pink House			
25	2519 Santa Ana Ave.	1925	SF Residential	Bungalow			
26	2529 Santa Ana Ave.1	1915	SF Residential	Bungalow/Huscroft House Relocated			
27	1549 Tustin Ave.	1915	SF Residential	Craftsman/La Perle House			
III. Sites Eligible for Local Register Listing as Historic District Contributors							
28	88 Fair Drive	1942	Military	Santa Ana Army/O.C. Fairgrounds			
29	2701 Fairview Rd.	c. 1950/55	Educational	Int'l. Style/Orange Coast College			
<sup>1</sup> This house has been relocated to a temporary location at the Orange County Fairgrounds until a permanent location can be							

The research conducted and analysis performed resulted in the identification of buildings that have been evaluated and classified according to the requirements of the California OHP. The following evaluation codes were found to apply to one or more of the surveyed properties:

- 2S2- Determined eligible for separate listing in the National Register through a consensus determination by a federal agency and the State Historic Preservation Officer.
- 3S- Appears eligible for separate listing in the National Register.
- 5S1- Not eligible for the National Register but of local interest because the property is eligible for separate designation under an existing local ordinance.
- 5D1- Not eligible for the National Register but of local interest because the property is a contributor to a fully documented district that is eligible for designation as a local historic district under an existing local ordinance.
- 5S3- Not eligible for the National Register but of local interest because the property is not eligible for separate designation under an existing local ordinance, but is eligible for special consideration in the local planning process.
- 6Z1- Found ineligible for listing in the National Register with no potential for any listing.

### Resources Listed as Eligible for the National Register

One property in the survey area is currently listed as eligible for the National Register: the Station Master's House located at 2150 Newport Boulevard.

Five properties, including the Station Master's House, in the survey area appear to meet the standards for listing in the National Register. These properties have been given an OHP rating of "3S" and are as follows:

- 420 West 19th Street Methodist Church
- 1900 Adams Avenue Diego Sepulveda Adobe
- 315 Fairview Road Segerstrom House
- 3315 Fairview Road Segerstrom Barn
- 2150 Newport Boulevard Station Master House

### Resources Worthy of Local Designation

Twenty-six properties in the survey area have been evaluated as eligible for designation under an existing local historic preservation ordinance. The OHP rating classification given to these structures were "5S1" and "5D1." "5S1" applies to properties which are eligible for individual designation under the local ordinance. "5D1" applies to contributors in recognizable groupings or districts that are likely to be designated as local historic districts.

#### Resources Worthy of Local Note

A total of 141 properties in the survey area were evaluated as worthy of note at the local level. These resources, primarily single-family residences, derive their significance from the historic development patterns and architectural characteristics that give the study area a cohesive identity. The OHP classification given to such buildings were "5S3" and were evaluated as eligible for special consideration in the local planning process.

In summary, the Citywide Survey conducted by PCR Services Corporation during July 1999 identified 4,332 properties that were constructed prior to 1954 (45 years or older), of which 3,348 were inventoried after completing the initial windshield survey and field research. Upon completion of in-depth field research and an intensive level survey approximately 29 properties were identified as significant federal, state, and/or local historic resources. Approximately 60 properties, including the 29 significant properties, were formally documented on State Inventory Forms (DPR523 forms). Since the 1999 inventory additional properties may have become potentially significant historic resources due to the age of the resource.

### **Locally Important Cultural Resources**

Development of sites containing archaeological resources brings the possibility of damage or destruction to those resources. Previously recorded and investigated sites in Costa Mesa have yielded artifacts at depths ranging from one to seven feet, with the greatest number of items being found between one and two feet. The construction of nearly any type of building or road involves excavation or scarification of the soil to a depth of one to two feet or more. Construction of parking lots and installation of groundcovers normally involve disturbance of the first six inches of soil or less. New shrubs and trees, however, require planting holes ranging from one to three feet in depth.

In summary, almost any kind of development on land containing archaeological resources will directly impact those resources. The scientific, cultural and educational value of historic or prehistoric artifacts can be severely reduced by such disturbance. Items may be damaged or lost and their distribution in the soil may be altered from the original condition, thus misleading investigators as to their use and the location of various activity centers within the original settlement.

#### **Cultural Resources within Costa Mesa**

Costa Mesa has a rich prehistoric past. The Gabrielinos (Tongva or Kizh) were the City's first settlers prior to 1,500 B.C. The Gabrielinos are Takic-speakers and lived in domed, circular shaped structures, constructed from tree branches and thatched with tule, fern, or carrizo. Villages were located near fresh water and raw material resources. Evidence or artifacts of their occupation have been found both on the surface and subsurface, and have included stone and bone tools, shell middens, pottery shards, and human burials.

Within the City limits there are seven previously recorded prehistoric archaeological sites. The seven archaeological sites are identified as CA-ORA-76 (shell midden); CA-ORA-163 (shell midden); CA-ORA-165 (lithic scatter and shell midden); CA-ORA-297 (stone tools and debris); CA-ORA-58 (habitation complex); CA-ORA-506 (habitation complex); and CA-ORA-687(habitation complex with human burials). These sites are located on or near the bluffs overlooking the Santa Ana River and the Upper Newport Bay. Of these eight archaeological sites, CA-ORA-58 known as the

"Fairview Indian Site," is listed on the National Register of Historic Places and on the California Register Historic Resources. Given the rich history of past human settlement, the potential exists for subsurface artifacts could still be present in soils at depths not previously disturbed by existing or past development.

### **Paleontology**

Paleontology is the study of the fossil record of past geological periods and of the phylogenetic relationships between ancient and contemporary plant and animal species. Specifically, paleontology is the study of what fossils tell us about the ecologies of the past, about evolution, and about our place, as humans, in the world. Paleontology incorporates knowledge from biology, geology, ecology, anthropology, archaeology, and even computer science to understand the processes that have led to the origination and eventual destruction of the different types of organisms since life arose.

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. These resources are valued for the information they yield about the history of the earth and its past ecological settings. There are two types of resources: vertebrate and invertebrate. These resources are found in geologic strata conducive to their preservation, typically sedimentary formations. Paleontological sites are areas that show evidence of pre-human activity. Often they are simply small outcroppings visible on the surface or sites encountered during grading. Geologic formations are the most important indicators of paleontological resources since they may contain important fossils.

### Paleontological Resources within Costa Mesa

A comprehensive paleontological assessment of Orange County that included the City of Costa Mesa was undertaken in 1980. The geology of Costa Mesa was mapped out as part of the countywide assessment. The geology of Costa Mesa was determined to be part of the Palos Verdes Formation, a collection of sand and gravel deposits approximately 100,000 years old. These deposits were formed during the time when Costa Mesa was covered by the Pacific Ocean. Often referred to as the Palos Verdes Sand, these deposits contain evidence of the kinds of marine life that inhabited the area prior to the ocean receding, exposing the current terrestrial landmass of Costa Mesa.

The results of the paleontological assessment identified ten unique paleontological sites consisting of a variety of gastropods (e.g., marine snails) and bivalves (e.g., clams, oysters, and mussels). These sites were singled out due to encroaching development that could cause significant impacts to the resources if left unprotected. The ten paleontological sites have been classified as F-91 (Partial skeleton of a mastodon); A-3129 (Mollusks); LACM-3267 (Mastodon or mammoth); LACM-4219 (Mollusks, Fish, Birds, Sharks, Sea lions and Seals); JDC-CM-1 (Bivalve, Gastropods, and Mollusks); JDC-CM-2 (Mollusks); JDC-CM-2A (Oyster shells and Mollusks); JDC-CM-3 (Bay-type Sea shells); JDC-CM-4 (Marine shells); and VAC-CM-4 (Mollusks). In addition, the assessment also identified more than 500 species of marine invertebrate fossils, as well as significant numbers of non-marine vertebrate fossils, including, birds, and sea and land mammals. Given the paleontological record of the area, the potential exists for subsurface artifacts could still be present in soils at depths not previously disturbed by existing or past development.

## Regulatory Framework

The treatment of cultural resources is governed by federal and State laws and guidelines. Specific criteria apply to determining whether prehistoric and historic sites or objects are significant and/or protected by law. Federal and State significance criteria generally focus on the resource's integrity and uniqueness, its relationship to similar resources, and its potential to contribute important information to scholarly research. Some resources that do not meet federal significance criteria may be considered significant under State criteria. The laws and regulations are intended to preserve significant prehistoric or historic resources. Federal and State laws and guidelines for protecting historic resources pertinent to a local community development and planning program are summarized below.

#### The National Historic Preservation Act of 1966

Enacted in 1966, the National Historic Preservation Act (NHPA) has become the foundation and framework for historic preservation in the United States. The NHPA authorizes the Secretary of the Interior to expand and maintain a National Register of Historic Places (NRHP); it establishes an Advisory Council on Historic Preservation as an independent federal entity; requires federal agencies to take into account the effects of their undertakings on historic properties, and affords the Advisory Council a reasonable opportunity to comment on any undertakings that may affect historic properties listed, or eligible for listing, in the NRHP; and makes the heads of all federal agencies responsible for the preservation of historic properties owned or controlled by their agencies. In addition, the NHPA authorizes funding for State programs with provisions for pass-through funding and participation by local governments. In summary, the NHPA provides the legal framework for most State and local preservation laws.

The National Park Service has issued regulations governing the NRHP (36 CFR 60). Among the topics covered in detail in these regulations are the effects of listing under federal law, definition of key terms (e.g., building, site, structure, and district), nomination procedures, nomination appeals, and removing properties from the NRHP. Importantly, Section 60.4 of the regulations presents the criteria by which historic properties are evaluated for the NRHP.

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. that are associated with lives of persons significant in our past; or
- C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that has yielded, or may be likely to yield, information important in prehistory or history.

A point to be emphasized is that a historic property does not have to be nominated for or listed in the NRHP to be afforded protection under the NHPA. Indeed, most of the properties managed under this and other federal historic-preservation authorities have never been nominated for the NRHP. The significance of a historic district, site, building structure or object—and thus its required consideration under the law—is determined by the property's eligibility for the NRHP with respect to the criteria set forth in 36 CFR 60.4.

### The Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act is a federal law passed in 1990. NAGPRA provides a process for museums and federal agencies to return certain Native American cultural items—human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants and culturally affiliated Native American tribes and Native Hawaiian organizations. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items, intentional and inadvertent discovery of Native American cultural items on federal and tribal lands, and penalties for noncompliance and illegal trafficking.

### Federal Curation of Archaeological Collections

Federal curation regulations are also provided in 36 CFR Part 79, which apply to collections that are excavated or removed under the authority of the Antiquities Act (16 USC. 431-433), the Reservoir Salvage Act (16 USC. 469-469c), Section 110 of the National Historic Preservation Act (16 USC. 470h-2), or the Archaeological Resources Protection Act (16 USC. 470aa-mm). Such collections generally include those that are the result of a prehistoric or historic resources survey, excavation, or other study conducted in connection with a federal action, assistance, license, or permit.

#### The California Office of Historic Preservation

The State of California Office of Historic Preservation (OHP) administers the California Register program. As a recipient of federal funding, the OHP meets the requirements of the NHPA with a State Historical Preservation Officer (SHPO) who enforces a designation and protection process, has a qualified historic preservation review commission, maintains a system for surveys and inventories, and provides for adequate public participation in its activities. As the recipient of federal funds that require pass-through funding to local governments, the OHP also administers the Certified Local Government program for the State of California. The OHP also administers the California Register of Historical Landmarks and California Points of Historical Interest programs. In addition, the State of California Governor's Office of Planning and Research (OPR) published a supplement to the 2003 General Plan Guidelines on November 14, 2005 which provides advisory guidance to cities and counties on the process for consulting with Native American Indian tribes during the adoption or amendment of local general plans, such as the City's General Plan Update, or specific plans, in accordance to Senate Bill 18 (SB18) (Chapter 905, Statutes of 2004).

### The California Register of Historic Resources

SHPO maintains the California Register of Historic Resources (CRHR). Properties listed, or formally designated eligible for listing, on the NRHP are automatically listed on the CRHR, as are State Landmarks and Points of Interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

#### **Native American Historic Cultural Sites**

State law (Public Resources Code 5097-5097.993) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the Native American Heritage Commission to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to a year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the California Register of Historic Resources.

### California Native American Graves Protection and Repatriation Act

The California NAGPRA, enacted in 2001, requires all State agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. California NAGPRA also provides a process for the identification and repatriation of these items to the appropriate tribes.

### California Health and Safety Code

In the event human remains are encountered in any form outside of a cemetery, whoever makes this discovery is required to comply with State of California Public Resources Health and Safety Code Section 7050.5-7055. Specifically, Health and Safety Code Section 7050.5 describes the requirements if any human remains are accidentally discovered during excavation of a site.

### State Historic Building Code

Alternative State building regulations may be used for the rehabilitation, preservation, restoration, or relocation of nominated resources. Specifically, the State Historical Building Code, or HBC, (part 8 of Title 24 of the California Administrative Code) shall be used for any historic resource through the City's building permit procedure.

The purpose of the HBC is to provide regulations for the preservation, restoration, rehabilitation, relocation or reconstruction of buildings or properties designated as qualified historical buildings or properties. The HBC is intended to provide solutions for the preservation of qualified historical buildings or properties, to promote sustainability, to provide access for persons with disabilities, to provide a cost-effective approach to preservation, and to provide for the reasonable safety of the occupants or users. The HBC requires enforcing agencies to accept solutions that are reasonably equivalent to the regular code when dealing with qualified historical buildings or properties. The intent of the HBC is to facilitate the preservation and continuing use of qualified historical buildings or properties while providing reasonable safety for the building occupants and access for persons with disabilities.

#### Senate Bill 18

Senate Bill (SB) 18 (California Government Code, Section 65352.3) incorporates the protection of California traditional tribal cultural places into land use planning for cities, counties, and agencies by establishing responsibilities for local governments to contact, refer plans to, and consult with California Native American tribes as part of the adoption or amendment of any general or specific plan proposed on or after March 1, 2005, SB18 requires public notice to be sent to tribes listed on the Native American Heritage Commission's SB18 Tribal Consultation list within the geographical areas affected by the proposed changes. Tribes must respond to a local government notice within 90 days (unless a shorter time frame has been agreed upon by the tribe), indicating whether or not they want to consult with the local government. Consultations are for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code that may be affected by the proposed adoption or amendment to a general or specific plan.

### Assembly Bill 52

Assembly Bill (AB) 52 specifies that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource, as defined, is a project that may have a significant effect on the environment. AB 52 requires a lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation, prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project. AB 52 specifies examples of mitigation measures that may be considered to avoid or minimize impacts on tribal cultural resources. The bill makes the above provisions applicable to projects that have a notice of preparation or a notice of negative declaration filed or mitigated negative declaration on or after July 1, 2015. AB 52 amends Sections 5097.94 and adds Sections 21073, 21074, 2108.3.1., 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to the California Public Resources Code (PRC) relating to Native Americans.

### City of Costa Mesa Historic Preservation Ordinance

The City of Costa Mesa, through provisions cited in the Municipal Code, has established procedures for preserving designated historic and cultural resources. The provision relative to historic preservation is documented in the City's Historic Preservation Ordinance (Ordinance). The Ordinance was adopted on November 1, 1999 by the Costa Mesa City Council. The Ordinance encompasses significance criteria requirements, the obligations required of historic property ownership, and a broad range of incentives available to owners of historic properties.

The Historic Preservation Ordinance states that a historic resource is any building, structure, natural feature, site, landscape, object, or improvement that is of significance to the citizens of the City, the State, or the nation. To be designated a local landmark a historic resource must be over 50 years of age or in special circumstances under 50 years, and meet one or more of the following:

- Exemplifies or reflects special elements of the City's cultural, social, economic, political, aesthetic, engineering, architectural, or natural history; or
- Is identified with persons or events significant in local, state, or natural history; or
- Embodies distinctive characteristics of a style, type, period, or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship; or
- Represents the work of a notable builder, designer, or architect; or
- Contributes to the significance of an historic area, being a geographically definable area possessing a
  concentration of historic or scenic properties or thematically related grouping of properties which contribute to
  each other and are unified aesthetically by plan or physical development; or
- Has a unique location or singular physical characteristics or is a view or vista representing an established and familiar visual feature of a neighborhood community or of the City; or
- Embodies elements of architectural design, detail, materials, or craftsmanship that represents a significant structural or architectural achievement or innovation; or
- Is similar to other distinctive properties, sites, areas, or objects based on a historic, cultural, or architectural motif; or
- Reflects significant geographical patterns, including those associated with different eras of settlement and growth, particular transportation modes, or distinctive examples of park or community planning; or
- Is a type of building or is associated with a business or use which was once common but is now rare; or
- Yields, or may yield, information important in prehistory or history; and
- Retains the integrity of those characteristics necessary to convey its significance.

#### **Historical Preservation Committee**

The Historical Preservation Committee consists of nine members appointed by the City Council. Members are residents of the City who are interested and knowledgeable in areas related to historic preservation. Authorized by ordinance, the Commission makes recommendations, decisions, and determinations concerning the designation, preservation, protection, enhancement, and perpetuation of historic and cultural resources in the City.

## Thresholds of Significance

The General Plan Amendments would result in significant impacts related to cultural or paleontological resources if they:

- A. Cause a substantial adverse change in the significance of a historic resource as defined in Section 15064.5 of the State CEQA Guidelines.
- B. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines.

- C. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- D. Disturb any human remains including those interred outside of formal cemetery.
- E. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code section 21074?

### Environmental Impacts



Impacts to historic resources would be less than significant with implementation of existing regulations and draft General Plan policies.

Future development within the planning area subject to the goals and policies of the General Plan Amendments could impact historic resources where new development supplants older development. Adverse modification of historic resources may also occur if appropriate restoration methods are not implemented, thereby permanently altering the historic character of the resource. Impacts associated with the destruction or alteration of historic resources can affect a City's sense of place and lose important information relevant to City, the region, and/or State history.

As part of the General Plan Amendments, the goals, objectives, and policies in the Historic and Cultural Resources Element have been strengthened, particularly with regard to post-World War II structures and community education. The following additional goals and policies have been added:

### **GOAL HCR-1: HISTORIC RESOURCE CONSERVATION**

It is the goal of the City of Costa Mesa to provide its citizens with a high quality environment through the protection and conservation of historic and cultural resources.

<u>Objective HCR-1A.</u> Encourage the preservation and protection of the City's natural and man-made historic resources.

- Policy HCR-1A.1 Require, as part of the environmental review procedure, an evaluation of the significance of paleontological, archaeological, and historical resources and the impact of proposed development on those resources.
- Policy HCR-1A.2 Require monitoring of grading operations by a qualified paleontologist or archaeologist when the site is reasonably suspected of containing such resources. If, as a result, evidence of resources is found, require the property to be made available for a reasonable period of time for salvage of known paleontological and archaeological resources by qualified experts, organizations, or educational institutions.
- Policy HCR-1A.3 Require development on land containing known archaeological resources to use reasonable care to locate structures, paving, landscaping, and fill dirt in such a way as to preserve these resources undamaged for future generations when it is the recommendation of a qualified archaeologist that said resources be preserved in situ.
- Policy HCR-1A.4 Encourage the preservation of significant historic resources as identified on Table HCR-1 by developing and implementing incentives such as building and planning application permit fee waivers, Mills Act contracts, grants and loans, implementing the State Historic Building Code and other incentives as identified in the City's Historic Preservation Ordinance.

- Policy HCR-1A.5 Promote the preservation of significant historical resources and encourage other public agencies or private organizations to assist in the purchase and/or relocation of sites, buildings, and structures deemed to be of historical significance.
- Policy HCR-1A.6 Encourage development of an interpretive center for paleontological, archaeological, and historical resources at Fairview Park. The center may contain resources found in the park area as well as resources found throughout the City.

Future development and infrastructure improvements guided by the Land Use and Circulation Elements will be subject to policies in the Historic and Cultural Resources Element described above, the City's Historic Preservation Ordinance, and protections offered by local Historic Landmark and Historic District designations. Within a designated Local Historic Landmark and Historic District, the City would conduct a historic resources survey to identify and inventory historic and cultural resources. The survey would be prepared and maintained periodically and be consistent with State and Federal preservation standards. Through implementation of a historic resources survey, greater protection and community awareness of historic resources would be achieved.

By preventing demolition of historic structures, ensuring that new development is compatible with historic resources, and ensuring that restoration of historic structures preserve the character of the resource, potential impacts to historic resources will be less than significant because the historic value of these resources will be preserved in perpetuity. These policies operate concurrently with the extensive regulatory framework of federal, State, and local laws protecting historic resources, as identified herein.

## IMPACT 4.5. B

Impacts to archaeological resources would be less than significant with implementation of existing regulations and draft General Plan policies.

Future development subject to the goals and policies of the Land Use and Circulation Elements could impact archaeological resources where excavation and other earthmoving activities are required. Failure to properly survey development sites and, if necessary, monitor earthmoving activities to ensure identification and recovery of archaeological resources could result in a significant impact due to the loss of information related to pre-historic and historic human activities.

The amended Historic and Cultural Resources Element, as proposed, includes goals, policies, and implementation measures designed to protect and maintain local archaeological resources as follows:

### **Preserving Archaeological Resources**

Policy HCR-2.A: Require cultural resources studies (i.e. archaeological and historical investigations) for all applicable discretionary projects, in accordance with CEQA regulations. The studies should identify cultural resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features) in the project area, determine their eligibility for inclusion in the California Register of Historic Resources, and provide mitigation measures for any resources in the project area that cannot be avoided. Cultural resources studies shall

be completed by a professional archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistorical or historical archaeology.

Policy HCR-2.B: If, during the course of construction cultural resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features) are discovered work shall be halted immediately within 50 feet of the discovery, the City of Costa Mesa's Planning Department shall be notified, and a professional archaeologist that meets the Secretary

of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology shall be retained to determine the significance of the discovery.

In addition to the extensive regulatory framework of federal, State, and local laws protecting archaeological resources, the policies of the Historical and Cultural Resources Element will protect archaeological resources by requiring surveys, documentation, and protection of resources. Mitigation for individual projects would be required depending on the assessment provided in the cultural resources assessment for each individual development project. The preferred course of action is to avoid the resource and leave it in place, if possible. Other common mitigation includes provisions for recovery, identification, and curation should resources be discovered during site surveying or during earthmoving activities. Impacts to archaeological resources would be less than significant with implementation of draft General Plan policies and existing regulations described under Regulatory Framework above.

IMPACT 4.5. C Impacts to paleontological resources would be less than significant with implementation of existing regulations and draft General Plan policies.

Future development pursuant to the General Plan Amendments which result in excavation and other earthmoving activities in Pleistocene-era alluvium materials could disturb paleontological resources. Failure to survey development sites prior to ground disturbing activities, and, if necessary, to monitor earthmoving activities to ensure proper identification and recovery of paleontological resources could result in a significant impact to fossil resources.

The amended Historic and Cultural Resources Element, as proposed, includes goals, policies, and implementation measures designed to protect and maintain local paleontological resources as follows:

### **Preserving Paleontological Resources**

Policy HCR-3.A: Require paleontological studies for all applicable discretionary projects. The studies should identify paleontological resources in the project area, and provide mitigation measures for any resources in the project area that cannot be avoided.

Policy HCR-3.B: Should any potentially unique paleontological resources (fossils) be encountered during development activities, work shall be halted immediately within 50 feet of the discovery, the City of Costa Mesa Planning Department shall be immediately notified, and a qualified paleontologist shall be retained to determine the significance of the discovery.

Policy HCR-3.C: The City and a project applicant shall consider the mitigation recommendations of the qualified paleontologist for any unanticipated discoveries. The City and a project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. The project proponent shall be required to implement any mitigation necessary for the protection of paleontological resources.

In addition to the extensive regulatory framework of federal, State, and local laws protecting paleontological resources, the policies of the Historical and Cultural Resources Element would protect paleontological resources by requiring surveys, documentation, and protection of resources. In particular, Policies HCR-3.A to C require that a paleontological study be undertaken for individual development projects. If resources are suspected, a paleontological expert would monitor the site during ground disturbing activities. If resources are found, the preferred course of action is to avoid the resource and leave it in place, if possible. Other common mitigation could be required, including

recovery, identification, and curation of resources discovered during site surveying or during earthmoving activities. Impacts to paleontological resources would be less than significant with implementation of existing policies and regulations and new general plan policies related to paleontological resources.

IMPACT 4.5. D Impacts to human remains would be less than significant with implementation of existing regulations.

The potential exists that as-yet undiscovered human remains may be encountered during future development activities within the planning area. Destruction of pre-historic or historic remains can result in the loss of information important to the history of the State, the region, or the immediate locality. Destruction of recent human remains could result in destruction of evidence associated with a crime.

In the event human remains are encountered, the discovery is required to comply with State of California Public Resources Health and Safety Code Section 7050.5-7055. Specifically, Health and Safety Code Section 7050.5 describes the requirements if any human remains are discovered during excavation of a site. As required by state law, the requirements and procedures set forth in Section 5097.98 of the California Public Resources Code would be implemented, including notification of the County Coroner, notification of the Native American Heritage Commission, and consultation with the individual identified by the Native American Heritage Commission to be the "most likely descendant." If human remains are found during excavation, excavation must stop in the vicinity of the find and any area that is reasonably suspected to overlie adjacent remains until the County Coroner has been contacted, the remains investigated, and appropriate recommendations made for the treatment and disposition of the remains. Given required compliance with state regulations that detail the appropriate actions necessary in the event human remains are encountered, impacts associated with development supported by the proposed General Plan Amendments would be less than significant.

IMPACT 4.5. E Impacts to tribal cultural resources, as defined in Public Resources Code Section 21074, would be less than significant.

As described under Regulatory Framework above, AB 52 requires a lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation, prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project. Since the General Plan Amendments are not authorizing the development of a specific project where ground-disturbing activities would take place, the requirement for tribal consultation is not relevant. However, as part of the CEQA process the City has undertaken consultation pursuant to both AB 52 and SB 18 (since the project is a General Plan Amendment). Tribes affiliated with the planning area will be notified by the City when specific development proposals are submitted to the City for permitting.

## Mitigation Measures

No mitigation measures are required.

This section evaluates the potential environmental effects the General Plan Amendments could have on geology and soils, including earthquake related impacts and erosion and landslide impacts. This analysis is based, in part, on the following:

- Costa Mesa Safety Element of the General Plan
- Orange County General Plan
- Natural Resources Conservation Service Web Soil Survey, US Department of Agriculture, Natural Resources Conservation Service (NRCS)
- United States Geological Service
- California Geological Survey
- Publicly available resources from other agencies, organizations, and educational institutions

No comments related to geology and soils were submitted during circulation of the Notice of Preparation.

### Existing Conditions

### **Geologic Structures**

Costa Mesa lies adjacent to the Downey and Tustin portions of the Coastal Plain, where sedimentary and volcanic rocks in the subsurface attain great thickness. These deposits are composed mainly of volcanic, marine, and non-marine sedimentary rocks overlying a basement complex of granitic and metamorphic rock. The plain is immediately underlain by a thick sequence of alluvial sediments, which overlie the older sedimentary and volcanic rocks.

The main development of Costa Mesa is primarily on an uplifted mesa (Newport Mesa) bounded on the west, south, and east by steep cliffs. Newport Mesa slopes gently northward from an elevation of 80 to 110 feet above sea level at the southern crest of the mesa to less than 40 feet above sea level at the northern boundary of the City. Approximately 80 percent of the City is located on this mesa (see Figure 4.6-1, *Geologic Map*).

Newport Mesa is the most southerly of a series of discontinuous low hills and plains that extend along the Newport-Inglewood structural zone from the Santa Monica Mountains southeast to Newport Beach. These topographic features are inferred from both the physiographic and stratigraphic evidence to be essentially contemporaneous segments of the Sangamon Age (120,000 years Before Present) deformed lower terrace of the Palos Verdes Hills.

#### Soils

Soils within Costa Mesa are variable, ranging from a predominance of clay with some silty sand in the northern half of the City to a predominance of silty sand with some sand and clay in the southern half. These generalized units were derived from a more detailed soils map contained in the soil survey of Orange County.

#### Mineral Resources

#### Oil

Portions of Costa Mesa overlay the West Newport Oil Field, which is south of 17<sup>th</sup> Street between Pomona and Westminster Avenues, and the West Newport Oil Field, which is west of Whittier Avenue, south of Victoria Street. Currently the only active oil wells in Costa Mesa operate in the West Newport Field, west of Whittier Avenue between 17<sup>th</sup> and 19<sup>th</sup> Streets (DC DOGG 2015). These wells produce a relatively low-quality crude oil and remained in operation through the mid-1990s.

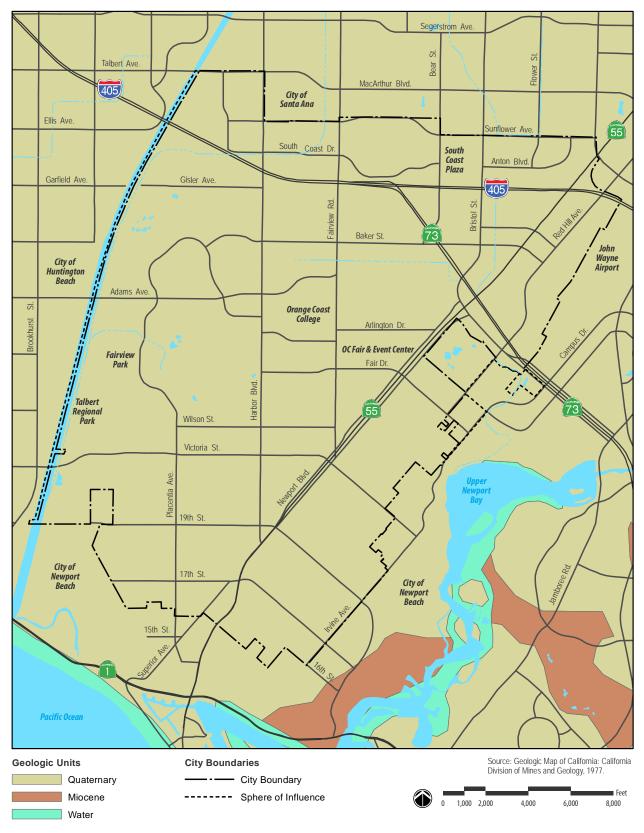


Figure 4.6-1 Geologic Map

### Peat Deposits

Peat deposits are located adjacent to the Santa Ana River and in the vicinity of Upper Newport Bay (see Figure 4.6-2, *Soil Types*). The size of the deposits in Costa Mesa is not sufficient to justify extraction. However, peat does provide an unstable base for construction and must be removed prior to development.

### Seismicity

#### Earthquake Faults

Four major faults or zones present a seismic hazard for Costa Mesa: the Newport-Inglewood structural zone, Whittier fault zone, San Andreas fault zone, and San Jacinto fault zone. Other faults with lesser seismic hazard include the El Modeno, Norwalk, and Aliso faults (see Figure 4.6-3, *Regional Fault Map*).

The intensity of earthquakes is measured, or expressed, in terms of two scales. The Richter Scale measures the strength of an earthquake, or the strain energy released, as determined by seismographic observations. The Mercalli Intensity Scale describes the intensity in terms of observable impacts. Both measurement systems are referenced in the following discussions.

### Newport-Inglewood Structural Zone

The Newport-Inglewood structural zone consists of northwesterly trending folded hills and echelon faults extending over 40 miles from the Santa Monica Mountains to Newport Beach, where it projects offshore for an unknown distance. The zone is seismically active, with numerous recorded earthquakes. The largest and most completely documented was the Long Beach earthquake of 1933 (6.3M), which resulted in strong shaking in Costa Mesa and throughout Southern California.

The Newport-Inglewood structural zone is approximately 3.5 miles wide within Costa Mesa. Five northwest-trending traces (Exhibit 4.5-3, Regional Fault Map) have been projected through the City based primarily on subsurface data. The main trace, classified on the basis of seismic activity, lies 0.3 miles south of the City limits.

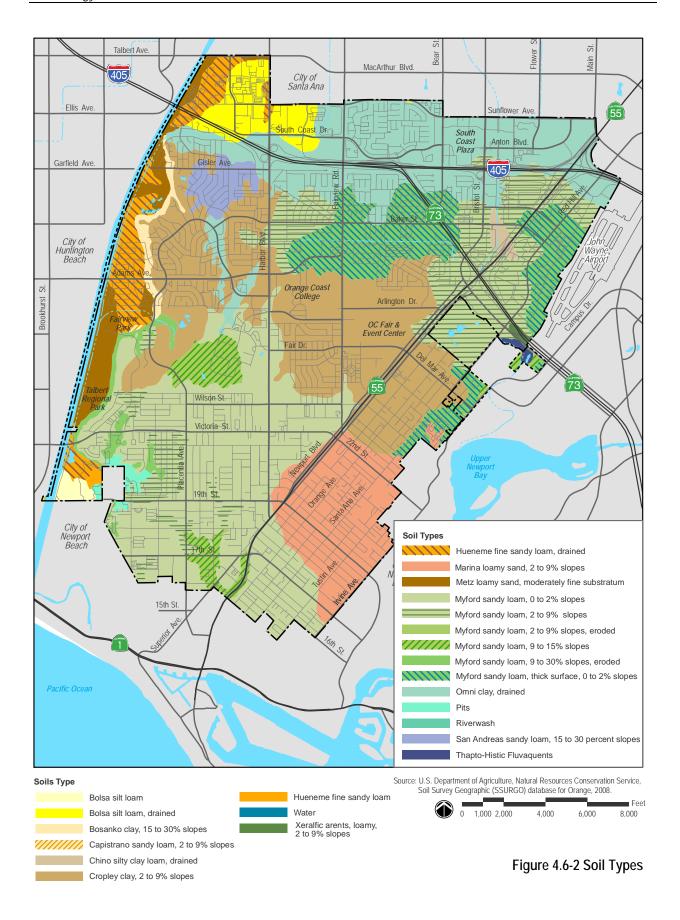
#### Whittier Fault Zone

The Whittier fault extends over 20 miles from the Whittier Narrows near Whittier, southeasterly to the Santa Ana River, where it merges with the southeasterly trending Elsinore fault. Collectively, these two faults combined with smaller faults are known as the Whittier-Elsinore fault zone. The nearest approach to the City of Costa Mesa is approximately 15 miles to the northeast.

No major or moderate size earthquakes have occurred along the Whittier fault in historic time; however, microseismic data show clustering of events along its trace demonstrating that it is seismically active. On October 1, 1987, an earthquake seriously impacted the Whittier area but did not occur on the Whittier Fault; a series of large aftershocks occurred as well. The 5.9 magnitude earthquake occurred along a previously unidentified fault located in Los Angeles. The fault has since been named the Elysian Hills Fault.

#### San Andreas Fault Zone

The San Andreas is the best known of all California faults due mainly to its known historic seismic activity and destructive capabilities. The center section of the fault ruptured the ground surface in the 1857 Fort Tejon earthquake (8.3± M estimated), causing considerable damage from ground shaking over thousands of square miles. Its closest approach to Costa Mesa is 48 miles, lying on the northeastern flank of the San Bernardino Mountains.



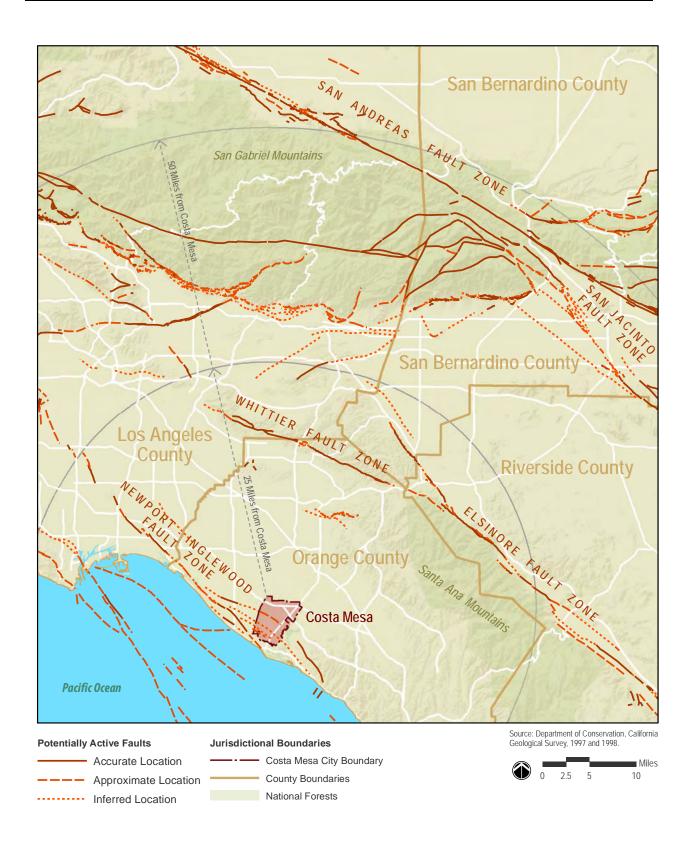


Figure 4.6-3 Regional Fault Map

#### San Jacinto Fault Zone

The San Jacinto fault zone extends over 180 miles from its junction with the San Andreas Fault southeast of Palmdale to the Colorado River delta. The closest approach of this fault to Costa Mesa is 44 miles. Several damaging historic events have occurred along the San Jacinto fault, the most notable being the Imperial County earthquake of 1940, which generated surface faulting. Although the San Jacinto fault zone is slightly closer to Costa Mesa, the potential levels of ground shaking from the San Andreas Fault are higher because of its larger maximum credible earthquake.

### **Ground Shaking**

The effects of seismically induced ground shaking are probably the most critical potential seismic hazards to the City of Costa Mesa. The severity of ground shaking at any particular site depends primarily upon the magnitude of the earthquake, the location of the causative fault with respect to the site, and soil and/or rock conditions at the site.

The effects of ground shaking in Costa Mesa will vary considerably depending on the distance of the seismic source to the City and the duration of strong vibratory motion. Ground shaking from distant seismic events (greater than 40 miles), will be of a different nature than events within 10 miles of Costa Mesa. For more distant, large (greater than 7.5M) events such as those that occur on the San Andreas Fault, the ground shaking will reflect a predominance of long period waves. This will have minimal effects upon structures less than three stories in height, but will affect flexible structures (typically high-rise buildings, greater than three stories), especially if the natural period of the building should coincide with that of the long period earthquake waves. The resultant amplifications of motions could result in serious damage to high-rise structures. Short period waves, however, are generally very destructive near the epicenter of moderate- and large-magnitude seismic events, causing severe damage predominately to low-rise rigid structures (fewer than three stories) not specifically designed to resist them.

The duration of strong ground motion is a function of magnitude and distance from the causative fault. It is probably the single most important factor in producing excessive damage to structures. Long duration, reasonably high acceleration, and considerable amplitudes, as would occur from a maximum seismic event on the Newport-Inglewood structural zone, are the combination which would do the most damage to buildings. A distant maximum seismic event on the San Andreas Fault would produce less intensity of shaking; however, duration of strong ground motion would be longer resulting in a high potential for damage to high-rise flexible structures.

#### **Ground Failure**

Seismically induced ground failure as discussed in this section includes liquefaction, differential compaction, ground lurching, ground cracking, and earthquake-induced slope failures.

#### Liquefaction

Liquefaction of surface or subsurface materials is the result of strong ground shaking of water-saturated, loose to moderately dense sand and silty sand. It is defined as the transformation of a granular material from a solid state into a liquefied state as a consequence of increased pore water pressure that occurs during an earthquake. Liquefaction can result in shifting of foundations, settling of roadways, and rupture of underground pipelines and cables. Buildings and other objects on the ground surface can settle, tilt, and collapse as the foundations beneath them lose support, and lightweight buried structures may float to the surface. Four types of general failure commonly result from liquefaction: lateral spreading, flow failure, ground oscillation, and loss of bearing strength.

Even though Costa Mesa has been subjected to strong ground shaking in the past (e.g., the 1933 Long Beach earthquake), available historic records fail to confirm an instance of liquefaction. However, instances of liquefaction have been reported in the nearby cities of Huntington Beach and Newport Beach. The potential exists for liquefaction in localized sections within the northwest and western portions of the City (see Figure 4.6-4, Liquefaction).

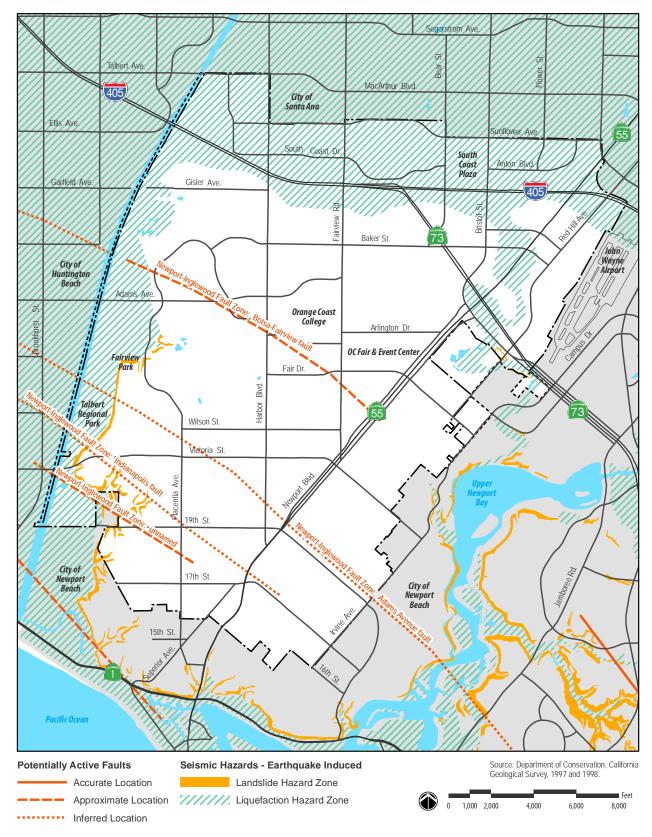


Figure 4.6-4 Liquefaction

### Differential Compaction or Settlement

Differential ground settlement resulting from earthquake ground shaking is potentially damaging to structures and buried utilities and services. Differential settlement may occur in cohesionless sediments where differences in densities in adjacent materials lead to different degrees of compaction during ground shaking. In the case of saturated cohesionless sediments, post earthquake settlement may occur when excess pore-water pressures generated by the earthquake dissipate. For soft, saturated, cohesive soils such as the known peat deposits within Costa Mesa, post-earthquake differential settlement may also occur (see Figure 4.6-2, *Soil Types*). Whereas differential settlement is a potential hazard in Costa Mesa, the significance of the hazard at any particular site may only be determined by soils investigations.

### Ground Cracking, Ground Lurching, and Lateral Spreading

Both ground lurching and cracking are secondary features resulting from strong to moderately strong ground shaking and may be associated with liquefaction. Ground cracking usually occurs in near-surface materials, reflecting differential compaction or liquefaction of underlying materials. The potential for ground cracking exists especially in those areas of the City which have a moderate to high potential for liquefaction and in regions of known peat deposits.

Ground lurching results when soft, water-saturated surface soils are thrown into undulatory motion. Areas within Costa Mesa occur in those regions indicated on Figure 4.6-4, *Liquefaction* that have a high potential for liquefaction.

Lateral spreading (a form of landsliding) is referred to as limited displacement ground failure, often associated with liquefaction. Compact surface materials may slide on a liquefied, or low shear strength layer at shallow depth, moving laterally several feet down slopes of less than two degrees. Lack of adequate subsurface data prohibits delineating areas in Costa Mesa prone to shallow landsliding. Such a hazard may be present where conditions conducive to shallow liquefaction exist or where soils exist along the bluffs adjacent to the Santa Ana River or Newport Bay.

### Slope Stability

Seismically related slope stability problems include landslides, rockfalls, mudslides, and avalanches. Since the City is primarily located on flat to gently sloping terrain (generally less than one percent), the potential for these hazards is remote. However, the potential exists for earth movements during strong ground shaking along the southern City boundary. In recognition of this potential, the City's zoning ordinance requires a 10-foot building setback from the bluff crest. Buildings may locate closer with the approval of a Conditional Use Permit, provided that it is demonstrated that the structure does not endanger the stability of the slope, interfere with fire access, or detract from the visual integrity of the slopes.

### Surface Faulting

Surface faulting—rupture of the ground surface along a causative fault trace—is associated with the primary movement that produced the seismic event and should not be confused with secondary ground cracking which is simply a result of shaking and may occur at some distance from the causative fault. The likelihood of surface rupture on a given fault can be determined principally by studying the seismic history of the fault and reviewing geologic evidence which suggests historic or prehistoric surface rupture. Many past studies have shown that future surface faulting is most likely to occur where the trace ruptured last, especially if there is evidence of repeated and significant displacement on the trace.

### Seismically Induced Water Waves

Seismically induced water waves include tsunamis, seiches, and waves generated by failure of retaining structures. Tsunamis are generated by earthquake-induced subsea dislocations or landslides which cause large volumes of water to move in the form of ocean waves. Coastline configuration and tidal influx may cause local amplifying effects. A seiche is a low amplitude wave generated in a restricted body of water due to earthquake motions. Refer to Figure 4.6-5, *Flooding and Seismically Induced Waves*.

#### **Tsunamis**

Costa Mesa is three-quarters of a mile inland from the Pacific Ocean at elevations between approximately 30 to 100 feet above sea level. The southern portion of the City resides on 100-foot bluffs overlooking the City of Newport Beach. The potential for tsunami effects within most of the City is negligible (CMGP Safety Element, 2000). However, within areas of the Santa Ana River Channel, where low elevations occur, the potential exists for tsunami effects.

### Seiches

The absence of any large bodies of water within Costa Mesa and the location of high bluffs adjacent to Newport Bay preclude the possibility of damage from seiche effects.

### **Topsoil and Erosion**

Erosion is the removal of soil and other geologic fragments from the landscape as a result of wind, water, or ice. Erosion occurs as a result of three processes: detachment, entrainment, and transport. Detachment results when a particle loses cohesion with surrounding material via a medium that moves the particle, most commonly wind, water, or ice. Entrainment is the lifting of the particle and transport is the movement of the particle. The process of erosion will eventually end in the deposition of the eroded particle by some factor that reduces the velocity of the particle until it settles (Pidwirney 2006).

Erosion can result in a variety of hazards and issues within the planning area. Wind-related erosion and blowsand can cause visibility problems and damage architectural coatings and building material. Erosion due to rain or other fluvial events can deposit sediments in downstream water bodies, potentially changing drainage patterns and effecting biological regimes. Freshly graded soils are most susceptible to erosion. Unpaved roadways and other areas that are not stabilized by vegetation or otherwise capped can also erode.

## Regulatory Framework

#### Alguist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Special Studies Zones Act was signed into law in 1972 (renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994). The Act's primary purpose is to mitigate the fault rupture hazard on human life and property by limiting the potential for siting human occupancy structures across an active fault trace.

The Act requires the State Geologist (Chief of the California Geological Survey) to delineate *Earthquake Fault Zones* along faults that are "sufficiently active and well defined." These faults show evidence of Holocene surface displacement along one or more of their segments (sufficiently active) and are clearly detectable by a trained geologist as a physical feature at or just below the ground surface (well defined). The boundary of an *Earthquake Fault Zone* is generally about 500 feet from major active faults, and 200 to 300 feet from well-defined minor faults. The Act dictates that cities and counties withhold development permits for sites within an Earthquake Fault Zone until geologic investigations demonstrate that the sites are not threatened by surface displacements from future faulting.

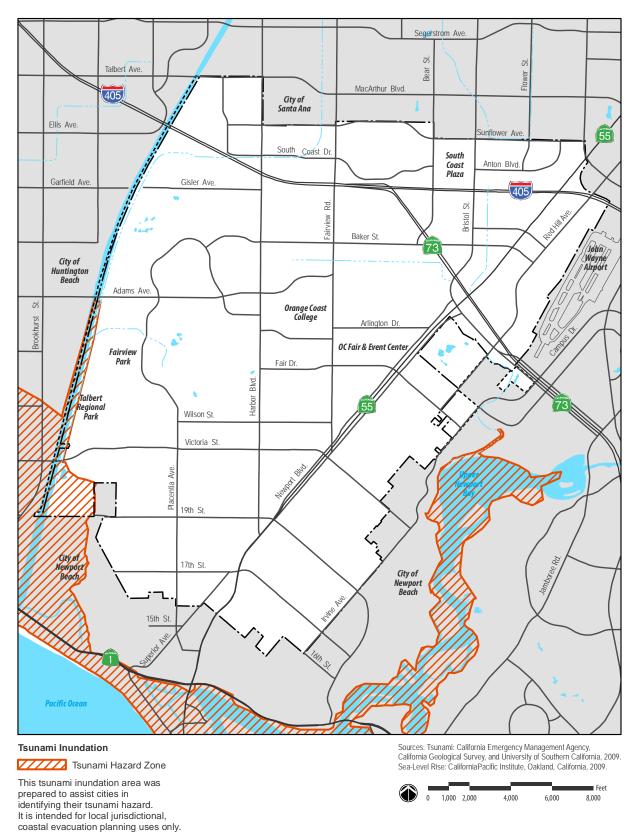


Figure 4.6.5 Flooding and Seismically Induced Waves

Alquist-Priolo maps are distributed to all affected cities and counties for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within these zones. Projects include all land divisions and most structures for human occupancy. State law exempts single-family wood-frame and steel-frame dwellings that are less than three stories and are not part of a development of four units or more. However, local agencies can be more restrictive. Applicable faults and boundaries of the State-delineated fault zones are shown on Figure 4.6-6, *Geologic Hazards Map*.

### Seismic Hazards Mapping Act

The Alquist-Priolo Earthquake Fault Zoning Act addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. Recognizing this, in 1990, the State passed the Seismic Hazards Mapping Act (SHMA), which addresses non-surface fault rupture earthquake hazards, including strong ground shaking, liquefaction, and seismically induced landslides. The California Geological Survey (CGS) is the principal State agency charged with implementing the Act. Pursuant to the SHMA, the CGS is directed to provide local governments with seismic hazard zone maps that identify areas susceptible to liquefaction, earthquake-induced landslides and other ground failures. The goal is to minimize loss of life and property by identifying and mitigating seismic hazards. The seismic hazard zones delineated by the CGS are referred to as "zones of required investigation." Site-specific geological hazard investigations are required by the SHMA when construction projects fall within these areas.

The CGS, pursuant to the 1990 SHMA, has been releasing seismic hazards maps since 1997, with emphasis on the large metropolitan areas of Los Angeles, Orange, and Ventura counties; funding for this program limits the geographic scope of the studies to these three counties in Southern California. As a result, there are no State-issued (and, therefore, official) seismic hazard zone maps for the City of Costa Mesa.

### California Building Code

The California Building Standards Law states that every local agency enforcing building regulations must adopt the provisions of the California Building Code (CBC) within 180 days of its publication; however, each jurisdiction can require more stringent regulations issued as amendments to the CBC. The publication date of the CBC is established by the California Building Standards Commission, and the code is known as Title 24 of the California Code of Regulations. In the past, the CBC was modeled on the Uniform Building Code (UBC); however, beginning with the 2007 version, the CBC is now modeled after the International Building Code (IBC). It should be emphasized that the building codes provide minimum requirements to prevent major structural failure and loss of life. In some cases these requirements may not be adequate, particularly in the areas of faulting and seismology, where the pool of knowledge is rapidly growing and evolving. Consequently, it is important that geotechnical consultants working with the City, as well as reviewers of their work, keep up to date on current research.

The City of Costa Mesa adopted the 2013 CBC through Ordinance 0-03-10 on November 5, 2013. The 2013 CBC bases its seismic design criteria on *maximum considered ground motion* through maps prepared by the USGS for the National Seismic Hazard Mapping Program (see Section 1613). Chapter 18 (Soils and Foundations) and Appendix J (Grading) of the 2013 CBC have also been adopted by the City to establish grading and foundation standards. Standards include requirements for excavation, fill, footings, retaining walls, and pier and pile foundations. Pursuant to the CBC, soils reports are required to be submitted prior to issuance of grading permits.

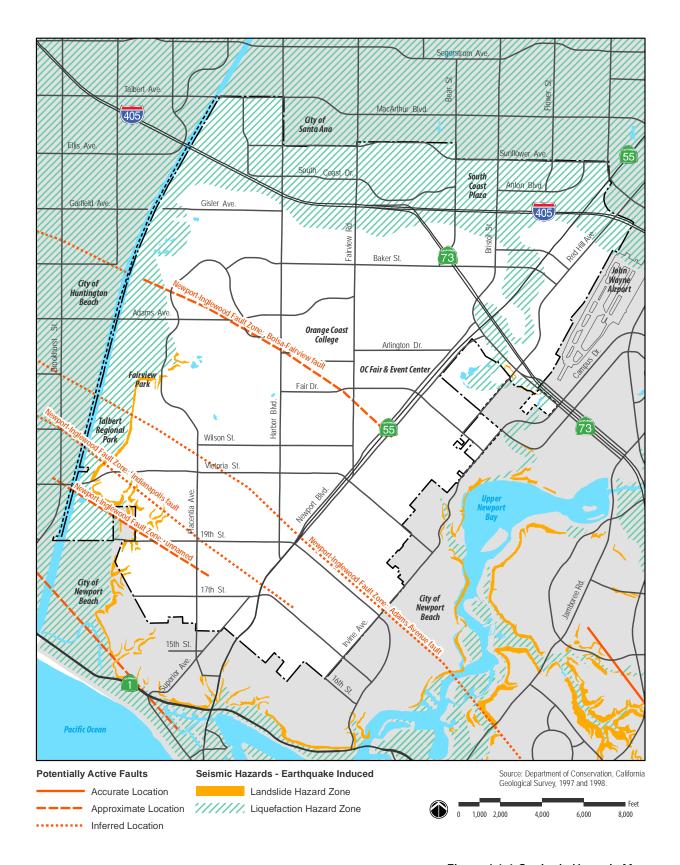


Figure 4.6-6 Geologic Hazards Map

#### Real Estate Disclosure Act

Since June 1, 1998, the Natural Hazards Disclosure Act has required that sellers of real property and their agents provide prospective buyers with a *Natural Hazard Disclosure Statement* when the property being sold lies within one or more State-mapped hazard areas. If a property is located in a Seismic Hazard Zone as shown on a map issued by the State Geologist, the seller or the seller's agent must disclose this fact to potential buyers. The law specifies two ways that this disclosure can be made. One is to use the Natural Hazards Disclosure Statement as provided in Section 1102.6c of the California Civil Code.

The other way is to use the Local Option Real Estate Disclosure Statement as provided in Section 1102.6a of the California Civil Code. The Local Option Real Estate Disclosure Statement can be substituted for the Natural Hazards Disclosure Statement only if the Local Option Statement contains substantially the same information and substantially the same warning as the Natural Hazards Disclosure Statement.

### **Unreinforced Masonry Laws**

Enacted in 1986, the Unreinforced Masonry Law (Section 8875 et seq. of the California Government Code) required all cities and counties in Seismic Zone 4 (zones near historically active faults) to identify potentially hazardous unreinforced masonry (URM) buildings in their jurisdictions, establish a URM loss reduction program, and report their progress to the State by 1990. The owners of such buildings were to be notified of the potential earthquake hazard these buildings pose. Costa Mesa has not yet adopted a URM ordinance.

### **Orange County General Plan Safety Element**

Orange County's Safety Element, adopted as part of the General Plan in July 2014, provides general information on natural hazards in the County, including the Costa Mesa area. County land use policies and decisions based on natural hazards apply to the sphere of influence. The County's Safety Element includes policies that support public education, expansion of disaster relief programs, and integration of data into planning and implementation programs to protect against natural and human-made hazards, including those from geologic and wind-related origins.

### **Orange County Development Code**

The purpose of the Orange County Development Code is to implement the General Plan by classifying and regulating land uses within the unincorporated areas of the County (including those properties within Costa Mesa's sphere of influence). Specifically, it provides: (1) standards and guidelines for growth and development; (2) a basis for county-wide planning and construction of public facilities such as water supply and flood control; (3) a means to preserve natural and cultural resources, and (4) measures to promote public safety. The code addresses zoning, permitting, and investigation requirements for areas subject to potential geologic problems; geologic and geotechnical report requirements; and standards for design and grading of projects. Portions of the code also identify and address areas susceptible to flooding, as well as dust and wind-borne soil erosion.

As established in the Development Code, the County has created Overlay Districts for areas having special physical characteristics that require additional standards and requirements. The County's Geologic Hazard Overlays include earthquake fault zones, liquefaction, and landslides and has been used in the discussion, mapping, and analysis of potential geologic hazards in this document. The County's Geologic Hazard Overlay identifies liquefaction, landslide, and faulting hazards within the planning area.

## Thresholds of Significance

A significant impact could occur if the General Plan Amendments would:

- A. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42).
  - 2. Strong seismic ground shaking.
  - 3. Seismic-related ground failure, including liquefaction.
  - 4. Landslides
- B. Result in substantial soil erosion or the loss of topsoil.
- C. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- D. Be located on expansive soil, as defined in the Uniform Building Code (2006), creating substantial risks to life or property.
- E. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

### Environmental Impact



Hazardous impacts to people and structures resulting from the potential rupture of a known earthquake fault would be less than significant with implementation of existing regulatory standards and policies in the draft General Plan Safety Element.

Four major faults or zones present a seismic hazard in Costa Mesa: the Newport-Inglewood structural zone, the Whittier fault zone, the San Andreas fault zone, and the San Jacinto fault zone. Development built on or in the near vicinity of the Newport-Inglewood zone could potentially be exposed to a fault rupture risk because this fault system is sufficiently active to produce earthquakes and potentially rupture. The proposed Land Use Element includes residential land use designations within the Newport-Inglewood fault zone area.

Goal and Objective S-1 of the draft General Plan Safety Element address risk management of natural disasters. Policy S-1.A requires consideration of geologic hazard constraints, impacts, and mitigation when making public decisions relating to land development. Policy S-1.C requires preparation of geologic studies for developments located on or adjacent to bluffs. Proposed amendments to the Safety Element include updated policies related to geologic and seismic safety in support of the objective of avoiding or preventing damage from geologic hazards by assessing the nature, location, and appropriate control measures to mitigate for the hazard. Specifically, Policy S-1.E requires the enforcement of applicable building codes relating to the seismic design of structures to reduce the potential for loss of life and property damage. Moreover, in the case of any future fault rupture, a geologic study would identify the exact position of the fault on a development site and then establish an appropriate setback to prevent structural damage should the fault rupture. This standard is implemented as part of the City's routine development project review process, pursuant to CEQA, and would avoid placement of buildings within areas potentially exposed to fault rupture hazards. Pursuant to this standard and the new geologic and seismic safety policies of the proposed Safety Element Amendment, potential impacts would be less than significant.

#### GOAL S-1: RISK MANAGEMENT OF NATURAL AND HUMAN-CAUSED DISASTERS

The following policies mandate, encourage, or allow certain actions to be pursued through the General Plan horizon year. Together the policies serve as strategic directions for City staff and partners, highlighting where time and resources should be focused. Each policy either may implemented through one of actions, and some actions support several policies.

Objective S-1. Work to mitigate or prevent potential adverse consequences of natural and human-caused disasters.

### Geologic and Seismic Safety

Policy S-1.A: Continue to incorporate geotechnical hazard data into future land use decision-making, site design, and construction standards.

Policy S-1.B: Enforce standards, review criteria, and other methods to ensure that structures on or adjacent to bluffs are set back sufficiently to preserve the natural contour and aesthetic value of the bluff line and to provide sufficient access for fire protection.

Policy S-1.C: Require geologic surveys of all new development located on or adjacent to bluffs.

Policy S-1.D: Encourage retrofitting of structures—particularly older buildings—to withstand earthquake shaking and landslides consistent with State and Historic Building codes.

Policy S-1.E: Enforce applicable building codes relating to the seismic design of structures to reduce the potential for loss of life and property damage.

Policy S-1.E: Identify through a study the issue of unreinforced masonry buildings in Costa Mesa.

Provide assistance if necessary to unreinforced masonry buildings once those

buildings have been identified.

IMPACT 4.6.A.2 Impacts to life and property resulting from strong seismic groundshaking would be less than significant with implementation of existing regulatory standards and draft General Plan policies that support design parameters related to ground shaking.

Future development within the planning area would subject people and structures to potential earthquake hazards due to the seismically active nature of Southern California. The San Jacinto, San Andreas, Newport-Inglewood, and Whittier faults have the potential of generating earthquakes of magnitudes ranging from 6.5 to 7.5 on the Richter scale. Strong earthquakes can cause widespread property damage, injury, and loss of life. Secondary impacts include fires and disruption of utilities and service systems.

The City's building plan check and building code compliance procedures include requirements to design structures in accordance with the appropriate ground–shaking design parameters set forth in the CBC. These parameters are based on the seismic setting and potential intensity levels of the earthquake faults most likely to generate significant ground shaking in the planning area. The proposed amended Safety Element supports this commitment to enforcement of CBC ground-shaking design parameters through Geologic and Seismic Safety Policy S-1.E that requires the enforcement of applicable building codes relating to the seismic design of structures to reduce the potential for loss of life and property damage. Enforcement of CBC design parameters related to ground shaking and implementation of the proposed Safety Element Amendments would reduce potential impacts to less than significant levels.

IMPACT 4.6.A.3 Impacts to life and property resulting from seismically induced liquefaction or settlement would be less than significant with implementation of existing regulatory standards and draft General Plan policies that require investigation of site conditions for liquefaction susceptibility.

As discussed under existing conditions, two of the three required factors for liquefaction to occur are prevalent throughout the planning area (the potential for strong ground shaking and loose, unconsolidated sediments). Therefore, the primary concern for liquefaction occurrence revolves around groundwater levels. Liquefaction potential within the planning area is associated with the Santa Ana River and the coastal area of the City, where groundwater levels are anticipated to be within 50 feet of the surface. This is mainly confined to localized sections within the northwest and western portions of the City. The remainder of the planning area's groundwater level is more than 50 feet below the surface; thus, the planning area generally has a low potential for liquefaction. The majority of the planning area is subject to impacts associated with settlement soils due to the widespread presence of young, unconsolidated alluvial soils.

The existing General Plan Safety Element does not include any objectives or policies that require developers to prepare geotechnical studies to identify any liquefaction and other ground failure potential and require appropriate design parameters on a project-by-project basis. However, soils reports are required under the City-adopted design standards of the 2010 CBC. Typical design features to prevent impacts associated with liquefaction are ground improvement or foundational design. Ground improvement includes removal and recompaction of low-density soils and removal of excess groundwater. Similarly, over-excavation and soil recompaction is a common method to prevent soil compression impacts. Importing of soils may also be required if soils contain excessive amount of organic material or deleterious objects (such as boulders). Foundation design includes construction of piles to reinforce shallow foundations or construction of subsurface retaining structures. Moreover, the proposed amended Safety Element includes new policies associated with liquefaction. Specifically, Policy S-1.F, calls for the continued implementation of the Seismic Hazard Mapping Act, which requires sites within liquefaction hazard areas to be investigated for liquefaction susceptibility prior to building construction or human occupancy. Implementation of existing standards and implementation of the proposed General Plan Safety Element Update, CBC, and City Design Guidelines, would reduce impacts associated with seismically induced liquefaction and settlement to less than significant levels.

### Liquefaction and Landslides

Policy S-1.F: Continue to implement the Seismic Hazard Mapping Act, which requires sites within liquefaction hazard areas to be investigated for liquefaction susceptibility prior to

building construction or human occupancy.

Policy S-1.G: Consider site soils conditions when reviewing projects in areas subject to liquefaction

or slope instability.

IMPACT 4.6.A.4 Impacts to life and property within the planning area related to seismically induced landslides would be less than significant with implementation of existing regulatory standards and draft General Plan policies that require the consideration of site soil conditions when reviewing projects in areas subject to landslide.

Since the topography of the City consists of generally flat to gently sloping terrain, the potential for slope-stability hazards like landslides is minimal. However, the potential remains for earth movements during strong ground shaking along the bluffs along the southern portion of the City and along the Back Bay.

The City uses Chapter 18 and Appendix J of the 2010 CBC to regulate all grading design and criteria. This includes design criteria for development on slopes and at the toe of slopes. The CBC requires soils reports to include slope

stability studies that discuss grading procedures, soil design criteria for structures and embankments, and site geology. Stabilization of slopes for development can involve a number of features, including replacing weak portions of a slope with engineered fill, reinforcements such as soil cement, and sub-drainage systems to remove excess water from within the slope. These provisions are designed to minimize risk of slope failure should development be proposed on a hillside. Future development will also be subject to standard environmental review in accordance with CEQA. Moreover, the proposed amendments to the Safety Element include new policies associated with slope stability and landslide. Specifically, Policy S-1.D encourages retrofitting of structures—particularly older buildings—to withstand earthquake shaking and landslides consistent with State and Historic Building codes. Policy S-1.G also requires consideration of site soils conditions when reviewing projects in areas subject to slope instability. Implementation of existing environmental and grading standards, as well as implementation of the proposed amended Safety Element, would reduce impacts associated with landslides to less than significant levels.

IMPACT 4.6.B

Impacts related to wind-blown soil erosion and loss of topsoil would be less than significant.

Future development under the General Plan Amendments could cause impacts associated with soil erosion resulting in increased fugitive dust that affects air quality and water quality degradation due to increased sedimentation. For a discussion of air quality-related impacts related to erosion, please refer to Section 4.3 (Air Quality). For a discussion of sedimentation, see Section 4.9 (Hydrology and Water Quality). Erosion of topsoil results in the loss of nutrient-rich soils that support the establishment and continuance of vegetation.

Wind-driven erosion can occur where flat, barren surfaces are exposed to high-velocity winds. Existing vacant parcels are not likely to contribute to wind-blown erosion because native vegetation stabilizes soil, preventing it from leaving a site. Developed sites curtail wind-driven erosion by preventing wind from contacting soil, due to the presence of buildings, parking lots, other impervious surfaces, and landscaping, etc. Landscaping stabilizes soil in the same manner that native vegetation does, thereby minimizing windblown erosion. Wind-blown erosion in the planning area is likely to decrease over the long-term as new development replaces any areas of exposed soil, such as on agricultural fields and vacant lots. Impacts associated with wind-blown soil erosion and loss of topsoil would be less than significant.

IMPACT 4.6.C

Impacts related to ground failure would be less than significant with implementation of existing regulations and draft General Plan policies.

As discussed in Impact 4.6.A.3 above, the majority of the planning area is subject to impacts associated with settlement and compressible soils due to the widespread presence of young, unconsolidated alluvial soils. Settlement, collapse, and subsidence are all related to the generally loose and dry nature of the planning areas' soils. The lack of clay bonds that support soil strength in unconsolidated soil makes them susceptible to weakness under pressure.

Policy S-1.A of the existing General Plan Safety Element only requires consideration of geologic hazard constraints, impacts, and mitigation when making public decisions relating to land development. Policy S-1.C of the existing General Plan Safety Element only requires preparation of geologic studies for developments located on or adjacent to bluffs. The proposed amended Safety Element includes new policies related to geologic and seismic safety in support of the objective of avoiding or preventing damage from geologic hazards by assessing the nature, location, and appropriate control measures to mitigate for the hazard. Specifically, Policy S-1.E requires the enforcement of applicable building codes relating to the seismic design of structures to reduce the potential for loss of life and property damage. Moreover, in the case of any future fault rupture, a geologic study would identify the exact position of the fault on a development site and then establish an appropriate setback to prevent structural damage should the fault rupture. This standard is implemented as part of the City's routine development project review process, pursuant to CEQA, and would avoid placement of buildings within areas potentially exposed to fault rupture hazards. Pursuant to this standard and the new

geologic and seismic safety policies of the proposed amended Safety Element, potential impacts would be less than significant. Implementation of existing standards and regulations would reduce impacts associated with ground failure to less than significant levels.

The planning area is not likely to be subject to subsidence associated with development due to the lack of clay within the soil, although localized subsidence could occur depending on soil specifics such as variation in grain size. Future development within the planning area, however, would increase the need for groundwater extraction to serve the water consumption needs of the community. Unless this is accomplished in a controlled manner and/or offset through sufficient recharge activities, there could be a potential for ground subsidence due to fluid withdrawal that weakens soil cohesion and leads to collapse (hydroconsolidation).

The Mesa Water District Urban Water Management (UWMP) includes programs for the long-term management of area groundwater basins. The primary means of ensuring long-term maintenance of groundwater levels are water conservation programs. Future groundwater recharge facilities may also be needed to ensure maintenance of groundwater levels. Implementation of the policies of the Water District and the City are designed to ensure groundwater resources are recharged both through natural and assisted means. Water conservation helps to maintain groundwater levels by reducing the need to extract from them. Implementation of these policies would reduce impacts associated with subsidence by maintaining adequate groundwater levels. Impacts would be less than significant.

IMPACT 4.6.D

Impacts related to expansive soils would be less than significant with implementation of existing regulations.

The General Plan Amendments would not directly subject people or structures to hazards associated with expansive soils because the project does not authorize any construction project, any development plan, or any other land-altering activities.

Impacts associated with expansive soils are generally structurally related, including cracked walls and foundations. Avoiding the development of new structures in areas subject to expansive soils is the best way to avoid any potential impacts. If this is unavoidable, building areas with expansive soils may be pre-saturated to a moisture content and depth specified by the project's soil engineer, thereby pre-swelling the soil prior to constructing the structural foundation or hardscape. This method is often used in conjunction with strengthened foundations that can resist small ground movements without cracking. Adequate surface drainage control is necessary to ensure that soils are not oversaturated in the future.

Soils testing to determine expansive characteristics are required for new development, pursuant to Chapter 18 and Appendix J of the CBC. Mitigation of expansive conditions is also required and must be fully defined in the routine grading permit process. The City will continue to administer these CBC regulations, and any updates thereto, for all new development in the planning area. This ongoing regulatory program would avoid significant impacts involving expansive soils.

IMPACT 4.6.E

No impacts related to soils and septic systems would occur.

Since the planning area is supported by a fully functioning sewer system and septic systems are used only at limited sites in the planning area, no impact related to soils and septic systems would occur.

# Mitigation Measures

No mitigation is required.

# References

Department of Conservation, Division of Oil, Gas, and Geothermal Resources. 2015. Well Status, July 2015

Pidwirny, Michael. 2006. University of British Columbia, Okanagan. *Fundamentals of Physical Geography. 2nd ed. Erosion and Deposition.* 

This section discusses the existing greenhouse gas setting and analyzes potential effects that could result from implementation of the proposed General Plan Amendments. In response to the Notice of Preparation, no comments specific to greenhouse gases were submitted.

### Existing Conditions

### Climate Change

Climate change is the distinct change in measures of climate for a long period of time. Climate change can result from natural processes and from human activities. Natural changes in the climate can be caused by indirect processes such as changes in the Earth's orbit around the Sun or direct changes within the climate system itself (i.e. changes in ocean circulation). Human activities can affect the atmosphere through emissions of gases and changes to the planet's surface. Emissions affect the atmosphere directly by changing its chemical composition, while changes to the land surface indirectly affects the atmosphere by changing the way the Earth absorbs gases from the atmosphere. The term *climate change* is preferred over the term *global warming* because *climate change* conveys the fact that other changes can occur beyond just average increase in temperatures near the Earth's surface. Elements that indicate that climate change is occurring on Earth include:

- Rising of global surface temperatures by 1.3° Fahrenheit (F) over the last 100 years
- Changes in precipitation patterns
- Melting ice in the Arctic
- Melting glaciers throughout the world
- Rising ocean temperatures
- Acidification of oceans
- Range shifts in plant and animal species

Climate change is intimately tied to the Earth's greenhouse effect. The greenhouse effect is a natural occurrence that helps regulate the temperature of the planet. The majority of radiation from the Sun hits the Earth's surface and warms it. The surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping back into space and re-radiate it in all directions. This process is essential to supporting life on Earth because it keeps the planet approximately 60° F warmer than without it. Emissions from human activities since the beginning of the industrial revolution (approximately 150 years) are adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap heat, thereby contributing to an average increase in the Earth's temperature. Human activities that enhance the greenhouse effect are detailed below.

#### **Greenhouse Gases**

The greenhouse effect is caused by a variety of *greenhouse gases*. Greenhouse gases (GHGs) occur naturally and from human activities. Greenhouse gases produced by human activities include carbon dioxide ( $CO_2$ ), methane ( $CH_4$ ), nitrous oxide ( $N_2O$ ), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride ( $SF_6$ ). Since the year 1750, it is estimated that the concentrations of carbon dioxide, methane, and nitrous oxide in the atmosphere have increased over 36 percent, 148 percent, and 18 percent, respectively, primarily due to human activity. The primary GHGs are discussed below (US EPA 2015).

#### Carbon Dioxide

CO<sub>2</sub> is emitted and removed from the atmosphere naturally. Animal and plant respiration involves the release of carbon dioxide from animals and its absorption by plants in a continuous cycle. The ocean-atmosphere exchange

results in the absorption and release of  $CO_2$  at the sea surface. Carbon dioxide is also released from plants during wildfires. Volcanic eruptions release a small amount of  $CO_2$  from the Earth's crust.

Human activities that affect carbon dioxide in the atmosphere include burning of fossil fuels, industrial processes, and product uses. Combustion of fossil fuels is the largest source of carbon dioxide emissions in the United States, accounting for approximately 85 percent of all equivalent emissions. Because of the fossil fuels used, the largest of these sources are electricity generation and transportation. When fossil fuels are burned, the carbon stored in them is released into the atmosphere entirely as CO<sub>2</sub>. Emissions from on-site industrial activities also emit carbon dioxide such as cement, metal, and chemical production and use of petroleum produced in plastics, solvents, and lubricants.

#### Methane

Methane (CH<sub>4</sub>) is emitted from human activities and natural sources. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, soils, and wildfires. Human activities that cause methane releases include fossil fuel production, animal digestive processes from farms, manure management, and waste management. It is estimated that 50 percent of global methane emissions are human generated. Wetlands are the primary producers of methane in the world because the habitat is conducive to bacteria that produce methane during decomposition of organic material. Methane is produced from landfills as solid waste decomposes. Methane is a primary component of natural gas and is emitted during its production, processing, storage, transmission, distribution, and use. Decomposition of organic material in manure stocks or in liquid manure management systems also releases methane. Releases from animal digestive processes at agricultural operations are the primary source of human-related methane emissions.

### Nitrous Oxide

Anthropogenic (human) sources of nitrous oxide include agricultural soil management, animal manure management, sewage treatment, combustion of fossil fuels, and production of certain acids.  $N_2O$  is produced naturally in soil and water, especially in wet, tropical forests. The primary human-related source of  $N_2O$  is agricultural soil management due to use of synthetic nitrogen fertilizers and other techniques to boost nitrogen in soils. Combustion of fossil fuels (mobile and stationary) is the second leading source of nitrous oxide, although parts of the world where catalytic converters are used (such as California) have significantly lower levels than those areas that do not.

### **High Global Warming Potential Gases**

High global warming potential (GWP) gases (or fluorinated gases) are entirely manmade and are mainly used in industrial processes. HFCs, PFCs, and  $SF_6$  are high GWP gases. These types of gases are used in aluminum production, semiconductor manufacturing, electric power transmission, magnesium production and processing, and in the production of hydrochlorofuorocarbon-22 (HCFC-22). High GWP gases are also used as substitutes for ozone-depleting gases like chlorofluorocarbons (CFCs) and halons. Use of high GWP gases as substitutes for ozone-depleting substances is the primary use of these gases in the United States.

#### Water Vapor

It should be noted that water vapor is also a significant GHG in the atmosphere; however, concentration of water vapor in the air is primarily dependent on air temperature and cannot be influenced by humans.

GHGs behave differently in the atmosphere and contribute to climate change in different ways. Some gases have more potential to reflect infrared heat back towards the earth while some persist in the atmosphere longer than others. To equalize the contribution of GHGs to climate change, the Intergovernmental Panel on Climate Change (IPCC) devised a weighted metric to compare all greenhouse gases to carbon dioxide (IPCC 2007).

The weighting depends on the lifetime of the gas in the atmosphere and its radiative efficiency. As an example, over a time horizon of 100-years, emissions of nitrous oxide will contribute to climate change 298 times more than the same amount of emissions of carbon dioxide while emissions of HFC-23 would contribute 14,800 times more than the same amount of carbon dioxide. These differences define a gas's GWP. Table 4.7-1 (Global Warming Potential of Greenhouse Gases) identifies the lifetime and GWP of select GHGs. The lifetime of the GHG represents how many years the GHG will persist in the atmosphere. The GWP of the GHG represents the GHG's relative potential to induce climate change as compared to carbon dioxide.

Table 4.7-1 Global Warming Potential (GWP) of Greenhouse Gases (GHG)

GHG	Lifetime (yrs)	GWP
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC-14	50,000	7,390
PFC-116	10,000	12,200
Sulfur Hexafluoride	3,200	22,800
Source: IPCC 2007		

### **Carbon Sequestration**

Carbon sequestration is the process by which plants absorb CO<sub>2</sub> from the atmosphere and store it in biomass like leaves and grasses. Agricultural lands, forests, and grasslands can all sequester carbon dioxide, or emit it. The key is to determine if the land use is emitting carbon dioxide faster than it is absorbing it. Young, fast-growing trees are particularly good at absorbing more than they release and are known as a *sink*. Agricultural resources often end up being sources of carbon release because of soil management practices. Deforestation contributes to carbon dioxide emissions by removing trees, or carbon sinks, that would otherwise absorb CO<sub>2</sub>. Another form of sequestration is geologic sequestration. This is a manmade process that results in the collection and transport of CO<sub>2</sub> from industrial emitters (i.e. power plants) and injecting it into underground reservoirs.

### Climate Change and California

Specific, anticipated impacts to California have been identified in the 2009 California Climate Adaptation Strategy prepared by the California Natural Resources Agency (CNRA) through extensive modeling efforts (CNRA 2009).<sup>1</sup> General climate changes in California indicate that:

- California is likely to get hotter and drier as climate change occurs with a reduction in winter snow, particularly in the Sierra Nevada Mountains
- Some reduction in precipitation is likely by the middle of the century
- Sea-levels will rise up to an estimated 55 inches
- Extreme events such as heat waves, wildfires, droughts, and floods will increase
- Ecological shifts of habitat and animals are already occurring and will continue to occur

It should be noted that changes are based on the results of several models prepared under different climatic scenarios; therefore, discrepancies occur between the projections. The potential impacts of global climate change in California are detailed below.

#### Public Health and Welfare

Concerns related to public health and climate change includes higher rates of mortality and morbidity, change in prevalence and spread of disease vectors, decreases in food quality and security, reduced water availability, and increased exposure to pesticides. These concerns are all generally related to increase in ambient outdoor air temperature, particularly in summer.

Higher rates of mortality and morbidity could arise from more frequent heat waves at greater intensities. Health impacts associated with extreme heat events include heat stroke, heat exhaustion, and exacerbation of medical conditions such as cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. Climate change would result in degradation of air quality promoting the formation of ground-level pollutants, particularly ozone. Degradation of air quality would increase the severity of health impacts from criteria and other air pollutants discussed in Section 4.2 (Air Quality). Temperature increases and increases in carbon dioxide are also expected to increase plant production of pollens, spores, and fungus. Pollens and spores could induce or aggravate allergic rhinitis, asthma, and obstructive pulmonary diseases.

Precipitation projections suggest that California will become drier over the next century due to reduced precipitation and increased evaporation from higher temperatures. These conditions could result in increased occurrences of drought. Surface water reductions will increase the need to pump groundwater, reducing supplies and increasing the potential for land subsidence.

Precipitation changes are also suspected to impact the Sierra snowpack (see *Water Management* herein). Earlier snow melts could coincide with the rainy season and could result in failure of the flood control devices in that region. Flooding can cause property damage and loss of life for those affected. Increased wildfires are also of concern as the State *dries* over time. Wildfires can also cause property damage, loss of life, and injuries to citizens and emergency response services.

Sea-level rises would also threaten human health and welfare. Flood risks will be increased in coastal areas due to strengthened storm surges and greater tidal damage that could result in injury and loss of property and life. Gradual rising of the sea will permanently inundate many coastal areas in the state.

Other concerns related to public health are changes in the range, incidence, and spread of infectious, water-borne, and food-borne diseases. Changes in humidity levels, distribution of surface water, and precipitation changes are all likely to shift or increase the preferred range of disease vectors (i.e. mosquitoes). This could expose more people and animals to potential for vector-borne disease.

#### Biodiversity and Habitat

Changes in temperature will change the livable ranges of plants and animals throughout the state and cause considerable stress on these species. Species will shift their range if appropriate habitat is available and accessible if they cannot adapt to their new climate. If they do not adapt or shift, they face local extirpation or extinction. As the climate changes, community compositions and interactions will be interrupted and changed. These have substantial implications on the ecosystems in the state. Extreme events will lead to tremendous stress and displacement on affected species. This could make it easier for invasive species to enter new areas, due to their ability to more easily adapt. Precipitation changes would alter stream flow patterns and affect fish populations during their life cycle. Sea level rises could impact fragile wetland and other coastal habitat.

#### Water Management

Although disagreement among scientists on the causes and effects of long-term precipitation patterns in the State has occurred, it is generally accepted by scientists that rising temperatures will impact California's water supply due

to changes in the Sierra Nevada snowpack. Currently, the State's water infrastructure is designed to both gather and convey water from melting snow and to serve as a flood control device. Snowpack melts gradually through spring warming into early summer, releasing an average of approximately 15 million acre-feet of water. The State's concern related to climate change is that due to rising temperatures, snowpack melt will begin earlier in the spring and will coincide with the rainy season. The combination of precipitation and snowmelt would overwhelm the current system, requiring tradeoffs between water storage and flood protection to be made. Reduction in reserves from the Sierra Nevada snowpack is troublesome for California and particularly for Southern California. Approximately 75-percent of California's available water supply originates in the northern third of the state while 80 percent of demand occurs in the southern two-thirds. There is also concern that rising temperatures will result in decreasing volumes from the Colorado River basin. Colorado River water is important to Southern California because it supplies water directly to Metropolitan Water District of Southern California.

#### Agriculture

California is the most agriculturally productive state in the U.S. resulting in more than 37 billion dollars in revenue in 2008. California is the nation's leading producer of nearly 80 crops and livestock commodities, supplying more than half of the nation's fruit and vegetables and over 90 percent of the nation's production of almonds, apricots, raisin grapes, olives, pistachios, and walnuts. Production of crops is not limited to the Central Valley but also occurs in Southern California. Strawberries and grapes are grown in San Bernardino and Riverside Counties. Orange County and San Diego County also contribute to strawberry production. Cherries are also grown in Los Angeles and Riverside County. Anticipated impacts to agricultural resources are mixed when compared to the potentially increased temperatures, reduced chill hours, and changes in precipitation associated with climate change. For example, wheat, cotton, maize, sunflower, and rice are anticipated to show declining yields as temperatures rise. Conversely, grapes and almonds would benefit from warming temperatures. Anticipated increases in the number and severity in heat waves would have a negative impact on livestock where heat stress would make livestock more vulnerable to disease, infection and mortality. The projected drying trend and changes in precipitation are a threat to agricultural production in California. Reduced water reliability and changes in weather patterns would impact irrigated farmlands and reduce food security. Furthermore, a drying trend would increase wildfire risk. Overall, agriculture in California is anticipated to suffer due to climate change impacts.

### Forestry

Increases in wildfires will substantially impact California's forest resources that are prime targets for wildfires. This can increase public safety risks, property damage, emergency response costs, watershed quality, and habitat fragmentation. Climate change is also predicted to affect the behavior of plant species including seed production, seedling establishment, growth, and vigor due to rising temperatures. Precipitation changes will affect forests due to longer dry periods and moisture deficits and drought conditions that limit seedling and sapling growth. Prolonged drought also weakens trees, making them more susceptible to disease and pest invasion.

### Transportation and Energy Infrastructure

Higher temperatures will require increased cooling, raising energy production demand. Higher temperatures also decrease the efficiency of distributing electricity and could lead to more power outages during peak demand. Climate changes would impact the effectiveness of California's transportation infrastructure as extreme weather events damage, destroy, and impair roadways and railways throughout the state causing governmental costs to increase as well as impacts to human life as accidents increase. Other infrastructure costs and potential impacts to life would increase due to the need to upgrade levees and other flood control devices throughout the state. Infrastructure improvement costs related to climate change adaptation are estimated in the tens of billions of dollars.

# Planning and Regulatory Framework

#### **National Climate Protection Act**

The federal government began studying the phenomenon of global warming as early as 1978 with the National Climate Protection Act, 92 Stat. 601, which required the President to establish a program to "assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications."

#### **Global Climate Protection Act**

The 1987 Global Climate Protection Act, Title XI of Pub. L. 100-204, directed the U.S. Environmental Protection Agency (EPA) to propose a "coordinated national policy on global climate change," and ordered the Secretary of State to work "through the channels of multilateral diplomacy" to coordinate efforts to address global warming. Further, in 1992, the United States ratified a nonbinding agreement among 154 nations to reduce atmospheric GHGs.

#### Massachusetts v. EPA

In Massachusetts v. EPA (April 2, 2007), the United States Supreme Court held that GHGs fall within the Clean Air Act's definition of an "air pollutant," and directed the EPA to consider whether GHGs are causing climate change. If so, the EPA must regulate GHG emissions from automobiles under the Clean Air Act.

#### Clean Air Act

On December 7, 2009, the Administrator of the Environmental Protection Agency (EPA) signed two (2) distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act. The rule declared that GHGs endanger human health and is the first step to regulation through the federal Clean Air Act. The EPA defines air pollution to include the six (6) key GHGs – CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub>. The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to greenhouse gas pollution which threatens public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.

#### Corporate Average Fuel Economy (CAFE)

Congress has increased the corporate average fuel economy (CAFE) of the U.S. automotive fleet. In December 2007, President Bush signed a bill raising the minimum average miles per gallon for cars, sport utility vehicles, and light trucks to 35 miles per gallon by 2020. This increase in CAFE standard will create a substantial reduction in GHG emissions from automobiles, which is the largest single emitting GHG sector in California.

#### Executive Orders S-3-05 and S-30-15

Executive Order S-3-05 was issued by California Governor Arnold Schwarzenegger and established targets for the reduction of greenhouse gas emission at the milestone years of 2010, 2020, and 2050. Statewide GHG emissions must be reduced to 1990 levels by year 2020 and by 80 percent beyond that by year 2050. The Order requires the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate with other State departments to identify strategies and reduction programs to meet the identified targets. A Climate Action Team (CAT) was created and is headed by the Secretary of CalEPA who reports on the progress of the reduction strategies. The latest CAT *Biennial Report to the Governor and Legislature* was completed in April 2010 (CCAT 2010). CAT also works in 11

subgroups to support development and implementation of the Scoping Plan (see *California Global Warming Solutions Act* herein). S-30-15 added an intermediate greenhouse gas reduction target of 40 percent below 1990 levels by the year 2030.

### California Global Warming Solutions Act

The California State Legislature adopted the California Global Warming Solutions Act in 2006 (AB32). AB32 establishes the caps on statewide greenhouse gas emissions proclaimed in Executive Order S-3-05 and establishes a regulatory timeline to meet the reduction targets. The timeline is as follows:

January 1, 2009: Adopt Scoping Plan

January 1, 2010: Early action measures take effect

January 1, 2011: Adopt GHG reduction measures

January 1, 2012: Reduction measures take effect

December 31, 2020: Deadline for 2020 reduction target

As part of AB32, CARB had to determine what 1990 GHG emissions levels were and projected a *business-as-usual* (BAU) estimate for 2020 to determine the amount of GHG emissions that will need to be reduced. BAU is a term used to define emissions levels without considering reductions from future or existing programs or technologies. 1990 emissions are estimated at 427 million metric tons of carbon dioxide equivalent (MMTCO2E) while 2020 emissions (without implementation of reduction measures, but including economic downturn, Pavley, and Renewables Portfolio of 12-20%) is estimated at 507 MMTCO2E; therefore, California Statewide GHG emissions must be reduced 80 MMTCO2E by 2020, a reduction of approximately 16 percent.

CARB is responsible for implementation of AB32. Nine discrete early action measures; 35 additional measures were adopted in October 2007 and are now enforceable. The discrete early actions include a low carbon fuel standard, landfill methane capture regulations, reductions in HFCs from mobile air conditioning systems, fluorinated gas emissions from semiconductor manufacturing, sulfur hexafluoride from some industrial processes, high GWP gases in consumer products, and emissions from diesel auxiliary engines on ships at California Ports, improved fuel efficiency in heavy-duty diesel vehicles, and new tire pressure regulations. The early action programs form part of California's comprehensive strategy for achieving the GHG reduction targets.

#### Sustainable Communities and Climate Protection Act

In January 2009, California Senate Bill (SB) 375 went into effect known as the Sustainable Communities and Climate Protection Act (SCAG 2015). The objective of SB375 is to better integrate regional planning of transportation, land use, and housing to reduce sprawl and ultimately reduce greenhouse gas emissions and other air pollutants. SB375 tasks ARB to set greenhouse gas reduction targets for each of California's 18 regional Metropolitan Planning Organizations (MPOs). Each MPO is required to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The SCS is a growth strategy in combination with transportation policies that will show how the MPO will meet its GHG reduction target. If the SCS cannot meet the reduction goal, an Alternative Planning Strategy (APS) may be adopted that meets the goal through alternative development, infrastructure, and transportation measures or policies.

In the SCAG region, sub-regions can also elect to prepare their own SCS or APS. In August 2010, CARB released the proposed GHG reduction targets for the MPOs to be adopted in September 2010. The proposed reduction targets for the SCAG region were eight percent by year 2020 and 13 percent by year 2035. The eight percent 2020 target

was adopted in September 2010 and tentatively adopted the 13 percent year 2035 target until February 2011 to provide additional time for SCAG, CARB, and other stakeholders to account for additional resources (such as state transportation funds) needed to achieve the proposed targets. In February 2011, the SCAG President affirmed the year 2035 reduction target, and SCAG Staff updated CARB on additional funding opportunities. The status of funding was requested to be revisited again in year 2014.

On April 4, 2012, SCAG's Regional Council adopted the *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy: Towards a Sustainable Future.* The RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with SB 375. The RTP/SCS contains a host of improvements to the region's multimodal transportation system. These improvements include closures of critical gaps in the network that hinder access to certain parts of the region, as well as the strategic expansion of the transportation system where there is room to grow in order to provide the region with greater mobility. The RTP/SCS demonstrates the region's ability to attain and exceed the GHG emission-reduction targets set forth by the CARB. The SCS outlines a plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. The regional vision of the RTP/SCS maximizes current voluntary local efforts that support the goals of SB 375. The RTP/SCS focuses the majority of new housing and job growth in high-quality transit areas and other opportunity areas in existing main streets, downtowns, and commercial corridors, resulting in an improved jobs-housing balance and more opportunity for transit-oriented development. This overall land use development pattern supports and complements the proposed transportation network that emphasizes system preservation, active transportation, and transportation demand management measures.

### Air Resources Board Scoping Plan

The CARB Scoping Plan is the comprehensive plan to reach the GHG reduction targets stipulated in AB32. The key elements of the plan are to expand and strengthen energy efficiency programs, achieve a statewide renewable energy mix of 33 percent, develop a cap-and-trade program with other partners in the Western Climate Initiative (includes seven states in the United States and four territories in Canada), establish transportation-related targets, and establish fees (CARB 2008). The Scoping Plan measures are identified in Table 4.7-3 (Scoping Plan Measures). Note that the current early discrete actions are incorporated into these measures. ARB estimates that implementation of these measures will reduce GHG emissions in the state by 136 MMTCO2E by 2020; therefore, implementation of the Scoping Plan will meet the 2020 reduction target of 80 MMTCO2E, which is a reduction of 27 percent compared to the projected business as usual 507 MMTCO2E. Key recommendations of the Scoping Plan to achieve the 2020 target include:

- 1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards:
- 2. Achieving a statewide renewable energy mix of 33 percent;
- 3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- 4. Establish targets for transportation-related greenhouse gas emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- 5. Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- 6. Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long term commitment to AB 32 implementation.

In a report prepared on September 23, 2010, CARB indicates that 40 percent of the reduction measures identified in the Scoping Plan have been secured (CARB 2010a). CARB held the hearing for the cap-and-trade program rulemaking on December 16, 2010. The cap-and-trade program began on January 1, 2012 after CARB completed a

series of activities that dealt with the registration process, compliance cycle, and tracking system; however, covered entities will not have an emissions obligation until 2013 (CARB 2015). ARB recently conducted its first quarterly auction on November 14, 2012 with its next auction scheduled for March 2013. ARB is also currently working on the low carbon fuel standard where public hearings and workshops are currently being conducted. In August 2011, the Scoping Plan was reapproved by CARB with the program's environmental documentation.

Table 4.7-3 Scoping Plan Measures

Measure	Description			
T-1	Pavely I and II – Light Duty Vehicle Greenhouse Gas Standards			
T-2	Low Carbon Fuel Standard			
T-3	Regional Transportation-Related Greenhouse Gas Targets			
T-4	Vehicle Efficiency Measures			
T-5	Ship Electrification at Ports			
T-6	Good Movement Efficiency Measures			
T-7	Heavy-Duty Vehicle Aerodynamic Efficiency			
T-8	Medium and Heavy-Duty Vehicle Hybridization			
T-9	High Speed Rail			
E-1	Energy Efficiency (Electricity Demand Reduction)			
E-2	Increase Combined Heat and Power Use			
E-3	Renewable Portfolio Standard			
E-4	Million Solar Roofs			
CR-1	Energy Efficiency (Natural Gas Demand Reduction)			
CR-2	Solar Water Heating			
GB-1	Green Buildings			
W-1	Water Use Efficiency			
W-2	Water Recycling			
W-3	Water System Energy Efficiency			
W-4	Reuse Urban Runoff			
W-5	Increase Renewable Energy Production			
W-6	Public Good Charge (Water)			
I-1	Energy Efficiency for Large Industrial Sources			
I-2	Oil and Gas Extraction GHG Reductions			
I-3	Oil and Gas Transmission Leak Reductions			
I-4	Refinery Flare Recovery Process Improvements			
I-5	Removal of Methane Exemption from Existing Refinery Regulations			
RW-1	Landfill Methane Control			
RW-2	Increase Landfill Methane Capture Efficiency			
RW-3	Recycling and Zero Waste			
F-1	Sustainable Forest Target			
H-1	Motor Vehicle Air Conditioning			
H-2	Non-Utilities and Non-Semiconductor SF <sub>6</sub> Limits			
H-3	Semiconductor Manufacturing PFC Reductions			
H-4	Consumer Products High GWP Limits			
H-5	High GWP Mobile Source Reductions			
H-6	High GWP Stationary Source Reductions			
H-7	High GWP Mitigation Fees			
A-1	Large Dairy Methane Capture			

### California Green Building Standards

New California Green Building Standards Code (CALGREEN) went into effect on January 1, 2011 (CBSC 2010). The purpose of the new addition to the California Building Code (CBC) is to improve public health, safety, and general

welfare by enhancing the design and construction of buildings using concepts to reduce negative impacts or produce positive impacts on the environment. The CALGREEN regulations cover planning and design, energy efficiency, water efficiency and conservation, material conservation and resources efficiency, and environmental quality. Many of the new regulations have the effect of reducing greenhouse gas emissions from the operation of new buildings. Table 4.7-4 (CALGREEN Requirements) summarizes the previous requirements of the CBC and the new requirements of CALGREEN that went into effect in January 2011. Minor technical revisions and additional requirements have gone into effect July 2012.

Table 4.7-4 CALGREEN Requirements

Item		Requirements		
	nem	Previous	CALGREEN	
4.1	Stormwater Management	Stormwater management required on projects > than one acre	All projects subject to stormwater management.	
	Surface Drainage	Surface water must flow away from building	Drainage patterns must be analyzed	
4.2	Energy Efficiency	California Energy Code	Minimum energy efficiency to be established by California Energy Commissions	
	Indoor Water Use	HCD maximum flush rates; CEC water use standards for appliances and fixtures	Indoor water use must decrease by at least 20 percent (prescriptive or performance based)	
4.3	Multiple Showerheads	Not covered	Multiple showerheads cannot exceed combined flow of the code	
	Irrigation Controllers	Not covered	Irrigation controllers must be weather or soil moisture based controllers	
	Joint Protection	Plumbing and Mechanical Codes	All openings must be sealed with materials that rodents cannot penetrate	
4.4	Construction Waste	Local Ordinances	Establishes minimum 50 percent recycling and waste management plan	
	Operation	Plumbing Code for gray water systems	Educational materials and manuals must be provided to building occupants and owners to ensure proper equipment operation	
	Fireplaces	Local Ordinances	Gas fireplaces must be direct-vent sealed-combustion type; Wood stoves and pellet stoves must meet USEPA Phase II emissions limits	
	Mechanical Equipment	Not covered	All ventilation equipment must be sealed from contamination during construction	
	VOCs	Local Ordinances	Establishes statewide limits on VOC emissions from adhesives, paints, sealants, and other coatings	
4.5	Capillary Break	No prescriptive method of compliance	Establishes minimum requirements for vapor barriers in slab on grade foundations	
	Moisture Content	Current mill moisture levels for wall and floor beams is 15-20 percent	Moisture content must be verified prior to enclosure of wall or floor beams	
	Whole House Fans	Not covered	Requires insulted louvers and closing mechanism when fan is off	
	Bath Exhaust Fans	Not covered	Requires Energy Star compliance and humidistat control	
	HVAC Design	Minimal requirements for heat loss, heat gain, and duct systems	Entire system must be designed in respects to the local climate	
7	Installer Qualifications	HVAC installers need not be trained	HVAC installers must be trained or certified	
Inspectors		Training only required for structural materials	All inspectors must be trained	
Source: F	HCD 2010			

# Thresholds of Significance

The proposed project could result in potentially significant impacts related to greenhouse gas emissions and global climate change if it would:

- A. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- B. Conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of greenhouse gases.

As a policy document, the proposed General Plan Amendments will not directly result in construction or operation of any development that contributes to climate change and associated impacts. However, implementation of the General Plan will guide future development that will generate greenhouse gases and will contribute to climate change. Future development projects will be required to determine if individually they exceed recognized or adopted thresholds that comply with adopted greenhouse gas reduction plans.

A numerical threshold for determining the significance of greenhouse gas emissions in the South Coast Air Basin (Basin) has not been established by the South Coast Air Quality Management District (SCAQMD). As an interim threshold based on guidance provided in the CAPCOA CEQA and Climate Change handbook, the City has opted to use a non-zero threshold approach based on Approach 2 of the handbook. Threshold 2.5 (Unit-Based Thresholds Based on Market Capture) establishes a numerical threshold based on capture of approximately 90 percent of emissions from future development. The latest threshold developed by SCAQMD using this method is 10,000 metric tons carbon dioxide equivalent (MTCO2E) per year for industrial projects, 3,500 MTCO2E for residential projects, 1,400 MTCO2E for commercial projects, and 3,000 MTCO2E for mixed-use projects (SCAQMD 2010). These thresholds are based on a case study of 711 CEQA projects. These thresholds will be utilized for implementing development in the future in determining if emissions of greenhouse gases will be significant, until an officially adopted threshold is established by SCAQMD.

# Environmental Impacts

IMPACT 4.7.A Construction emissions of greenhouse gases associated with build-out pursuant to land use policy will be less than significant. Over the long term, GHG emissions may exceed regional thresholds established as projected population capacity for Costa Mesa exceeds population growth assumptions in the regional plans. Impacts at the program level are potentially significant.

Development that occurs as a result of the implementation of the proposed General Plan Amendments would include activities that emit greenhouse gas emissions over the short and long term. While one project could not be said to cause global climate change, individual projects contribute cumulatively to greenhouse gas emissions that result in climate change. Future site-specific development projects will be required to prepare a greenhouse gas emissions inventory, to determine if that individual projects exceed applicable screening or impact thresholds and would thus potentially contribute substantially to climate change and associated impacts. A summary of short- and long-term emissions and the analysis for each are included below.

#### **Short-Term Emissions**

Future development projects would result in short-term greenhouse gas emissions from construction. Greenhouse gas emissions would be released by equipment used for demolition, grading, paving, and building construction activities. GHG emissions would also result from worker and vendor trips to and from project sites and from

demolition and soil hauling trips. Construction activities are short-term and cease to emit greenhouse gases upon completion, unlike operational emissions that are continuous year after year until operation of the use ceases. Because of this difference, SCAQMD recommends in its draft threshold to amortize construction emissions over a 30-year operational lifetime. This normalizes construction emissions so that they can be grouped with operational emissions in order to generate a precise project GHG inventory.

Typically, construction-related GHG emissions contribute unsubstantially (less than one percent) to a project's annual greenhouse gas emissions inventory and mitigation for construction-related emissions is not effective in reducing a project's overall contribution to climate change, given how small of a piece of the total emissions construction emissions are. The proposed General Plan policies relating to sustainability listed in Section 4.3 (Air Quality) of this EIR indicate the City of Costa Mesa's commitment to reduce greenhouse gas emissions consistent with State goals. Implementation of AB32 and SB375 through California Air Resources Board's (CARB) Scoping Plan and SCAG's RTP/SCS are designed to achieve the required reduction in greenhouse gas emissions (CARB 2010b and c). Analysis of the General Plan's support of these plans is presented below. With the proposed General Plan policies to require analysis of greenhouse gas emissions and cooperation and support of these plans, short-term climate change impacts due to future construction activities would not be significant.

### **Long-Term Emissions**

Future development projects will result in continuous GHG emissions from mobile, area, and operational sources. Mobile sources, including vehicle trips to and from development projects, will result primarily in emissions of  $CO_2$ , with minor emissions of  $CH_4$  and  $N_2O$ . The most significant GHG emission from natural gas usage will be methane. Electricity usage by future development and indirect usage of electricity for water and wastewater conveyance will result primarily in emissions of carbon dioxide. Disposal of solid waste will result in emissions of methane from the decomposition of waste at landfills coupled with  $CO_2$  emission from the handling and transport of solid waste. These sources combine to define the long-term greenhouse gas inventory for typical development projects.

As assumed in the SCAG RTP/SCS, Costa Mesa is forecast to grow to a total population of 114,000, with 88,800 jobs, by 2035. The ultimate build-out of the proposed General Plan land use plan can accommodate a total population of 131,690 and total employment of 104,425 within the planning area. Therefore, because the proposed General Plan Amendments accommodate growth beyond the assumptions of the RTP/SCS, impacts are potentially significant. The General Plan incorporates policies that support cooperation with and support of these plans, as well as requiring greenhouse gas emission analysis for individual projects. Nonetheless, due to the inconsistency with the RTP/SCS growth projections, the proposed General Plan Amendments would result in significant impacts related to long-term GHG emissions.

IMPACT 4.7.B The proposed General Plan Amendments have the potential to conflict with the 2012 SCAG RTP/SCS and CARB Scoping Plan—and thereby not attain GHG reductions targets—because land use policy does not support the same level of population growth projected. Impacts at the program level are significant and unavoidable.

# California Air Resources Board Scoping Plan (AB32)

CARB's *Scoping Plan* identifies strategies to reduce California's greenhouse gas emissions in support of AB32. Many of the strategies identified in the Scoping Plan are not applicable at the General Plan or project-level, such as long-term technological improvements to reduce emissions from vehicles. Some measures are applicable and supported by the project. Finally, while some measures are not directly applicable, the project would not conflict with their implementation. Reduction measures are grouped into 18 action categories, as follows:

California Cap-and-Trade Program Linked to Western Climate Initiative Partner Jurisdictions.
 Implement a broad-based California cap-and-trade program to provide a firm limit on emissions. Link

the California cap—and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California (CARB 2015). Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms. These programs involve capping emissions from electricity generation, industrial facilities, and broad scoped fuels. While it is unlikely that a qualifying heavy industrial facility such as these would be located in the City, if one were, it would be subject to these state requirements, and the proposed General Plan Amendments would not interfere with their implementation.

- 2. California Light-Duty Vehicle Greenhouse Gas Standards. Implement adopted Pavley standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals. This is not applicable as this is a statewide measure establishing vehicle emissions standards.
- 3. **Energy Efficiency.** Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities). The General Plan promotes energy efficient building design, as well as implementation of existing building and other codes regulating minimum energy, water, and waste efficiency consistent with 2011 CALGREEN requirements and would thus be consistent and not interfere with this program.
- 4. **Renewable Portfolio Standards.** Achieve 33 percent renewable energy mix statewide by 2020. This establishes the minimum statewide renewable energy mix and is not applicable at a City level or below for implementation. The proposed General Plan Amendments would not interfere with the implementation of this program.
- 5. **Low Carbon Fuel Standard.** Develop and adopt the Low Carbon Fuel Standard. This is not applicable to a City as this establishes reduced carbon intensity of transportation fuels.
- 6. Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. As is detailed previously, the proposed General Plan Amendments would potentially conflict with and would not support the implementation of SCAG's RTP/SCS to achieve the required GHG reduction goals by 2020 and 2035 based on an inconsistency with growth projections. The proposed General Plan Amendments includes policies to reduce vehicle miles traveled by encouraging mixed-use, infill, an improved jobs-housing balance, and alternative modes of transportation.
- 7. **Vehicle Efficiency Measures**. Implement light-duty vehicle efficiency measures. This is not applicable to a City as this identifies measures such as minimum tire-fuel efficiency, lower friction oil, and reduction in air conditioning use.
- 8. **Goods Movement.** Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities. Identifies measures to improve goods movement efficiencies such as advanced combustion strategies, friction reduction, waste heat recovery, and electrification of accessories. While the proposed General Plan Amendments may result in facilities such as distribution warehouses that are associated with goods movement, these measures are yet to be implemented and will be voluntary. The proposed General Plan Amendments would not interfere with their eventual implementation.
- 9. **Million Solar Roofs Program.** Install 3,000 megawatts of solar-electric capacity under California's existing solar programs. Sets goal for use of solar systems throughout the state. The proposed General

Plan Amendments would not interfere with but instead would directly support installation of alternative energy sources through its policies and programs.

- 10. **Medium- and Heavy-Duty Vehicles.** Adopt medium-duty (MD) and heavy-duty (HD) vehicle efficiencies. Aerodynamic efficiency measures for HD trucks pulling trailers 53-feet or longer that include improvements in trailer aerodynamics and use of rolling resistance tires were adopted in 2008 and went into effect in 2010. Future, yet to be determined improvements, includes hybridization of MD and HD trucks. The proposed General Plan Amendments may result in development of industrial uses that utilize truck fleets. These potential future developments would be required to have their fleet equipment be consistent with the current applicable efficiency measures at the time of operation. The proposed General Plan Amendments would not interfere with implementation of this program.
- 11. **Industrial Emissions.** Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries. These measures are applicable to large industrial facilities (> 500,000 MTCO2E/YR) and other intensive uses such as refineries. While it is unlikely that a qualifying heavy industrial facility such as these would be located in the City, if one were, it would be subject to these state requirements; the proposed General Plan Amendments would not interfere with their implementation.
- 12. **High Speed Rail.** Support implementation of a high-speed rail system. This is not applicable as no high-speed rail facilities are planned within Costa Mesa.
- Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. The General Plan promotes energy efficient building design as well as implementation of existing building and other codes regulating minimum energy, water, and waste efficiency consistent with 2011 CALGREEN requirements and would thus be consistent and not interfere with this program.
- 14. **High Global Warming Potential Gases.** Adopt measures to reduce high global warming potential gases. The proposed General Plan Amendments would not directly result in generation of high global warming potential gases, and would not interfere with implementation of any future changes in air conditioning, fire protection suppressant, and other emission requirements.
- 15. **Recycling and Waste.** Reduce methane emissions at landfills. Increase waste diversion, composting and other beneficial uses of organic materials, and mandate commercial recycling to move toward zerowaste. The proposed General Plan Amendments is consistent since implementing development will be required to recycle a minimum of 50 percent from construction activities and warehouse operations per state requirements.
- 16. **Sustainable Forests.** Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation. The 2020 target for carbon sequestration is 5 million MTCO2E/YR. This is not applicable, as the City does not contain any areas defined as forest.
- 17. **Water.** Continue efficiency programs and use cleaner energy sources to move and treat water. The proposed General Plan Amendments are consistent since implementing development will include use of low-flow fixtures and water efficient landscaping per state requirements.

Agriculture. In the near-term, encourage investment in manure digesters and at the five-year Scoping Plan update determine if the program should be made mandatory by 2020. The proposed General Plan Update does not contain any agricultural land use designations, and any policies related to agriculture land uses would not be applicable.

As summarized above, the proposed General Plan Amendments will potentially conflict with Regional Transportation-Related GHG targets, but would not conflict with any of the other provisions of the Scoping Plan. The proposed General Plan Amendments in fact support four of the action categories through energy efficiency, green building, recycling/waste, and water conservation through these proposed goals, objectives, and policies, in addition to those listed in Section 4.3 (Air Quality) relating to the Circulation Element:

#### Goal LU-4: New Development that is Sensitive to Costa Mesa's Environmental Resources

- <u>Objective LU-4D.</u> Encourage new development and redevelopment that protects and improves the quality of Costa Mesa's natural environment and resources.
  - Policy LU-4D.6 Incorporate the principles of sustainability into land use planning, infrastructure, and development processes to reduce greenhouse gas emissions consistent with State goals.
- Objective CON-2: Work to conserve energy resources in existing and new buildings, utilities, and infrastructure.
  - Policy CON-2.A: Promote efficient use of energy and conservation of available resources in the design, construction, maintenance, and operation of public and private facilities, infrastructure, and equipment.
  - Policy CON-2.B: Consult with regional agencies and utility companies to pursue energy efficiency goals. Expand renewable energy strategies to reach zero net energy for both residential and commercial new construction.
  - Policy CON-2.C: Continue to develop partnerships with participating jurisdictions to promote energy efficiency, energy conservation, and renewable energy resource development by leveraging the abilities of local governments to strengthen and reinforce the capacity of energy efficiency efforts.
  - Policy CON-2.E: Promote environmentally sustainable development principles for buildings, master planned communities, neighborhoods, and infrastructure.
  - Policy CON-2.F: Encourage construction and building development practices that reduce resource expenditures throughout the lifecycle of a structure.
  - Policy CON-2.G: Continue to require all City facilities and services to incorporate energy and resource conservation standards and practices and the new municipal facilities be built within the LEED Gold standards or equivalent.
  - Policy CON-2.H: Continue City green initiatives in purchases, equipment, and agreements that favor sustainable products and practices.
  - Policy CON-3.D: Restrict use of turf in new construction and landscape reinstallation that requires high irrigation demands, except for area parks and schools, and encourage the use of drought-tolerant landscaping.

Policy CON-4.E: Encourage compact development, infill development, and a mix of uses that are in proximity to transit, pedestrian, and bicycling infrastructures.

Policy CON-4.F: Enhance bicycling and walking infrastructure, and support public bus service, pursuant to the Circulation Element's goals, objectives, and policies.

Policy CON-4.H: Encourage installation of renewable energy devices for businesses and facilities and strive to reduce community-wide energy consumption.

Policy CON-4.I: Develop long-term, communitywide strategies and programs that work at the local level to reduce greenhouse gases and Costa Mesa's "carbon footprint".

### Regional Transportation Plan/Sustainable Communities Strategy (SB375)

The 2012 Regional Transportation Plan/Sustainable Communities Strategy and the goals, policies, and programs included within it are projected to obtain and exceed applicable GHG reduction targets of eight percent by 2020 and 13 percent by 2035. Projected reductions by the RTP/SCS are nine percent by 2020 and 16 percent by 2035. Ultimately, the RTP/SCS is keyed to implement the requirements of AB32 at the regional level. For a program-level analysis, if the proposed General Plan Amendments are consistent with the assumptions of the RTP/SCS, then long-term development within the planning area will meet regional reduction targets.

As assumed in the RTP/SCS, based on current City boundaries, Costa Mesa is forecast to grow to a total population of 114,000, with 88,800 jobs, by 2035. The ultimate build-out of the proposed General Plan land use plan can accommodate a total population of 131,690 and total employment of 104,425. Therefore, the proposed General Plan Amendments are not consistent with the population growth forecasts of the RTP/SCS. This could potentially alter transportation plans and models of the RTP/SCS determined to achieve the noted GHG reduction targets.

Despite inconsistencies with growth projections of the RTP/SCS, the proposed General Plan amendments would directly support the implementation of the RTP/SCS in achieving mandated GHG reduction targets through its policies oriented towards improvements in the region's multimodal transportation system and coordinating land use patterns around high-quality transit corridors as previously described. These policies are intended to reduce reliance on automobile use and improve the jobs housing balance in more suburban communities to reduce vehicle miles traveled (VMT), thus reducing greenhouse gas emissions. Although the proposed General Plan Update generally supports implementation of the RTP/SCS, since the plan is not strictly consistent with the RTP/SCS, the potential remains that the RTP/SCS may not be properly implemented within the City; impacts would be significant due to this inconsistency.

# Mitigation Measures

No feasible mitigation measures are available to reduce the significant and unavoidable impacts relating to greenhouse gases. The only way to attain consistency with the 2012 AQMP with regard to GHG emissions would be to adjust land use policies to reduce the growth capacity in Costa Mesa during the planning horizon extending to 2035. This measure would be inconsistent with City goals to incentivize private reinvestment and redevelopment efforts along major corridors and on targeted sites where infrastructure can support desired growth.

A number of new technologies and fuels will need to be developed, made readily available, and widely applied that avoid materials and processes that generate GHGs via building energy consumption and vehicular transportation as proposed by CARB's Scoping Plan. Until that occurs, total GHGs due to growth in the planning area would be significant. In addition, and as indicated previously, due to the General Plan's inconsistency with SCAG's population growth projections for Costa Mesa, the potential still remains for an interference with the implementation of SCAG's

2012 RTP/SCS and CARB's Scoping Plan to achieve the required greenhouse gas reductions. Thus, long-term impacts with respect to climate change remain potentially significant and unavoidable.

It should be noted that the City's updated growth projections based on the proposed updated General Plan would be incorporated into the next update of the RTP/SCS.

# Level of Impact with Mitigation Incorporated

Impacts would remain significant and unavoidable due to inconsistency with regional growth plans.

# References

United States Environmental Protection Agency. (US EPA 2015). Greenhouse Gas Emissions. www.epa.gov/climatechange/emissions/index.html [November 18, 2015].

Intergovernmental Panel on Climate Change. (IPCC 2007). Changes in Atmospheric Constituents and in Radiative Forcing (Working Group I). Forth Assessment Report. 2007.

California Natural Resources Agency. (CNRA 2009). California Climate Adaptation Strategy.

California Climate Action Team. (CCAT 2010). Biennial Report. April 2010.

Southern California Association of Governments. (SCAG 2015). Senate Bill 375 Fact Sheet. www.scag.ca.gov/sb375/factsheets.htm [November 18, 2015].

California Air Resources Board. (CARB 2008). Climate Change Scoping Plan. December 2008.

California Air Resources Board. (CARB 2010a). AB 32 Climate Change, Scoping Plan Progress Report. September 2010.

California Air Resources Board (CARB 2015).. Cap-and-Trade. http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm [November 18, 2015].

California Building Standards Commission. (CBSC 2010). California Code of Regulations Title 24. California Green Building Standards Code. 2010.

South Coast Air Quality Management District. (SCAQMD 2010). CEQA Significance Thresholds Working Group. Meeting # 15, Main Presentation. September 28, 2010.

California Air Resources Board. (CARB 2010b). California GHG Emissions – Forecast (2002-2020). October 2010.

California Air Resources Board. (CARB 2010c). Scoping Plan Measures Implementation Timeline. October 2010.

This section addresses the transportation and handling of hazardous materials and wastes within the planning area and the potential risk of upset. This section also addresses airport hazards, wildfire hazards, and emergency response planning. For purposes of searching various agency databases for hazardous materials and waste sites and facilities, both the City of Costa Mesa and ZIP codes 92626, 92627, and 92628 have been used. In response to the Notice of Preparation, a member of the public voiced concerns about making sure the City will still be able to deal with toxic and hazardous materials in an earthquake or terror attack. The laws and regulations in place for handling hazardous waste and draft policies in the City's Safety Element address this issue.

## Existing Conditions

### **Defining Hazardous Materials and Wastes**

Hazardous materials and wastes exist in many places in an urban environment. Hazardous materials range from simple household paint to highly toxic industrial chemicals. Hazardous wastes range from used motor oil to post-production manufacturing wastes. The primary difference between hazardous materials and hazardous wastes is that hazardous materials are produced for specific uses whereas hazardous wastes are the byproducts of various processes.

Hazardous materials are classified based on the form of hazard(s) they pose: flammable, combustible, poisonous, and/or radioactive. Hazardous wastes are classified by the United States Environmental Protection Agency (EPA) through a listing process. *Listed wastes* are those wastes that the EPA has formally found to be hazardous. *Characteristic wastes* are those that have not formally been listed but exhibit hazardous features. *Universal wastes* are common hazardous wastes that are not industry specific but can be found in many types of businesses, institutions, and households. *Mixed wastes* are those that are both hazardous and radioactive. Hazardous wastes are also classified by the type of hazard(s) they pose, similar to hazardous materials. Hazardous wastes may be ignitable, corrosive, reactive, toxic, or radioactive.

#### Transport of Hazardous Materials and Wastes

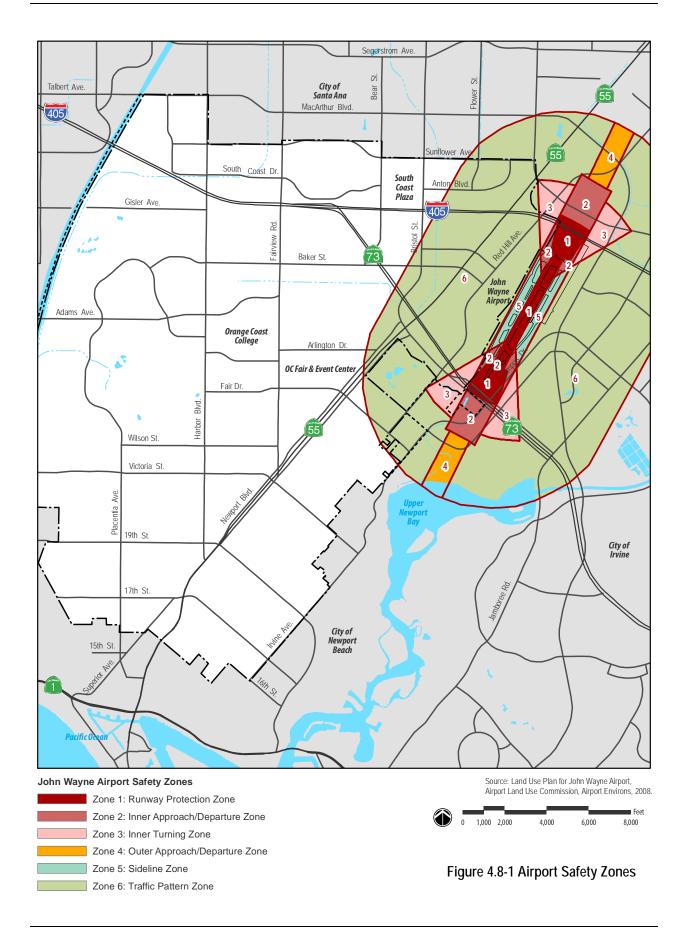
The City currently does not have a Truck Route Master Plan as adopted in the General Plan Circulation Element that identifies higher capacity roadways that can accommodate truck traffic and separate it from residential. Chapter XIII – Restricted Use of Certain Streets, Section 10-248 (Truck Routes) of the Costa Mesa Municipal Code addresses truck routes. Per ordinance provisions, truck routes are established by a resolution of the City Council.

#### Wildland Urban Interface

No portion of the planning area has been designated as a *Moderate, High,* or *Very High Fire Hazard Severity Zone* (*VHFHSZ*) through the California Department of Forestry and Fire Protection (CALFIRE) Fire and Resource Assessment Program. Fire hazard zoning is developed through modeling efforts based on vegetation, topography, weather, crown fire potential, and ember production and movement. *Crown fire* denotes fire that advances independently from the surface fire. Fire hazard zoning does not account for risk, which is the measure of potential for damage. Fire hazard mapping is used in building codes for areas located within the Wildland Urban Interface (WUI) and requirements for defensible space clearing. According to CALFIRE, the entire planning area is located within a *Non-VHFHSZ* Local Responsibility Area (CALFIRE 2015).

#### **Public and Private Airports**

John Wayne/Orange County Airport (SNA) is located immediately east of the planning area, roughly parallel with SR-55. Almost the entire planning area lies within the so-called 20,000-foot Notification Area of John Wayne Airport, and the northeastern section is affected by two safety zones (see Figure 4.8-1, Airport Safety Zones).



# Regulatory Framework

#### Hazardous Materials and Wastes

### **CERCLA and Superfund Sites**

The federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), adopted in 1980, was developed to remove contamination of water, air, and land resources from past chemical disposal practices. This Act, also known as the *Superfund Act*, contains a list of sites referred to as Superfund sites. CERCLA collects taxes from the chemical and petroleum industries that are placed in trust funds to clean abandoned or uncontrolled hazardous waste sites. Response actions authorized by CERCLA include short term response that require immediate attention and long term response to sites that hazardous substance release is not immediately life threatening. The United States Environmental Protection Agency (EPA) Superfund Information System currently does not list any hazardous or potentially hazardous sites being assessed pursuant to CERCLA within the planning area (US EPA 2015a and 2015b).

### **CERCLIS** and the National Priorities List

The EPA also maintains the CERCLIS Comprehensive Environmental Response Compensation and Liability Information System list. This list contains sites that are either proposed to be or on the National Priorities List (NPL), as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The NPL is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money. The HRS uses a structured analysis approach to scoring sites. This approach assigns numerical values to factors that relate to risk based on conditions at the site. The factors are grouped into three categories:

- likelihood that a site has released or has the potential to release hazardous substances into the environment.
- characteristics of the waste (e.g. toxicity and waste quantity); and
- people or sensitive environments (targets) affected by the release.

Four pathways can be scored under the HRS:

- ground water migration (drinking water);
- surface water migration (drinking water, human food chain, sensitive environments);
- soil exposure (resident population, nearby population, sensitive environments); and
- air migration (population, sensitive environments).

After scores are calculated for one or more pathways, they are combined using a root-mean-square equation to determine the overall site score. Listing on the NPL makes a site eligible for funding of long-term site remediation. No NPL sites are within the planning area (US EPA 2015c).

#### RCRA and Hazardous Waste Generators

The Resources Conservation and Recovery Act (RCRA) is a federal law that regulates the generation, management, and transportation of waste material. Hazardous waste management, specifically, includes the following:

- *Treatment:* Any process that changes the physical or chemical composition of the waste to make it less harmful to the environment
- Storage: The holding of hazardous waste for a temporary period of time

Disposal: The permanent final location of the hazardous waste into or on the land

RCRA approaches hazardous wastes from a cradle-to-grave approach, meaning that all hazardous wastes are tracked and strictly regulated from generation to disposal. Hazardous waste generators are required to report use or transport of hazardous wastes to the EPA. Hazardous waste generators range from small producers such as dry cleaners and automobile repair facilities to larger producers such as hospitals and manufacturing operations. Specifically, the EPA categorizes Small Quantity Generators (SQG) as those facilities that produce between 100 and 1,000 kilograms (kg) of hazardous waste per month. Facilities producing less than 100 kg of hazardous waste per month are not subject to RCRA. Large Quantity Generators (LQG) produces 1,000 kg or more hazardous waste per month. LQG and SQG facilities are subject to the storage and transportation requirements of RCRA. As of December 4, 2015, 244 active hazardous waste handlers are located in the planning area, including 29 LQG and four hazardous waste transportation facilities (US EPA 2015d).

#### **EPCRA** and the Toxic Release Inventory

The federal Emergency Planning and Community Right-To-Know Act (EPCRA) were enacted to inform communities and residents of chemical hazards in their area. Businesses are required to report the locations and quantities of chemicals stored on-site to both state and local agencies. This Act requires the EPA to maintain and publish a list of toxic chemical releases and other waste management activities reported by certain industry groups and federal facilities. This list, known as the Toxic Release Inventory (TRI), gives the community more power to hold companies accountable for their chemical management.

Section 3131 of the EPCRA requires manufacturers to report releases of more than 600 designated toxic chemicals into the air, soil, or water. Off-site transfers of waste for treatment or disposal are also required to be reported. On-site disposal or release of chemicals include emissions to the air, discharges to bodies of water, disposal at the facility to land, and disposal in underground injection wells. Off-site disposal or release of chemicals is a discharge of a toxic chemical to the environment that occurs as a result of a facility transferring a waste containing a TRI chemical off-site for disposal or other release. Certain other types of transfers are also categorized as off-site disposal or other release because the outcome of transferring the chemical off-site is the same as disposing of it or releasing it on-site.

Facilities required to report, per EPCRA, include industrial uses that manufacture, process, or use significant amounts of chemicals. Reporting must include the types and amounts of chemicals that are released each year into the air, water, and land or transferred off-site. Listing as a TRI facility does not necessarily mean that releases are harmful to humans or the environment. As of December 15, 2015, 30 TRI facilities were located in the planning area, as identified in Table 4.8-1 (Toxic Release Inventory Facilities) (US EPA 2015e).

Table 4.8-1
Toxic Release Inventory Facilities

Name	Address	
Alco Battery Co. Inc	2980 Red Hill Ave.	
Brunswick Corp. Defense Div.	3333 Harbor Blvd.	
Canon Business Machines Inc.	3191 Red Hill Ave.	
Ceradyne Inc.	3169 Red Hill Ave.	
CIBA Geigy	1571 W. McArthur Blvd.	
CIMCO	265 Briggs Ave.	
CYTEC Aerospace Materials	851 W. 18th St.	
DISC Instruments	102 E. Baker St.	
Eaton Corp. Aerospace & Commercial	1640 Monrovia Ave.	
Foremost Packaging Sys. Inc.	1613 Monrovia St.	
Griswold Industries	1701 Placentia Ave.	
Gulton-Statham Transducers Inc.	1644 Whittier Ave.	

Table 4.8-1
Toxic Release Inventory Facilities

Name	Address	
Hartley Co.	1987 Placentia Ave.	
ITT Industries Inc. JABSCO	1485 Dale Wy.	
Kyowa America Corp.	385 Clinton St.	
MacGregor Yacht Corp.	1631 Placentia Ave.	
Mallinckrodt Anesthesia Products Div.	3195-A Airport Loop Dr.	
Parker Hannifin Corp. Hydraulic Valve Div.	3115 Airway Ave.	
Prime Technologies Inc.	3183 Red Hill Ave.	
Probe Manufacturing Industries	3050 Pullman St.	
Prototype Concepts Inc.	1945-C1 Placentia Ave.	
Resinart corp.	1621 Placentia Ave.	
Rockwell International Corp.	2990 Airway Ave.	
Sanmina Corp.	2950 Red Hill Ave.	
Sigma Circuits Inc. Southern Cal. Div.	2970 Airway Ave.	
Transcom Systems	3100 Pullman St.	
TRD USA Inc.	335 E. Baker St.	
Valentec International Corp.	3190 Pullman St.	
Velie Circuits Inc.	1267 Logan Ave.	
Western Digital Corp.	3128 Red Hill Ave.	
Source: EPA 2015		

### **Cortese List**

The provisions in California Government Code Section 65962.5 are commonly referred to as the *Cortese List*. The list, or a site's presence on the list, has bearing on the local permitting process, as well as on compliance with CEQA. As this statute was enacted over 20 years ago, some of the provisions refer to agency activities that were conducted many years ago and are no longer being implemented; in some cases the information to be included in the Cortese List does not exist. The agencies and tracking activities that still exist and which are included on the Cortese List are detailed below.

#### Hazardous Waste and Substances Sites and Facilities

The California Department of Toxic Substances (DTSC) is charged with reporting of hazardous waste facilities, hazardous waste sites, and hazardous waste disposal on public lands. A hazardous waste facility processes and disposes of hazardous wastes. A hazardous waste site is a contaminated site requiring monitoring and cleanup. According to the DTSC, five hazardous waste and substance sites exist within the planning area, as listed in Table 4.8-2 (Hazardous Waste and Substances Sites and Facilities) (DTSC 2015).

Table 4.8-2 Hazardous Waste and Substances Sites and Facilities

Name	Address	Affected Media	Contaminants
Costa Mesa Air National Guard	2651 Newport Blvd.	Groundwater, Soil, Soil Vapor	Metals, Polynuclear Aromatic Hydrocarbons (PAHS), Volatile Organic Compounds (VOCs)
Precision Optical Incorporated Facility	865 & 869 W. 17 <sup>th</sup> St.	Groundwater, Soil, Soil Vapor	Tetrachloroethylene (PCE)
Southern California Edison Lafayette Substation	1680 Monrovia Ave.	Groundwater, Soil, Soil Vapor	Tetrachloroethylene (PCE)

Table 4.8-2
Hazardous Waste and Substances Sites and Facilities

Tidzai dodo Tracto ana Odbotanoco Ottoo ana i donnico			
Name	Address	Affected Media	Contaminants
Maurer Marine, Inc.	873 W. 17 <sup>th</sup> St.	Indoor Air, Groundwater, Soil, Soil Vapor	Tetrachloroethylene (PCE)
CLA-VAL Facility 1701 Placentia Ave.		Indoor Air, Groundwater, Soil, Soil Vapor, Under Investigation	Tetrachloroethylene (PCE)
Source: DTSC 2015			

### Site Cleanup Programs

SWRCB is also required to report site contamination. The primary difference between DTSC and SWRCB site reporting is that DTSC reports pursuant to the Health and Safety Code while SWRCB reports pursuant to the Water Code. Further distinction is made because DTSC reports specifically on hazardous waste sites, while SWRCB reports on hazardous materials and other contaminants that may affect soil and/or water resources. Five active cleanup program sites occur within the City; these are listed in Table 4.8-3 (SWRCB Site Cleanup Programs) (WRCB 2015).

Table 4.8-3 SWRCB Site Cleanup Programs

Name	Address	Affected Media	Contaminants	
Euroclean Express Cleaners	2675 Irvine Ave.	Indoor Air, Groundwater, Soil, Soil Vapor	Tetrachloroethylene (PCE)	
John Wane Airport	3151 Airway Ave.	None Specified	Aviation, Diesel, Gasoline, MTBE/TBA/Other Fuel Oxygenates, Trichloroethylene (TCE), Waste Oil/Motor Hydraulic/Lubricating	
Newport Banning Ranch LLC	1080 W. 17th St.	Soil	Waste Oil/Motor/Hydraulic/Lubricating	
Randy's Automotive Property	2089 Harbor Blvd.	Aquifer Used for Drinking Water Supply	Diesel, Gasoline	
Walgreens Store	1726 Superior Ave.	Groundwater, Soil, Soil Vapor	Acetone, Tetrachloroethylene (PCE), Trichloroethylene (TCE)	
Source: SWRCB 2015				

### Leaking Underground Storage Tanks

SWRCB is required to report on all leaking underground storage tanks (LUSTs). The most common type of LUSTs are leaking underground fuel tanks (LUFTs). There are currently fourteen active LUST assessments in progress within the City, as summarized in Table 4.8-4 (Leaking Underground Storage Tanks) (WRCB 2015).

Table 4.8-4 Leaking Underground Storage Tanks

Leaking Onderground Storage Turks				
Name	Address	Affected Media	Contaminants	
Chevron #21-1314/ American Savings Bank	2252 Harbor Blvd.	Groundwater	Gasoline	
G&M Oil #21	2995 Bristol St.	Groundwater	Diesel, Gasoline	
G&M Oil #23	1740 Newport Ave.	Groundwater	Gasoline	
General Transmissions	2073 Harbor Blvd.	Aquifer Used for Drinking Water Supply	Waste Oil/ Motor/ Hydraulic/ Lubricating	
Los Angeles Times North Tanks	1375 Sunflower Ave.	Groundwater	Diesel, Gasoline	

Table 4.8-4 Leaking Underground Storage Tanks

Leaking officerground Storage Tariks			
Name	Address	Affected Media	Contaminants
Mobil #18- HDR	3195 Harbor Ave.	Groundwater	Gasoline, Waste Oil/ Motor/ Hydraulic/ Lubricating
Mobil #18- JMY	3470 Fairview Rd.	Groundwater	Gasoline
Newport Mesa Unified School District	2985A Bear St.	Aquifer Used for Drinking Water Supply	Gasoline, Waste Oil/ Motor/ Hydraulic/ Lubricating
P&M Station #975*	2050 Harbor Blvd.	Groundwater	Gasoline
Shell Oil	1201 Baker St.	Groundwater	Gasoline
Thrifty Oil #139	799 19 <sup>th</sup> St.	Groundwater	Gasoline
Thrifty Oil #151	751 Baker St.	Groundwater	Gasoline
Tosco 76 #4992	1900 Newport Ave.	Groundwater	Gasoline
Unocal #5404	3599 Harbor Blvd.	Groundwater	Gasoline, Waste Oil/ Motor/ Hydraulic/ Lubricating
Source: SWRCB 2015 *AKA Superior Station, Inc.			

#### Solid Waste Disposal Sites

The SWRCB is charged with reporting on solid waste disposal facilities that have migration of hazardous substances from the site. According to the SWRCB GeoTracker database, Pacific Avenue Landfill, located at 2193 Pacific Avenue, has been inactive since 2014. No site history or contaminant information is available (WRCB 2015).

### Military Cleanup Sites

The SWRCB is charged with reporting on military cleanup sites that are resulting in the migration of hazardous substances from the site. According to the SWRCB GeoTracker database, Costa Mesa Air National Guard, located at 2651 Newport Boulevard, has been actively monitored since 2012. The potential media of concern for this site is groundwater and soil. Potential contaminants of concern include diesel, polynuclear aromatic hydrocarbons (PAHS), trichloroethylene (TCE), and waste oil/ motor/ hydraulic/lubricating (WRCB 2015).

#### Active Water Board Orders

The Santa Ana RWQCB is required to compile a list of *active* Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO) that concern the discharge of wastes that are hazardous materials. John Wayne Airport and Argo Tech Corp. currently have "active" CAOs, each last issued by the RWQCB on June 17, 2005 (Cal EPA 2015).

#### Hazardous Materials Transportation Act

United States Code part 49, Section 5101 et al sets the basic statutory requirements for federal hazardous materials transportation law. The law provides the federal government with the authority to designate hazardous materials. Designation may occur for explosive, radioactive, infectious, flammable, combustible, toxic, oxidizing, and corrosive materials as well as compressed gases. The law covers various aspects of hazardous materials transportation, as follows:

- Hazardous materials classification
- Hazard communication
- Packaging requirements
- Operational rules
- Training and security

### Registration

### California Code of Regulations (Title 22)

Title 22 contains all applicable State and federal laws governing hazardous wastes in the State. Title 22 is more stringent and broader in its coverage of wastes than federal law. Title 26 deals with toxic-related regulations.

The generation, transport, and disposal of asbestos and asbestos-containing materials are regulated under Title 22 of the California Code of Regulations. (Toxic Fact) Asbestos is a fibrous mineral that was commonly used in household products and building materials prior to the 1980s. When asbestos fibers become airborne and are inhaled, they pose a serious health risk. Exposure to asbestos can lead to varying forms of lung cancer. The primary non-industrial source of asbestos exposure is the demolition or remodeling of buildings constructed with asbestos-containing materials. Other materials of concern when demolition or remodeling occurs includes lead-based paints and mercury-containing products.

### Hazardous Materials Disclosure Program

State and federal law require all businesses handling more than a specified amount of hazardous or extremely hazardous materials to submit a Hazardous Materials Business Plan to the local Certified Unified Program Agency (CUPA). The CUPA for the City of Costa Mesa is the Orange County CUPA (OC-CUPA).

The OC-CUPA has a Hazardous Materials Disclosure and Business Emergency Plan program, which requires that a business plan be prepared, submitted, and implemented by any business handling hazardous materials or a mixture containing hazardous materials in qualities equal to or greater than 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of compressed gas, or extremely hazardous, or extremely hazardous substances above the threshold planning quantity.

- All hazardous waste generators, regardless of quantity generated
- Any business that uses, generates, processes, produces, treats, stores, emits, or discharges a hazardous material in quantities at or exceeding:
  - 55 gallons or more of a liquid;
  - 500 pounds or more of a solid; or
  - 200 cubic feet (compressed) of gas at any one time in the course of a year.
- Any business that handles, stores, or uses Category (I) or (II) pesticides, as defined by the Federal Insecticide, Fungicide and Rodenticide Act, regardless of amount
- Any business that handles Department of Transportation Hazard Class 1 explosives

In addition, businesses are required to submit an amendment to their business plan within 30 days of any of the following events:

- A 100 percent or more increase in the quantity of a previously disclosed hazardous material
- Any handling of a previously undisclosed hazardous material subject to inventory requirements:
  - Change of business address;
  - Change of ownership; or
  - Change of business name.

These required business plans are used by responding agencies in the event of a release to allow for a quick and accurate evaluation of each situation. Businesses handling hazardous materials are required to verbally report any release or threatened release if there is a reasonable belief that the release poses a significant present or potential hazard to human health and safety, property, or the environment. In addition, if a release involves a hazardous

substance listed in Title 40 of the Code of Federal Regulations in an amount equal to or exceeding the reportable quantity, a notice must be filed with the California Office of Emergency Services within 15 days.

The OCFD-HMD is responsible for conducting compliance inspections of regulated facilities in Orange County.

#### Hazardous Waste Control Law

This State statute sets regulations for the handling, transport, and disposal of hazardous waste. California law exceeds federal RCRA regulations by requiring source reduction planning and includes more extensive coverage of activities and wastes.

### Hazards and Emergency Planning

### National Incident Management System (NIMS)

In 2003, the Homeland Security Presidential Directive-5 was issued. It directs the Secretary of Homeland Security to develop and administer National Incident Management System (NIMS). While most emergency situations are handled locally, when there is a major incident, help may be needed from other jurisdictions, the State, and the federal government. The NIMS provides a consistent nationwide template to establish federal, state, tribal and local governments, private sector, and nongovernmental organizations to work together effectively and efficiently to prepare for, prevent, respond to, and recover from domestic incidents, regardless of cause, size or complexity, including acts of catastrophic terrorism. NIMS benefits include a unified approach to incident management; standard command and management structures; and emphasis on preparedness, mutual aid and resource management. The Colton Fire Department ensures consistency with NIMS.

### Standardized Emergency Management System

The majority of emergencies are mitigated by local agencies with no need for additional assistance. However, when a major incident occurs, the first few moments are critical in terms of reducing loss of life and property. First responders must be sufficiently trained to understand the nature and the gravity of the event to minimize the confusion that inevitably follows catastrophic situations. The first responder must then put into motion relevant mitigation plans to further reduce the potential for loss of lives and property damage and to communicate with the public. According to the State's Standardized Emergency Management System (SEMS), local agencies have primary authority regarding rescue and treatment of casualties and making decisions regarding protective actions for the community. This on-scene authority rests with the local emergency services organization and the incident commander.

The SEMS law intent is to improve the coordination of State and local emergency response in California. It requires all California jurisdictions to participate in the establishment of a standardized statewide emergency management system.

Depending on the type of incident, several different agencies and disciplines may be called in to assist with emergency response. Agencies and disciplines that can be expected to be part of an emergency response team include medical, health, fire and rescue, police, public works, and coroner. The challenge is to accomplish the work at hand in the most effective manner while maintaining open lines of communication between the different responding agencies to share and disseminate information, to coordinate efforts.

Emergency response in every California jurisdiction is handled in accordance with SEMS, with individual City agencies and personnel taking on their responsibilities as defined by the City's Emergency Plan. This document describes the different levels of emergencies, the local emergency management organization, and the specific responsibilities of each participating agency, government office, and City staff. The Costa Mesa Fire Department manages the

Emergency Operation Center (EOC) during disasters and coordinates other agencies in the implementation of SEMS. The framework of the SEMS system is the following:

- Incident Command System a standard response system for all hazards that is based on a concept originally developed in the 1970s for response to wildland fires;
- Multi-Agency Coordination System coordinated effort between various agencies and disciplines, allowing for effective decision-making, sharing of resources, and prioritizing of incidents;
- Master Mutual Aid Agreement and related systems agreement between cities, counties and the State to
  provide services, personnel and facilities when local resources are inadequate to handle an emergency;
- Operational Area Concept coordination of resources and information at the county level, including political subdivisions within the county; and
- Operational Area Satellite Information System a satellite-based communications system with a high-frequency radio backup that permits the transfer of information between agencies using the system.

The SEMS law requires the following:

- Jurisdictions must attend training sessions for the emergency management system;
- All agencies must use the system to be eligible for funding for response costs under disaster assistance programs; and
- All agencies must complete after-action reports within 120 days of each declared disaster.

### Orange County General Plan Safety Element

The County's General Plan Safety Element includes adopted goals and objectives designed to minimize risk from hazardous materials and waste releases and loss and injury from fires. These include goals and objectives for fire hazards, crime, and hazardous materials (OC 2014).

#### John Wayne Airport, Airport Environs Land Use Commission and Land Use Plan

In 1967, the first Airport Land Use Commission (ALUC) statute was adopted by the California legislature, according to the *California Airport Land Use Planning Handbook*. In 1982 the statute was amended to require consistency between local general plans and zoning and ALUC compatibility plans. In 1994, CEQA statutes as applied to the preparation of environmental documents in the vicinity of airports was amended. Lead agencies are required to use the *Airport Land Use Planning Handbook* as a technical resource when assessing the airport related noise and safety impacts of airport vicinity projects (OC ALUC 2008).

The purpose of ALUCs has remained essentially unchanged since the early years of the statutes. To fulfill its purpose, ALUC has two specific duties:

- Prepare Compatibility Plans Each commission is required to "prepare and adopt" an airport land use plan for each of the airports within its jurisdiction (Section 21674 (c) and 21675(a)).
- Review Local Agency Land Use Actions and Airport Plans The commissions' second duty is to "review the plans, regulations, and other actions of local agencies and airport operators..." (Section 21674(d))

The key limitations are: 1) a ALUC has no authority over existing land uses regardless of whether such uses are incompatible with airport activities and 2) the "powers of the commission shall in no way be construed to give the commission jurisdiction over the operation of any airport."

The County of Orange has adopted an *Airport Environs Land Use Plan* (AELUP) that applies to all airports within the County and that specifically identifies safety zones around the airports, including John Wayne. Section 4.3 of the AELUP addresses amendments to general plans as follows:

4.3 Amendments to General Plans and Specific Plans (Zoning). Within the AELUP planning areas, any amendment to a General Plan or Specific Plan (including conventional zoning and Planned Communities) must be submitted to the Commission for a consistency determination prior to its adoption by the local agency.

### Costa Mesa Fire Code

The City has adopted the 2013 California Building Code, including Section 701A et al that defines specifications for exterior materials and construction methods for structures located in a wildland-urban interface. These regulations pertain to any new building located within a Local Agency Very High Fire Hazard Severity Zone or within a State Responsible Moderate, High, or Very High Fire Hazard Severity Zone. This Section's purpose is to protect life and property by increasing a building's ability to resist the intrusion of flames or burning embers projected by a vegetation fire. The section's provisions address roofing, exterior walls, decking, and ancillary buildings.

# Thresholds of Significance

The General Plan Amendments could result in significant impacts associated with hazardous materials and/or wastes if:

- A. A significant hazard to the public or the environment is created through the routine transport, use, or disposal of hazardous materials.
- B. A significant hazard to the public or the environment is created through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- C. Hazardous emissions are emitted or hazardous or acutely hazardous materials, substances, or wastes are handled within one-guarter mile of an existing or proposed school.
- D. A significant hazard to the public or the environment is created through development of a site that is included on a list of hazardous waste sites compiled pursuant to Government Code Section 65962.5.

The General Plan Amendments could result in significant impacts associated with air traffic hazards if:

- E. People residing or working in the planning area are subject to safety hazards due to the planning area or portions thereof being located within an airport land use plan or within two miles of a public airport or public use airport.
- F. People residing or working in the planning area are subject to safety hazards due to the planning area or portions thereof being located within the vicinity of a private airstrip.

The General Plan Amendments could result in significant impacts associated with emergency response programs or wildfires if:

- G. The program impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan.
- H. Exposes people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

## **Environmental Impacts**

IMPACT 4.8.A The proposed General Plan Amendments would result in less than significant impacts from the use, transport, and disposal of hazardous materials and wastes.

Hazardous materials and wastes would be routinely transported, used, and disposed of within the planning area, particularly originating from or being delivered to the many industrial businesses in the City. The transport, use, and disposal would range from hazardous materials used for manufacturing processes to common household hazardous wastes (HHW) such as paint and used motor oil. The use, transportation, and disposal of hazardous materials and wastes has varying degrees of risk of upset dependent on the type and quantity of the material or waste. Simple spills of HHWs can result in minor environmental contamination to soil, air, or water. Releases of toxic chemicals from industrial facilities pollute the air and may have immediate and adverse health effects on workers or residents in the vicinity. Releases can occur accidentally or deliberately. A common means of accidental release occurs when a vehicle transporting hazardous wastes or materials is involved in a collision and the wastes are released onto the roadway and surrounding environment.

Large-scale accidents involving the transportation of hazardous materials or wastes can result in extensive clean-up efforts at significant cost. Primary routes within the planning area where transport of hazardous materials or wastes will typically occur include I-405 and SR-55, as well as along arterial roadways such as Harbor and Newport Boulevards. Given the proximity of residential and industrial uses next to each other, residents in these areas could experience a higher risk of exposure to potential upset associated with materials transport.

Designated truck routes and other roadways are used to transport materials and wastes from within the City to the freeways. As discussed above, truck routes in Costa Mesa are designated by City Council resolution. Criteria used to establish such routes includes proximity to residential uses and schools.

IMPACT 4.8.B The proposed General Plan Amendments would result in less than significant impacts related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Hazardous materials and wastes are extensively regulated and monitored by State and federal law, as discussed above. The use of hazardous materials is regulated and monitored under EPCRA, RCRA, and the Hazardous Materials Disclosure Program. Transportation of hazardous materials and/or wastes is regulated under RCRA, the Hazardous Materials Transportation Act, Hazardous Wastes Control Law, and California Code of Regulations Title 22. Disposal of hazardous wastes regulated under RCRA, Hazardous Wastes Control Law, and California Code of Regulations (CCR) Title 22. Sections 2729 through 2732 of the (CCR) provide requirements for the reporting, inventory, and release response plans for hazardous materials. These requirements establish procedures and minimum standards for hazardous material plans, inventory reporting and submittal requirements, emergency planning/response, and training.

In addition, all regulated substance handlers are required to register with local fire or emergency response departments per the California Accidental Release Prevention Program. Locally, this is overseen by the Orange County Fire Department Environmental Health Division (OCFD-EHD). The OCFD-EHD reviews and approves of an Emergency/Contingency Plan for regulated facilities. The plan outlines precautions and procedures necessary to protect facilities from accidental release of hazardous materials, and provides emergency remediation to minimize effects should an accidental spill occur. Annual updates and review of the plan are required to ensure compliance and adequacy. The Hazardous Materials Disclosure Program requires notification of potential or known release. The OCFD-EHD responds to emergency releases under the Hazardous Materials Disclosure Program. Furthermore, releases of hazardous materials or wastes are required to be reported to the California Office of Emergency Services

(OES). These existing regulations provide adequate safeguards for preventing, responding to and cleaning up accidental releases of hazardous materials and wastes, and further regulation by the City is considered unnecessary. The proposed General Plan Amendments would not conflict with any of these regulations; therefore, this project would not result in a significant impact involving the release of hazardous materials into the environment.

IMPACT 4.8.C The proposed General Plan Amendments would result in less than significant impacts related to hazardous material emissions within one-quarter mile of an existing or proposed school.

The General Plan Amendments are not designating any land uses specifically within ¼ mile of any existing schools, so land uses that typically use hazardous materials (such as gas stations, manufacturing plants, agricultural products storage, etc.) would not be sited near a school. Furthermore, any new schools proposed in the City would go through strict State-mandated siting requirements under the direction of the California Division of State Architects that would ensure they are not located hazardous materials sites (CDSA 2015). Future development in proximity to an existing or already planned school site would be subject to City review concerning potential environmental effects, in accordance with the City's routine CEQA compliance procedures. Through the existing planning process, impacts involving the manufacture, use, transport, storage, or disposal of hazardous substances and wastes near a school site would be considered. If potentially significant effects are identified, measures to avoid or reduce impacts to less than significant levels would need to be identified, and the City would be required to make specific findings to document that consideration.

IMPACT 4.8.D

Impacts to development and persons due to building sitting on contaminated properties would be less than significant with mitigation incorporated.

Contaminated building sites and properties in the planning area are listed in Tables 4.8-2, 3 and 4. In addition, the Housing Element identifies the Sakioka Lot 2 and Argo Tech sites as possibly requiring remediation prior to future development due to past agricultural and industrial uses, respectively. Contamination may occur at these sites depending on past and/or proposed uses. Sensitive and other land uses could also be proposed on known or currently unknown sites contaminated by hazardous materials. Development on contaminated sites could prevent the contamination from being cleaned, allowing it to continue to transport through the soil and eventually to groundwater resources.

The proposed amended Safety Element includes Policy S-1.M through Policy S-1.R, regarding Hazardous Materials Operations (listed above), to regulate hazardous materials operations. These policies would ensure continued consultation with the County of Orange, appropriate in-depth environmental analysis of development, and preparation of adequate action plans. In addition, to ensure that site contamination would be identified during the development review process for future development pursuant to the amended General Plan, Mitigation Measure 4.8.D-1 has been incorporated. Mitigation Measure 4.8.D-1 requires that site assessments be conducted prior to project approvals to identify any contamination; the measure also sets performance standards for cleanup prior to approval of development or redevelopment projects. This would ensure that as properties are developed, site contamination, where such exists, is removed. Through application of existing regulations and imposition of mitigation, impacts to persons and other resources would be reduced to less than significant levels.

#### GOAL S-2: HIGH LEVEL OF POLICE AND FIRE SERVICES AND EMERGENCY PREPAREDNESS.

Provide a high level of security in the community to prevent and reduce crime, and to minimize risks of fire to people, property, and the environment.

<u>Objective S-2</u>. Plan, promote, and demonstrate a readiness to respond and reduce threats to life and property through traditional and innovative emergency services and programs.

### **Hazardous Materials Operations**

Policy S-2.M: Continue to consult with the County of Orange in the implementation of the Orange County Hazardous Waste Management Plan.

Policy S-2.N: Ensure that appropriate in-depth environmental analysis is conducted for any proposed hazardous waste materials treatment, transfer, and/or disposal facility.

Policy S-2.O: Continue to consult with the County of Orange to identify and inventory all users of hazardous materials and all hazardous waste generators, and prepare clean-up action plans for identified disposal sites.

Policy S-2.P: Require the safe production, transportation, handling, use, and disposal of hazardous materials that may cause air, water or soil contamination.

Policy S-2.Q: Encourage best practices in hazardous waste management and ensure consistency with City, County, and Federal guidelines, standards, and requirements.

Policy S-2.R: Consult with federal, State, and local agencies and law enforcement to prevent the illegal transportation and disposal of hazardous waste.

1MPACT 4.8.E 4.8.F

Impacts related to operation of public or private airports would be less than significant due to requirements of existing regulations related to consistency with AELUP.

John Wayne Airport is located immediately adjacent to the planning area to the east. Portions of the SoBECA, Sakioka Lot 2, and Residential Incentive-Newport Overlay lie within Safety Compatibility Zones of the airport, as designated in the *Airport Environs Land Use Plan for John Wayne Airport* (AELUP) (OC ALUC 2008). These areas lie within Zone 6 – Traffic Pattern Zone. According to the AELUP, Zone 6 is an area with a "generally low likelihood of accident occurrence at most airports; risk concern primarily is with uses for which potential consequences are severe." Residential uses are considered compatible, as are most nonresidential uses except outdoor stadiums and similar very-high-occupancy land uses. Large schools, day care centers, hospitals, and nursing homes are discouraged. As discussed under Regulatory Setting above, the City must submit general plan amendments to the Airport Land Use Commission to determine consistency with the AELUP.

Future development applications would be reviewed in light of AELUP criteria with regard to sitting within airport safety zones. Development within close proximity to the airport is regulated in Municipal Code Sections 13-42.3 (Development Standards and Requirements), which requires a developer to disclose to future homeowners if the property is within two miles of an airport, and Section 13-38 (Additional Property Development Standards for Multiple-Family Residential Districts), which requires that a noise study be performed if a property is located in proximity to an airport. These regulations ensure people residing or working within close proximity of the airport are reasonably protected from noise and height-related impacts. With adherence to these existing regulations, impacts related to people residing or working within airport safety zones would be less than significant.

IMPACT 4.8.G

The proposed General Plan Amendments would not interfere with the implementation of the City's emergency response and evacuation procedures.

Impairment of emergency or evacuation procedures can result in increased property damage and/or personal injury by slowing emergency services response times or preventing the public from being able to escape emergency situations. The General Plan Amendments do not include any proposed changes in the physical organization of the planning area that could interfere with the City's emergency response or evacuation procedures pursuant to NIMS, SEMS, or the City's emergency response plan. The project does not involve any proposal or action to eliminate existing emergency response facilities such as fire stations, nor do amendments to the Circulation Element involve change to roadways in any manner that would hinder the ability of emergency vehicles to respond. Emergency and disaster response procedures are designed to be flexible in nature in order to adapt to the volatile and unpredictable nature of disasters and hazards. This flexibility allows for emergency response services and City staff to respond to varying emergencies regardless of location, size, or number of persons affected. Refer to draft Safety Element policies S-2.J to L regarding Emergency and Disaster Preparedness which are listed above. In addition, the following draft Circulation Element policies relate to emergency response.

Policy C-2.B.2:

Continue to deploy intelligent transportation systems (ITS) strategies—such as adaptive signal controls, fiber optic communication equipment, closed circuit television cameras, real-time transit information, and real- time parking availability information—to reduce traffic delays, lower greenhouse gas emissions, improve travel times, and enhance safety for drivers, pedestrians, and cyclists.

Policy C-2.B.5:

Investigate and utilize state-of-the-art transportation system management technology and industry practices to address recurring and non-recurring traffic events (i.e., special events, incident/emergency management).

Through the annual budgeting process, the City determines how to implement these policies based on community needs and available resources. With continued implementation of these policies and review of individual development projects with regard to emergency service needs, impact would be less than significant.

IMPACT 4.8.H

### No impacts associated with wildland fires would occur.

The General Plan Amendments do not affect any lands that are in a "Very High, High, or Moderate" Fire Hazard Zone. Where such lands are adjacent to developed lands there would be susceptibility to wildland fire impacts. No impacts related to wildland fires affecting urban land uses would result from the General Plan Amendments.

# Mitigation Measures

MITIGATION 4.8.D-1 Applications for new development projects requiring City discretionary approval shall include the results of a Phase I Environmental Site Assessment (ESA), prepared in accordance with the latest ASTM protocol for such assessments. If the Phase I ESA indicates some evidence that site contamination exists that could require cleanup to

avoid danger to people or damage to the environment, a Phase II level review shall be completed to fully characterize the nature and extent of such contamination, and the scope of required clean up procedures. The results of the Phase II assessment shall be considered as part of the CEQA compliance process prior to any action on the project.

# Level of Significance with Mitigation Incorporated

Impact 4.8.D would be less than significant with mitigation incorporated. All other impacts in this section do not require mitigation.

# References

California Department of Forestry and Fire Protection (CALFIRE). 2015. Very High Fire Hazard Severity Zones in LRA. Orange County. December 2015.

California Division of the State Architect, 2015. <a href="http://www.dgs.ca.gov/dsa/Home.aspx">http://www.dgs.ca.gov/dsa/Home.aspx</a>, accessed on February 25, 2016

United States Environmental Protection Agency (US EPA). 2015a. *Cleanups in My Community*. <a href="http://www2.epa.gov/cleanups/cleanups-my-community">http://www2.epa.gov/cleanups/cleanups-my-community</a> [December 4, 2015].

United States Environmental Protection Agency (US EPA). 2015b. EnviroMapper: Costa Mesa, CA. <a href="http://www.epa.gov/emefdata/em4ef.home">http://www.epa.gov/emefdata/em4ef.home</a> [December 4, 2015].

United States Environmental Protection Agency (US EPA) 2015c.. EnviroFacts, CERCLIS Query Form. <a href="http://www.epa.gov/enviro/html/cerclis/cerclis\_query.html">http://www.epa.gov/enviro/html/cerclis/cerclis\_query.html</a> [May 21, 2015].

United States Environmental Protection Agency (US EPA) 2015d. EnviroFacts, RCRA Info Search: Costa Mesa. <a href="http://www3.epa.gov/enviro/facts/rcrainfo/search.html">http://www3.epa.gov/enviro/facts/rcrainfo/search.html</a> [December 4, 2015].

United States Environmental Protection Agency (US EPA). 2015e. EnviroFacts, TRI Query Form: Costa Mesa. <a href="http://www.epa.gov/enviro/tri-search">http://www.epa.gov/enviro/tri-search</a> [Accessed December 15, 2015].]

California Department of Toxic Substances Control (DTSC). 2015. EnviroStor. <a href="http://www.dtsc.ca.gov/SiteCleanup/Cortese\_List.cfm">http://www.dtsc.ca.gov/SiteCleanup/Cortese\_List.cfm</a> [May 21, 2015].

State Water Resources Control Board (WRCB). 2015. GeoTracker, Advanced Search: Costa Mesa. <a href="https://geotracker.waterboards.ca.gov/search.asp">https://geotracker.waterboards.ca.gov/search.asp</a> [December 4, 2015].

California Environmental Protection Agency (Cal EPA) 2015. Cortese List, List of 'active' CDO and CAO. <a href="http://www.calepa.ca.gov/SiteCleanup/CorteseList/CDOCAOList.xls">http://www.calepa.ca.gov/SiteCleanup/CorteseList/CDOCAOList.xls</a> [December 4, 2015].

Orange County (OC). 2014. General Plan. Safety Element. July 2014.

City of Costa Mesa (CM) 2002. General Plan. Safety Element. 2002.

Orange County Airport Land Use Commission (OC ALUC). 2008. *Airport Environs Land Use Plan for John Wayne Airport*. As amended through April 17, 2008.

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This section analyzes impacts of the proposed General Plan Amendments associated with water quality, wastewater discharge requirements, groundwater supplies and recharge, erosion, flooding, and hydrologic hazards. During circulation of the Notice of Preparation, the County of Orange Department of Public Works submitted a comment related to drainage and flood control. This comment is addressed in this section.

## **Environmental Setting**

The City of Costa Mesa and Orange County have a semi-arid Mediterranean climate characterized by mild winters and summers. Annual rainfall averages 11.3 inches with the rainy season occurring during the winter, although drought conditions have prevailed in recent years. The coolest month of the year is January, with an average monthly low of 46.9° Fahrenheit (F). The warmest month is August, with an average monthly high of 63.2° F. The annual average maximum temperature is 67.8° F, and the annual average minimum temperature is 54.6° F (WRCC 2015).

### **Existing Conditions**

### **Hydrology and Watersheds**

Costa Mesa is located within the jurisdictions of both the North Orange County Integrated Regional Watershed Management Plan (IRWMP) and the Central Orange County IRWMP (OCPW 2011, OCPW 2007). The City is contained within the Santa Ana River Hydrologic Unit. This unit covers an area of approximately 2,700 square miles, or the majority of the Santa Ana Region of the Water Quality Control Board (WQCB) jurisdictional area, which includes portions of Orange, Los Angeles, Riverside, and San Bernardino Counties. Within this hydrologic unit, the City's geography is split between the Santa Ana River Watershed (northern portion) and the Newport Bay Watershed (southern portion).

The Santa Ana River Watershed comprises 210.47 square miles within Orange County and is the largest watershed in Orange County. The watershed is located primarily in the northeast part of the county with a small portion, which follows the Santa Ana River to the ocean, passing through the Talbert Watershed. The watershed extends beyond Orange County. The watershed includes portions of the cities of Anaheim, Brea, Costa Mesa, Fountain Valley, Garden Grove, Huntington Beach, Orange, Placentia, Santa Ana, Villa Park, and Yorba Linda. This watershed contains the Santa Ana River and Santiago Creek. The Talbert and Huntington Beach Channels drain the western side of the watershed, carrying flow to the Talbert Marsh along the coast (OCPW 2011).

The Newport Bay Watershed encompasses an area of approximately 154 square miles, with overland flows draining toward the Pacific Coast into Newport Bay. The watershed is bounded on the north by the Santiago Hills (Loma Ridge) and on the south by the San Joaquin Hills. The Tustin Plain, a broad alluvial valley, occupies the major portion of the watershed. Major cities within the watershed include Newport Beach, Irvine, and Tustin, plus portions of Orange, Lake Forest, Laguna Hills, Costa Mesa, and Santa Ana. The principal watercourse of the Newport Bay Watershed is San Diego Creek, with a drainage area that covers approximately 122 square miles (OCPW 2007).

#### Groundwater

Extensive portions of Orange County are underlain by deep deposits of permeable, water-bearing sedimentary geologic strata. Groundwater occurs in semi- to moderately consolidated sand, gravel, and silt occurring in aquifers extending from approximately 40 to over 2,500 feet beneath the ground surface in Costa Mesa. Depths to the uppermost aquifer vary throughout the City from approximately 40 feet below the ground surface in the northern portion to over 100 feet near the coast. Groundwater is present at depths of less than 40 feet along the Santa Ana River. Groundwater for Costa Mesa is withdrawn from the largest of four groundwater basins in Orange County—the Lower Santa Ana Groundwater Basin.

### **Drainage Patterns**

The City of Costa Mesa is unique in its drainage pattern because of the slope and topography of the land. In two places in the City, water may actually drain in four different directions. The advantages of these conditions relate to the ability to install short storm drain systems due to the small drainage areas and means that uncontrolled runoff is not as hazardous because of the lower water concentrations. Generally speaking, Costa Mesa has sufficient natural slope to assist storm runoff.

Runoff generated outside of the City which is transported through or adjacent to the City creates a different type of drainage problem. Channels on the north, east, and west sides of the City are primarily dominated by runoff that originates from neighboring jurisdictions, but these channels are also required to dispose of runoff generated in Costa Mesa.

### **Drainage Facilities**

Local drainage facilities—storm drains, channels, and retention and detention basins—are designed to control and manage storm water and urban runoff and to protect properties from flooding. Engineers size and design local and regional drainage facilities based on historic flooding data and an understanding of how urban development affects storm flows. Master plans identify any existing and future system deficiencies, and define improvements needed to provide a high level of flood protection. The City's Master Drainage Plan identifies numerous specific projects that will improve the storm drain system. Continued implementation of the plan provides the City with appropriate control and management over local drainage concerns.

Existing and proposed local drainage facilities are designed to provide a measure of control for stormwater generated within Costa Mesa for a 10-year storm. These facilities are identified in the City of Costa Mesa's *Master Plan of Drainage* for the key purpose of programming funding in the 10-year and 20-year Capital Improvement Programs (CIPs). The level of protection decreases with longer-term storm events because the facilities are not designed to handle 25-year or 100-year storm runoff. Although proposed and programmed improvements to the City's drainage facilities pursuant to the CIPs will reduce the damage from these higher-than-design storms, the City has deemed it impractical to design the local drainage system for greater than a 10-year storm. Because of this, minor flooding can be expected when local flows exceed the system's capacity or if inlets plug with trash and debris. Figure 4.9-1, Improvements by Watershed Area, identifies programmed improvements.

### Hydrologic Hazards

#### Flooding

The greatest potential flood hazard in the City is from the Santa Ana River, followed by the Greenville-Banning Channel and the Santa Ana-Delhi Channel. Costa Mesa is located immediately adjacent to the Santa Ana River, the largest river system in Southern California. The basin area of this system encompasses a total of approximately 3,200 square miles, including portions of San Bernardino, Riverside, and Orange Counties. In the recent past, the channel capacity for the Santa Ana River upstream of Costa Mesa was not sufficient to carry either 100-year or the 500-year frequency floods. Under such flood conditions, excess flood flow has the potential to breech the levee in the City of Santa Ana, causing widespread flooding in both Santa Ana and Costa Mesa due to ponding of water directly upstream of I-405. However, the Santa Ana River Mainstem project, which is under construction and 95% complete, was designed by the Orange County Flood Control Agency to provide flood protection to Orange, Riverside, and San Bernardino Counties (OCFCA 2015).

The Mainstem project involved making improvements over 75 miles of the Santa Ana River from its headwaters east of the City of San Bernardino to the mouth of the river at the Pacific Ocean between the Cities of Newport Beach and

Huntington Beach. The Mainstem project increases flood protection to more than 3.35 million people within the three Counties. The project included seven independent features: Seven Oaks Dam, Mill Creek Levee, San Timoteo Creek, Oak Street Drain, Prado Dam, Santiago Creek, and the Lower Santa Ana River.

The portion of the project adjacent to the City of Costa Mesa is the Lower Santa Ana River project. This project involved making improvements to 23 miles of existing river channel from Weir Canyon Road to the Pacific Ocean. Work included channel widening, improvements to the existing Greenville-Banning Channel located parallel to the river near the coast, relocation of the Talbert Channel ocean outlet and construction of rock jetties and derrick stone jetties at the mouth of the river, and bridge modifications to accommodate the widened channel. The Mainstem is expected to be completed in 2016 (OCFCA 2015).

#### Dam Inundation

Prado Dam is located northeast in Riverside County. The dam was designed in the 1930s but has recently increased its functioning capability due to the Seven Oaks Dam, which was completed in November 1999 and is located approximately 40 miles upstream on the Santa Ana River. During a flood, Seven Oaks Dam will store water destined for Prado Dam for as long as the reservoir pool at Prado Dam is rising. When the flood threat at Prado Dam has passed, Seven Oaks Dam will begin to release its stored flood water at a rate that does not exceed the downstream channel capacity. Working in tandem, the Prado and Seven Oaks Dams provide increased flood protection to Orange County.

The City of Costa Mesa—along with the cities of Anaheim, Buena Park, Cerritos, Cypress, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, Long Beach, Newport Beach, Orange, Placentia, Santa Ana, Seal Beach, Stanton, Westminster, and Yorba Linda—are located within the dam inundation area of Prado Dam. Properties in the northern and western portions of the City lie within the inundation paths of the Prado Dam (see Figure S-4 in the draft Safety Element). The Prado Dam has been designed to protect against a 100-year flood (or a one percent chance event). During any 100-year period, a 39 percent risk exists that one or more floods will occur that exceed the design level.

#### Flood Hazard Management/Drainage

Costa Mesa sits alongside the Santa Ana River. This regional water feature presents a potential flooding hazard, as it drains Southern California's largest watershed, originating in the San Bernardino Mountains and draining over 3,000 square miles. Significant flood control improvements have been installed along the river course, with the goal of protecting properties along its route from flooding hazards. The Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency (FEMA) identify areas within the City susceptible to 100-year and 500-year floods. In the event of a 500-year flood, the northern and western boundaries of Costa Mesa are susceptible to flooding, as shown in Figure 4.9-2, *Local Flooding Hazards*. In the event of a 100-year flood, minimal flooding is expected to occur within the flood channels adjacent to the Talbert Nature Preserve.

Local drainage and runoff problems can be controlled through proper anticipation of potential flood problems, analysis of existing and future system deficiencies and construction of appropriate flood control facilities. The Master Drainage Plan was prepared for the City in December 1969, and is updated periodically. This plan delineates numerous specific projects to improve Costa Mesa's storm drain system (Figure 4.9-1, *Master Drainage Plan*). Continued implementation of this plan and the construction of the remaining improvements should provide the City with appropriate control over local drainage concerns.

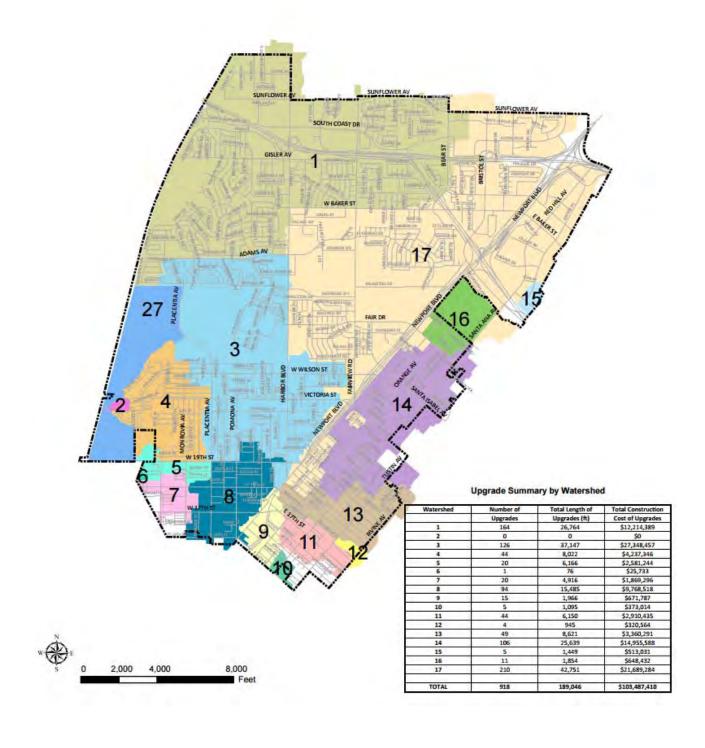


Figure 4.9.1 Improvements by Watershed Area

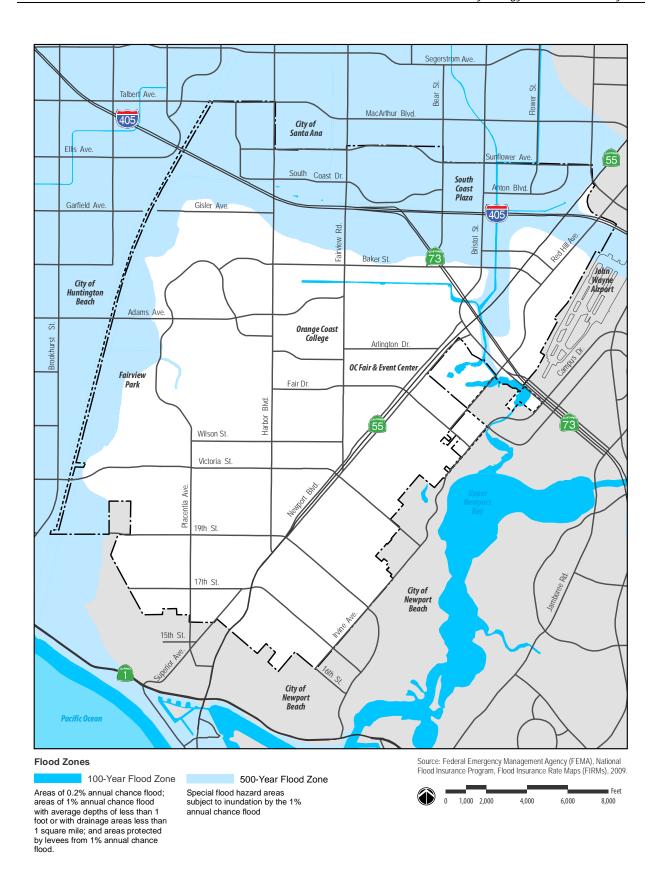


Figure 4.9.2 Local Flooding Hazards

## Regulatory Framework

The following section provides information regarding important regulatory programs currently in effect. This section does not purport to list all regulations relevant to hydrology and water quality issues; however, it does outline major programs applicable to the planning area.

#### Federal and State Regulations

#### Federal Clean Water Act of 1972

The primary federal law regulating water quality is the Clean Water Act (CWA), administered by the U.S. EPA. The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters through prevention and elimination of pollution.

The CWA applies to discharges of pollutants into so-called Waters of the Unites States<sup>1</sup>. The CWA establishes a framework for regulating stormwater discharges from municipal, industrial, and construction activities under the National Pollutant Discharge Elimination System (NPDES). The CWA sections most relevant to this analysis are summarized below. In some instances, the U.S. EPA delegates its authority for implementing the CWA in California to the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB).

- Section 303(d) of the CWA requires states, territories, and authorized tribes to develop a list of water bodies that are considered to be "impaired" from a water quality standpoint. Water bodies that appear on this list do not meet water quality standards even after the minimum required levels of pollution control technologies have been implemented to reduce point sources of pollution. In turn, the law requires that respective jurisdictions (i.e., RWQCBs) establish priority rankings for surface water bodies on the list and develop action plans, referred to as total maximum daily loads (TMDLs), to improve water quality. The California SWRCB publishes the list of water-quality limited segments in California.
- Section 402 of the CWA establishes the NPDES permit program to regulate the discharge of pollutants from point sources. The CWA defines point sources of water pollutants as "any discernable, confined, and discrete conveyance" that discharges or may discharge pollutants. These are sources from which wastewater or stormwater is transmitted in some type of conveyance (pipe and channel) to a water body; they are classified as municipal or industrial. Municipal point sources consist primarily of domestic treated sewage and processed water, including municipal sewage treatment plant outfalls and stormwater conveyance system outfalls. These outfalls contain harmful substances that are emitted directly into Waters of the U.S. Without a permit, the discharge of pollutants from point sources into Waters of the U.S. is prohibited. NPDES permits require regular water quality monitoring. Assessments must be completed to ensure compliance with the permit standards.

4.9-6

<sup>&</sup>lt;sup>1</sup> For purposes of the Clean Water Act, "Waters of the United States" means:

<sup>(</sup>a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

<sup>(</sup>b) All interstate waters, including interstate "wetlands";

<sup>(</sup>c) All other waters such as inter-state lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) Which are used or could be used for industrial purposes by industries in interstate commerce;

<sup>(</sup>d) All impoundments of waters otherwise defined as waters of the United States under this definition;

<sup>(</sup>e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

<sup>(</sup>f) The territorial sea; and

<sup>(</sup>q) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition

### National Pollutant Discharge Elimination System (NPDES)

The NPDES program requires permitting for activities that discharge pollutants into Waters of the U.S. This includes discharges from municipal, industrial, and construction sources. These are considered point sources from a regulatory standpoint. Generally, these permits are issued and monitored under the oversight of the State Water Resources Control Board (SWRCB) and administered by each regional water quality control board. A brief discussion of these permit types is presented below.

#### Municipal

Municipal separate storm sewer systems (MS4) are issued permits based on the size of the municipality. Municipalities with populations between 100,000 and 250,000 are considered "medium," and municipalities with populations over 250,000 are considered "large." All others are considered "small." MS4 permit requirements include reduction of pollutant discharges to the "maximum extent practicable" and protection of water quality. Requirements also include identification of major outfalls and pollutant loads and control of discharges from new development and redevelopment. To address these objectives, municipalities are required to prepare stormwater management plans. Although urban runoff is considered a nonpoint source of pollution, municipal storm drain outlets are readily defined and can be individually monitored, thereby defining them as point sources for the purposes of administering NPDES permits, even though the origin of the source is diffuse. Although the NPDES program does not regulate nonpoint sources of pollution, the Santa Ana RWQCB has other programs in place to address nonpoint sources. Furthermore, many of the programs implemented under the City's MS4 permit address nonpoint sources (CRWQCB 2015).

The City of Costa Mesa is subject to the NPDES permitting process under its MS4 codified as Title 14 (Storm Drains and Floodplain Management) of the Municipal Code. The City is also a permittee under the Santa Ana RWQCB Order No. R8-2009-0030 (NPDES No. CAS618030) that issues the regional NPDES permit to Orange County (CRWQCB 2015). These permits are discussed in detail below under the "local" regulations discussion. In particular, municipal permits regulate discharges from the City's urban runoff, its wastewater treatment facility, and its water reclamation facility.

#### Industrial

The State Water Resources Control Board issues the Industrial General Permit (Order No. 97-03-DWQ) that regulates discharges from 10 broad categories of industrial activities. The permit requires preparation of a Storm Water Pollution Prevention Plan (SWPPP) and monitoring program to implement water quality objectives through use of the best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT).

#### Construction

Construction activities that disturb one acre or more (whether a single project or part of a larger development) are required to obtain coverage under the State's General Permit for Dischargers of Storm Water Associated with Construction Activity. All dischargers are required to obtain coverage under the Construction General Permit. The activities covered under the Construction General Permit include clearing, grading, and other disturbances. The permit requires preparation of a SWPPP and implementation of Best Management Practices (BMPs) with a monitoring program.

Wastewater Discharge Requirements (WDRs) are issued to facilities discharging wastewater directly into receiving surface waters. Such facilities are required to be permitted either individually or under a general permit.

#### Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Porter-Cologne), the SWRCB has authority over State water rights and water quality policy. Porter-Cologne also established nine RWQCBs to oversee water quality on a day-to-day basis at the local/regional level. RWQCBs engage in a number of water quality functions in their respective regions. One of the most important is preparing and periodically updating the water quality control plans. Each plan establishes:

- beneficial uses of water designated for each water body to be protected;
- water quality standards, known as water quality objectives, for both surface water and groundwater; and
- actions necessary to maintain these standards in order to control non-point and point sources of pollution to the State's waters.

Permits issued to control pollution (i.e., waste-discharge requirements) must implement Basin Plan requirements (i.e., water quality standards), taking into consideration beneficial uses to be protected. Regional Boards regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. Any person proposing to discharge waste within any region must file a report of waste discharge with the appropriate regional board. No discharge may take place until:

- the Regional Board issues waste discharge requirements or a waiver of the waste discharge requirements, and
- 120 days have passed since complying with reporting requirements.

Under the auspices of the EPA, the SWRCB and nine Regional Boards also have the responsibility of administering the NPDES permits discussed above.

### National Dam Safety Act of the Federal Emergency Management Authority (FEMA)

The National Dam Safety Act of 2006 authorized a program to reduce the risks to life and property from dam failure by establishing a safety and maintenance program. As the lead Federal agency for the National Dam Safety Program (NDSP), FEMA is responsible for coordinating efforts to secure the safety of dams throughout the United States. NDSP is a national program that targets the improvement of dams and the safety of those who live in surrounding communities. Since it was first authorized by Congress in 1996, there have been marked improvements in the safety of many of the nation's dams. The program makes federal funds available to the states, which are primarily responsible for protecting the public from dam failures of non-federal dams, and pursuing initiatives that enhance the safety of dams posing the greatest risk to people and property (2015).

#### **Regional and Local Regulations**

#### Santa Ana River WQCB Basin Plan

Water quality and waste discharge standards are adopted and enforced by the Santa Ana WQCB through its Water Quality Control Plan (Resolution No. 94-01) (SAWQCB 2008). The Santa Ana River Basin Plan ("Basin Plan") was most recently updated in February 2008, with nonsubstantive editorial corrections made to Chapter 4 in June 2011. The Basin Plan provides policies, objectives, and guidelines for the maintenance and improvement of water quality in surface and groundwater bodies. The Basin Plan identifies existing and potential beneficial uses of the Basin's water bodies, including recreation, drinking water, and habitat. Water quality objectives set a wide range of requirements for water bodies that include aesthetic values, and maximum chemical and mineral loads. The NPDES program's administration is the primary method for addressing point source pollution issues within the Basin. Nonpoint source pollution is addressed through the WQCB's participation in the State administered Nonpoint Source Pollution Control Program. The Santa Ana WQCB has instituted various implementing programs to meet the objectives of the Basin

Plan; these area too numerous to list here but include water reclamation requirements, waste discharge prohibitions, water quality certification, and monitoring and enforcement of the Basin standards.

The Santa Ana River reach that is adjacent to the City of Costa Mesa is referred to as Reach 1 in the Basin Plan. From the City of Anaheim to where the river reaches the Pacific Ocean, flows are slow to non-existent due to groundwater recharging that takes place near Anaheim (SAWQCB 2008).

North Orange County Watershed Management Area Integrated Regional Watershed Management Plan (NOC IRWMP) and Central Orange County Watershed Management Area Integrated Regional Watershed Management Plan (COC IRWMP)

The primary purpose of the North Orange County Integrated Regional Watershed Management Plan is to bridge existing and developing watershed planning efforts, allowing for more effective collaboration and greater opportunity to leverage agency resources across jurisdictions (OCPW 2011). The NOC IRWMP addresses:

- the issues and priorities of the NOC IRWMP;
- the goals and objectives of the NOC IRWMP;
- current watershed efforts;
- strategies for meeting the identified goals and objectives; and
- ways to evaluate the plan and update it as necessary.

The NOC IRWMP region encompasses the Santa Ana River Watershed, the Lower San Gabriel River/Coyote Creek Watershed, and the Anaheim Bay-Huntington Harbor Watershed. These watersheds house 1.5 million residents and provide employment for almost 1.0 million employees, including providing the water and wastewater needs for the area. These watersheds carry the runoff for approximately one-third of Orange County's area. These watersheds also provide the riparian habitat for many flora and fauna and include 35 miles of ocean coastline and many of the remaining significant estuary areas along the southern California coastline. Beach closures, clean oceans and meeting TMDL/NPDES requirements are critical components as are using our water resources in an efficient manner (OCPW 2011).

The objectives of the NOC IRCWP are as follows:

- 1. Protect and Enhance Water Quality in Region
- 2. Enhance Local Water Supplies
- 3. Promote Flood Management
- 4. Enhance and Maintain Wetlands/Coastal Areas and Wetland Functions
- 5. Manage Runoff and its Related Impacts from Existing and Future Land Uses
- 6. Maximize Funding from State and Federal Sources
- 7. Promote and Support Public Education Programs and Available Information
- 8. Reduce Invasive Species and Enhance and Maintain Habitat
- 9. Promote Environmental Justice
- 10. Enhance Recreational Opportunities in the Watershed

The Central Orange County Integrated Regional and Coastal Watershed Management Plan (COC IRCWMP) addresses critical water resource management needs for the Newport Bay and Newport Coast Watersheds, a highly urbanized area with a population of 705,000 people (OCPW 2007). Within this developed area exist fragile coastal ecosystems with three designated Critical Coastal Areas (CCAs) and two Areas of Special Biological Significance (ASBSs); the Upper Newport Bay CCA, Newport Beach Marine Life Refuge ASBS, and Irvine Coast Marine Life Refuge (ASBS) are the receiving waters for drainage from throughout the watershed area. The IRCWMP incorporates the tenets of integrated regional water management planning to address challenging issues for water quality, habitat protection and enhancement, flood control, water supply and stormwater management. This plan is a programmatic

planning document for the region and has been prepared in accordance with the State's Integrated Regional Water Management Plan Standards as required per California Water Code Section 79560 et seq.

The objectives of the COC IRCWMP to protect important resources are as follows:

- 1. Improve water quality in streams and channels, particularly those that are listed as impaired, and those discharging to Upper and Lower Newport Bay, Newport Beach Marine Life Refuge, and Irvine Coast Marine Life Refuge in order to reduce impacts on these CCAs and ASBSs.
- 2. Provide for implementation of restoration projects, BMPs, and other control measures to support beneficial uses of creeks, streams, bays and estuaries, and to facilitate attainment of TMDL targets, receiving water quality objectives, the Santa Ana RWQCB's Watershed Management Initiative, and NPDES permit requirements.
- 3. Provide a comprehensive, regional, watershed-wide approach to address runoff and its related impacts from existing and future land uses, in accordance with the Non-point Source Pollution Plan.
- 4. Protect, restore, enhance, and connect wetland and wildlife habitats and support ecosystem processes in the coastal zone and upper watershed, while maintaining flood protection.
- 5. Enhance quantity and quality of local water supplies, including groundwater, to reduce reliance on imported water.
- 6. Provide a safe, reliable drinking water supply and recreational opportunities for disadvantaged communities within the region, consistent with other areas of the region.
- Provide a framework for efficient intra-regional cooperation, planning, and implementation of this and other
  plans that have been developed for the region, which encourages integrated implementation of watershed
  improvement projects with multiple benefits.

#### Costa Mesa Municipal Code

The City's Municipal Code addresses hydrology and water quality issues through Title 8, Health and Sanitation. Chapter 1III, and in particular:

Section 8-32. Control of Urban Runoff. (a) New development and significant redevelopment. (1) All new development and significant redevelopment within the City of Costa Mesa shall be undertaken in accordance with:

(i) The Drainage Area Management Plan, including but not limited to the Development Project Guidance; and (ii) Any conditions and requirements established by the development services department and the public services department which are reasonably related to the reduction or elimination of pollutants in stormwater runoff from the project site. The City has adopted the 2007 California Building Code (CBC) and other applicable codes pursuant to this Chapter.

Municipal Code (Chapter V. Development Standards, Article 10)

The floodway and floodplain districts and regulations are intended to be applied to those areas of the city which, under present conditions, are subject to periodic flooding and accompanying hazards. The objectives of the floodway and floodplain districts include:

(a) Prevention of loss of life and property and minimization of economic loss caused by flood flows.

- (b) Establishment of criteria for land management and land use in floodprone areas that are consistent with the criteria promulgated by the Federal Emergency Management Agency for the purpose of providing flood insurance eligibility for property owners.
- (c) Prohibition of encroachments, new construction or other improvements or development that would obstruct or divert the flow of floodwaters within a regulatory floodway.
- (d) Regulation and control of use of land below the elevation of the design flood flow within the remainder of the floodplain.

## Thresholds of Significance

A significant impact could occur if the General Plan Amendments would:

- A. Violate any water quality standards or waste discharge requirements.
- B. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- C. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- D. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- E. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- F. Otherwise substantially degrade water quality.
- G. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- H. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- I. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- J. Result in inundation by seiche, tsunami, or mudflow.

## Environmental Impacts



Implementation of the General Plan Amendments would not violate any water quality standards, waste discharge requirements, or otherwise degrade water quality.

There are two major classes of pollutants: point source and non-point source. Point-source pollutants can be traced to their original source. Point-source pollutants are discharged directly from pipes or spills. Raw sewage draining from a pipe directly into a stream is an example of a point-source water pollutant. Non-point-source pollutants (NPS) cannot be traced to a specific original source. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even our underground sources of drinking water. NPS pollutants include:

- Excess fertilizers, herbicides, and insecticides from agricultural lands and residential areas
- Oil, grease, and toxic chemicals from urban runoff and energy production
- Sediment from improperly managed construction sites, crop and forest lands, and eroding stream banks
- Salt from irrigation practices and acid drainage from abandoned mines
- Bacteria and nutrients from livestock, pet wastes, and faulty septic systems
- Atmospheric deposition and hydromodification

Impacts associated with water pollution include ecological disruption and injury or death to flora and fauna, increased need and cost for water purification, sickness or injury to people, and degradation or elimination of water bodies as recreational opportunities.

Future development consistent with General Plan land use policy has the potential to increase urban runoff from residential, commercial, industrial, utility, and roadway sources. The Land Use Element allows for the potential conversion of agricultural lands to development on the Segerstrom Home Ranch and Sakioka Lot 2 parcels north of I-405, as well as repurposing of the Fairview Developmental Center site, which currently includes landscaped grounds. (While the proposed project also allows for intensification of development on properties affected by the Residential Incentive and Harbor Mixed-Use Overlays, on Los Angeles Times site, and in the SoBECA area, these areas are already developed with impervious surfaces. New development would not create any new impervious surfaces and would present opportunities to better control current runoff through implementation of modern and mandated runoff control features.) Runoff from development on the Segerstrom Home Ranch, Sakioka Lot 2, and Fairview Developmental Center could increase pollutant loading in downstream waters, including the Santa Ana River. Additionally, accidents, poor site management, or negligence by property owners and tenants can result in accumulation of pollutant substances on parking lots and loading and storage areas, or result in contaminated discharges directly into the storm drain system. The City currently inspects all residential, commercial, institutional, and industrial development and enforces structural and non-structural BMPs as adopted in the Santa Ana River Basin Plan to ensure compliance with the City's MS4 and eliminate such discharges. Future commercial and other development supported by the proposed General Plan Amendments would be subject to the same monitoring and enforcement procedures.

NPDES regulations applicable to the planning area are designed to reduce non-point-source pollutant loading through implementation of BMPs and other control measures that minimize or eliminate pollutants from urban runoff, thereby protecting downstream water resources. The City implements NPDES provisions through the requirements of its MS4 permit, which is applicable to all portions of the City. BMPs implemented to address residential pollutant sources generally revolve around educational programs. Commercial and industrial development is subject to annual inspections to ensure implementation of BMPs and educational programs.

Violations of water quality standards due to urban runoff can be prevented through the continued implementation of existing regional water quality regulations and through successful implementation of the City's local water quality control standards imposed on new development and redevelopment over the long term. The proposed General Plan Amendments would not interfere with the implementation of water quality regulations and standards. The draft Conservation Element includes policies CON-3.F through CON-3.K []address water quality and urban runoff. The policies are geared toward reducing stormwater runoff and ensuring that runoff that does enter the storm drain system is free of pollutants. Long-term water quality impacts due to non-point sources are less than significant.

#### GOAL CON-3: IMPROVED WATER SUPPLY AND QUALITY.

Pursue a multijurisdictional approach to protecting, maintaining, and improving water quality and the overall health of the watershed. A comprehensive, integrated approach will ensure compliance with federal and State standards, and will address a range of interconnected priorities, including water quality and runoff; stormwater capture, storage and flood management techniques that focus on natural drainage; natural filtration and groundwater recharge through green infrastructure and habitat restoration; and water recycling and conservation.

<u>Objective CON-3:</u> Work towards the protection and conservation of the City's existing and future water resources by recognizing water as a limited resource that requires conservation.

#### Water Quality and Urban Runoff

- Policy CON-3.F: Work with public and private property owners to reduce stormwater runoff in urban areas to protect water quality in storm drainage channels, the Santa Ana River, and other local water courses that lead to the Pacific Ocean.
- Policy CON-3.G: Continue to develop strategies to promote stormwater management techniques and storm drain diversion programs that collectively and naturally filter urban runoff.
- Policy CON-3.H: Continue to comply with the National Pollutant Discharge Elimination System Program (NPDES) by participating in the Countywide Drainage Area Management Plan (DAMP), which stipulates water quality requirements for minimizing urban runoff and discharge from new development and requires the provisions of applicable Best Management Practices (BMP).
- Policy CON-3.I: Require all applicable development project be reviewed with regards to requirements of on-site Water Quality Management Plan and State requirements for runoff and obtaining a Storm Water Pollution Prevention Plan (SWPPP) permit
- Policy CON-3.J: Continue to consult with the Costa Mesa Sanitation District and the Orange County Sanitation District to modernize wastewater treatment facilities to avoid overflows of untreated sewage.

Wastewater collection is performed by the Costa Mesa Sanitation District. All wastewater is directed to the Orange County Sanitation District's Wastewater Treatment Plants located in Fountain Valley and Huntington Beach. These plants are regulated by the Santa Ana RWQCB. Current and future operations of the reclamation and treatment plants will be subject to provisions that require secondary or tertiary treatment of all wastewater prior to being utilized as non-potable recycled water or being discharged into the Santa Ana River. Wastewater treatment requirements are based on the Santa Ana River's water's beneficial uses and the ability for that body to accept effluent loads. Wastewater production would increase incrementally as future development projects under the General Plan Amendments are built. However, future development is unlikely to affect current operations due to the requirements to design new development to minimize water use and thus reduce wastewater discharge. Any increase in pollutant loading in wastewater received at the plants will be subject to the most current wastewater discharge requirements to properly treat all wastes to help maintain the beneficial uses of the Santa Ana River. Nothing in the proposed General Plan Amendments would change or interfere with the operations of the treatment plants and thus, would have less than significant impacts relating towastewater discharge.

IMPACT 4.9. B Impacts related to depleting groundwater supplies or interfering substantially with groundwater recharge would be less than significant with application of existing standards and regulations.

Future development within the planning area would require additional water services that would come from local groundwater sources. Future development may also impact groundwater recharge by increasing impervious surfaces that could hinder percolation of drainage into subsurface aquifers. Future development could also impact groundwater recharge if existing spreading grounds are altered (e.g., developed upon) without construction of replacement facilities. Additionally, drainage may be directed away from its natural source where it may be deposited in other water bodies. Impacts associated with depleted groundwater supplies included increased demand on out-of-region water resources

and the energy and cost associated with the importing of other resources. The lowering of aquifer and groundwater levels in an area can cause existing wells and pumps to become non-functional if they are not designed to extract water below certain depths.

The groundwater basin of concern is the Lower Santa Ana Groundwater Basin, as discussed in *Existing Conditions* above. The Mesa Consolidated Water District (Mesa) owns and operates nine groundwater production wells. Seven of these wells are currently in operation. These seven wells have a total design capacity of approximately 14,000 gallons per minute (GPM). All of the wells are located in the northwest portion of the service area and produce water from the Orange County groundwater basin managed by OCWD. Mesa relies on approximately 15,900 acre-feet of groundwater from the Lower Santa Ana River Groundwater Basin (Orange County Basin) each year. This local source of supply meets approximately 82% of Mesa's total annual demand (Mesa 2010).

The 2010 Urban Water Management Plan (UWMP) includes programs for the long-term management of area groundwater basins (Mesa 2010). The primary means of ensuring long-term groundwater level maintenance include careful monitoring to ensure groundwater levels are managed within a safe basin operating range and implementation of water conservation programs. The proposed General Plan Conservation Element supports water conservation through use of natural and drought-tolerant vegetation and through water recycling (refer to policies CON-3.C, D, and E below). Additionally, water conservation programs of Mesa are designed to ensure groundwater resources are recharged both through natural and assisted means. Water conservation helps to maintain groundwater levels by reducing the need to extract from them. Due to the ongoing drought water agencies statewide are mandated to reduce water use by at least 20% through conservation and by educating water users on how to reduce water use. Mesa enacted an emergency water conservation ordinance in May 2015 and has been able to significantly reduce water use through the implementation of conservation programs (Mesa 2015, website (mesawater.org) accessed in December 2015).

#### Water Conservation

Policy CON-3.C: Encourage residents, public facilities, businesses, and industry to minimize water consumption, especially during drought years.

Policy CON-3.D: Restrict use of turf for new construction and landscape reinstallation that requires high irrigation demands, except for area parks and schools, and encourage the use of drought tolerant landscaping.

#### Water Recycling

Policy CON-3.E: Consult with local water districts and the Orange County Water District to advance water recycling program for new and existing developments, including the use of treated wastewater to irrigate parks, golf courses, roadway landscaping, and other intensive irrigation consumers.

Future growth associated with the proposed General Plan build out would require more water that comes from groundwater sources. As future development proposal seek regulatory permitting, they will be specifically assessed as to their impacts on groundwater resources. The General Plan Amendments do not include policies that would interfere with the determination and enforcement of safe yield limits; therefore, under the proposed polices of the project, impacts to groundwater supplies would be less than significant.

IMPACT 4.9. C Impacts related to altering existing drainage patterns or altering the course of a stream or river in a manner which would result in substantial erosion or siltation would be less than significant with implementation of draft General Plan policies and existing City standards.

Future development within the planning area is likely to change drainage patterns, which could have the potential to result in on- or off-site erosion and siltation. Short-term and long-term development activities could potentially result in erosion and siltation impacts as a result of alteration of natural drainage patterns. Siltation is the introduction of increased sediment flows into a water body. This can result in the shrinking of the water body, rising surface waters, habitat destruction, faunal injury or death, and flooding as sediments change the natural character of the water body. Siltation is generally associated with activities such as site grading and deforestation. During grading activities, extensive earth-moving activities and vegetation removal could alter existing natural drainage patterns. These short-term changes in natural drainage patterns could result in erosion and siltation because water movement across the affected area is increased without natural barriers in place. Vegetation stabilizes soil, reducing its ability to be washed downstream. If sufficient energy-reducing mechanisms such as rock rip-rap or detention basins are not provided, or if runoff is not diverted effectively through landscaped areas or other places where runoff can settle prior to discharge, there is a potential for runoff to cause scouring and erosion of open land that could generate silt and sediments that could negatively affect downstream waters.

The City has adopted existing regulations and policies that minimize on- and off-site flooding which can alter drainage patterns or stream course and cause erosion and sedimentation impacts. The floodway and floodplain districts regulations contained in the Municipal Code (Chapter V. Development Standards, Article 10) are specifically designed to prevent and regulate development in flood-prone areas. Conservation Element policies Policy CON-3.F to J above address water quality and urban runoff. With these regulation and policies in place, impacts related to drainage and on- or off-site flooding would be less than significant.

IMPACT 4.9.D Impacts related to altering existing drainage patterns or altering the course of a stream or river in a manner which would result in a substantially increase in the rate or amount of surface runoff in a manner which would result in flooding on- or off-site would be less than significant with implementation of draft General Plan policies and existing City standards.

Future development within the planning area is likely to change drainage patterns, which could have the potential to result in on- or off-site flooding. As development occurs, impervious surfaces (streets, other paved areas, etc.) are constructed that prevent infiltration and increased rates and volumes of runoff. Additionally, drainage courses could be modified based on site design and hydrologic conditions. This could result in the installation of a number of drainage conveyance devices including v-ditches, culverts, retention basins, curbs, and gutters to collect and direct runoff into specified areas. If local and regional storm drainage/flood control systems are not expanded in conjunction with new development, there could potentially be increased flooding downstream of development areas. On-site flooding could occur if site flow patterns are not engineered correctly or if the amount of runoff from the site exceeds the amount that can be conveyed by stormwater control devices. Potential impacts associated with flooding are property damage, impeded vehicle circulation and emergency access, injury, and possibly death.

The majority of the planning area is built out, with well-established drainage infrastructure. The Santa Ana River is still in a semi-natural state, although flood control devices such as levees have been constructed along reaches. Vacant land within the urbanized portions of the planning area contribute to localized drainage conditions; however, development of these lands would not result in the major alteration of any streams or drainage courses because of the existing drainage infrastructure. Additionally, currently undeveloped land that could be developed is limited to 88 acres, all of which is surrounded by existing development and drainage infrastructure.

The City has adopted existing regulations that minimize on- and off-site flooding, erosion, and sedimentation impacts. The floodway and floodplain districts regulations contained in the Municipal Code (Chapter V. Development Standards, Article 10) are specifically designed to prevent and regulate development in flood-prone areas. Development of storm drainage facilities is subject to the standard designs of the City's Engineering Division. The draft Safety Element includes policies (S-1.H to L below) related to flooding. Implementation of these standards and policies ensures that drainage facilities will be designed to effectively transport stormwater and thereby minimize on-site and off-site flooding due to development associated with changes in drainage patterns. Impacts related to drainage and on- or off-site flooding and sedimentation would be less than significant.

#### GOAL S-1: RISK MANAGEMENT OF NATURAL AND HUMAN-CAUSED DISASTERS.

Minimize the risk of injury, loss of life, property damage, and environmental degradation from seismic activity, geologic hazards, flooding, fire, and hazardous materials. Promote a sustainable approach to reduce impacts of natural disasters, such as flooding and fire.

<u>Objective S-1:</u> Work to mitigate or prevent potential adverse consequences of natural and human-caused disasters.

## Localized Flooding

Policy S-1.H: Continue to consult with appropriate local, State and Federal agencies to maintain the

most current flood hazard and floodplain information; use the information as a basis for project review and to guide development in accordance with Federal, State, and local

standards.

Policy S-1.I: Regularly review and update Article 10 - Floodway and Floodplain Districts of the City's

Municipal Code consistent with Federal and State requirements.

Policy S-1.J: Improve and maintain local storm drainage infrastructure in a manner that reduces

flood hazards.

Policy S-1.K: Continue to development hazards preparedness plans to prepare for large storms that

could bring flooding hazards and other related issues.

Policy S-1.L: Actively promote public education, research, and information dissemination on flooding

hazards.

IMPACT 4.9. E Impacts related to polluted urban runoff and storm drain capacity would be less than significant with implementation of existing standards and regulations.

Future development within the planning area could potentially increase stormwater flows into the existing storm drain system, mainly due to an increase in impervious surfaces that inhibit infiltration of stormwater. The increase in development and therefore impervious surfaces also increases the amount of urban runoff and generally increases the amount of pollutants within the stormwater. New development on existing undeveloped land would be restricted to approximately 88 acres north of I-405 on the Segerstom Home Ranch and Sakioka Lot 2 parcels, as well as the potential repurposing of the Fairview Developmental Center site.

The City's Engineering Department requires hydrology and stormwater discharge review during the City's standard development review process, as described above under the City Municipal Code Section 8-32. Conditions of approval are issued based on the project's drainage needs pursuant to municipal NPDES permit requirements and standard

engineering practices. Stormwater quality is discussed in Impact 4.9.A and notes that adherence to NPDES requirements for implementation of BMPs during construction and throughout project operation will ensure that stormwater discharges do not introduce excessive pollutants to downstream water bodies. Post-construction BMPs are implemented through preparation of a Water Quality Management Plan (WQMP) which identifies site design, structural and non-structural source control, and treatment control BMPs. Typical BMPs include use of bioswales, infiltration basins, hay bales, straw wattles, sediment fences, etc. Additionally, NPDES and City stormwater discharge requirements ensure that excessive pollutants are not discharged into the storm drain system; impacts to downstream water quality would be less than significant.

On- and off-site drainage control and storm drain design is reviewed by the Department of Public Works through applicant submission of hydrology reports and storm drain plans. Drainage design is required to comply with the City's *Master Plan of Drainage*. Standard drainage analysis and design practices will ensure that future development does not exceed the capacity of the existing or planned storm drain system. Additionally, fees are required pursuant to Section 14-65 of the Master Plan of Drainage Ordinance (Drainage Ordinance) to pay for operation, administration, maintenance, improvement, environmental restoration, and replacement of the existing and future storm drainage system. Impacts related to storm drain capacity would be less than significant with implementation of existing standards.

IMPACT 4.9. G Impacts due to the placement of housing within 100-year flood zones would not occur as a result of implementation of the General Plan Amendments.

The proposed General Plan Amendments do not authorize any residential construction and therefore could not directly result in the placement of housing within flood hazards areas. According to the Conservation Element Local Flooding Hazards Exhibit, no areas where land use changes are proposed would be subject to 100-year flooding. In particular, the proposed Amendments do not include any land use changes that would support residential development in flood hazard zones. No impacts to residential development as a result of potential flooding would occur. Furthermore, the floodway and floodplain districts section of the Municipal Code (Chapter V. Development Standards, Article 10) addresses inappropriate development in flood zones.

IMPACT 4.9. H Impacts related to the diversion of floodwaters would be less than significant with implementation of existing City regulations.

No land use changes authorized by the General Plan Amendments would place structures within a floodplain, as all proposed land use changes are outside of floodplains. Furthermore, all significant structures built within the City would be subject to the Floodplain Management Regulations (Chapter V, Article 10 of the Municipal Code) that require hydrological evaluation to ensure that minimal diversion of floodwaters occurs and development standards are implemented to prevent flooding of on- and off-site uses. These regulations specifically prohibit construction of structures that could cause or divert floodwaters without appropriate site planning and structural design. Implementation of existing regulations would reduce impacts associated with the potential diversion of floodwaters to less than significant levels.

IMPACT 4.9. I Impacts related to inundation due to dam or levee failure would be less than significant with implementation of existing federal and county regulations.

The General Plan Amendments would not interfere with the County's responsibilities in recertifying any levee within or protecting the planning area because there are no levees in the planning area. Impacts due to levee failure would be less than significant.

The Los Angeles Times and Segerstrom Home Ranch sites are contained in an area subject to inundation in the event of failure of both the Santiago Creek Dam and the Prado Dam (refer to Figure S-4 in the draft Safety Element). The National Dam Safety Act of 2006 authorized a program to reduce the risks to life and property from dam failure by establishing a safety and maintenance program. The program requires regular inspection of dams to reduce the risks associated with dam facilities. Furthermore, all dam operators are required to submit an evacuation plan for review and approval by the State Office of Emergency Services (OES). The evacuation plan for the Santiago Creek and Prado Dams are on file with the U.S. Army Corps of Engineers. The evacuation plans have been prepared in accordance with the *Federal Guidelines for Dam Safety*. The evacuation plans identify modes of dam failure, maps inundation areas, classifies hazard potential within inundation areas, determines available time for response under slow, rapid, or instantaneous failure scenarios, and establishes notification procedures. Continued inspection and maintenance of the two dams and the procedures outlined in the evacuation plans are considered adequate precautions to reduce impacts due to potential dam inundation to less than significant. Finally, the draft Safety Element contains policy S-1.0 (listed below) which addresses dam inundation. Impacts associated with dam inundation and would be less than significant.

#### Dam Inundation

Policy S-1.O: Develop emergency response, early warning notification, and evacuation plans for areas that are within dam inundation areas, where feasible.

IMPACT 4.9. J Impacts associated with mudflows, tsunami, and seiche would be less than significant with implementation of existing City regulations.

The potential for mudflow is minimal throughout the majority of the planning area because of the generally level grade and lack of hillsides, particularly within the areas where land use changes are proposed. None of the areas proposed for land use change lies within a tsunami and sea level rise hazard area, as depicted on Figure S-5 of the Safety Element of the General Plan. Finally, the draft Safety Element contains policies S-1.M and N (listed below) which address tsunamis and sea level rise. Therefore, impacts associated with tsunamis and seiches would be less than significant.

#### Tsunami and Sea Level Rise

Policy S-1.M: Minimize flood hazard risks to people, property, and the environment by addressing potential damage tsunamis and Sea Level rise.

Policy S-1.N: Consult with regional agencies and study strategies that employ engineering defensive methods along the Santa Ana River that limit potential flooding hazards from Sea Level rise.

# Mitigation Measures

None required

California Regional Water Quality Control Board, 2015. Santa Ana Region. Order No. R8-2009-0030, NPDES No. CAS618030. May 26, 2015.

California State Water Resources Control Board, 2015. Storm Water Program: Construction Storm Water Program. <a href="https://www.waterboards.ca.gov/water">www.waterboards.ca.gov/water</a> issues/programs/stormwater/construction.shtml [May 26, 2015].

California State Water Resources Control Board, 2009. *Construction General Permit Fact Sheet.* September 2, 2009.

California Water Code. Division 7: Porter-Cologne Water Quality Control Act. January 1, 2010.

City of Costa Mesa, 2006, Ordinance of the Costa Mesa Municipal Code Relating to Drainage.

City of Costa Mesa, 2015a. Draft Conservation Element of the General Plan, 2015.

City of Costa Mesa, 2015b. Draft Safety Element of the General Plan, 2015.

Federal Emergency Management Agency, 2004. Federal Guidelines for Dam Safety. April 2004.

Mesa Consolidated Water District, 2010, 2010 Urban Water Management Plan, Final, May 2011.

Orange County Flood Control Agency, 2015. Website: http://ocflood.com/sarp/lower

Orange County Public Works Dept. 2015. Website: http://ocwatersheds.com/programs/ourws/wmaareas/wmanorthoc

Orange County Public Works, 2011. *North Orange County Integrated Regional Watershed Management Plan,* February 2011.

Orange County Public Works, 2007. *Central Orange County Integrated Regional Watershed Management Plan,* August 2007.

Santa Ana Water Quality Control Board, 2008. *Water Quality Control Plan for the Santa Ana River Basin.* January 24, 1995, updated February 2008.

United States of America. National Dam Safety Act. Public Law Sections 109-406. 2006.

Western Regional Climate Center, 2015. Period of Record Monthly Climate Summary: Newport Beach Harbor, California (046175). http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6175 [May 15, 2015].

## Land Use & Planning 4.10

This section describes the existing land use pattern and land use planning/regulatory framework in the City of Costa Mesa. It also evaluates potential long-term land use impacts such as physically dividing an established community and consistency with environmental planning efforts. This section does not evaluate potential impacts on habitat conservation or natural community conservation plans; these are discussed in Section 4.3 (Biological Resources). Several comments regarding land use and planning were received in response to the Notice of Preparation, particularly with regard to land use compatibility. To the extent the issues relate to the significance criteria, they are addressed in the Impact section below.

## Existing Conditions

#### **Historic Land Use Trends**

Development in Costa Mesa started in the 1920s when the farming community of Harper was renamed to Costa Mesa (CM 2015). In the summer of 1920, the second store on Newport Boulevard, the Wayside Market, opened for business. Several more store buildings went up along the boulevard during 1921, including a garage and blacksmith shop, barber shop, and soda fountain. Growth continued in the 1930s and '40s with the opening of several commercial stores, including the new Sprouse-Reitz Variety at 1830 Newport Boulevard, the Myers & Myers Department Store at 1816 Newport Boulevard, and the Post Office at 1809 Newport Boulevard. Through 1940, Costa Mesa continued to be recognized as a small town. World War II accelerated Costa Mesa's growth, bringing many thousands of people to the area for training at the Santa Ana Army Air Base, located on what is now the Orange County Fairgrounds, Orange Coast College, and the present site of the Civic Center. When the war ended, many of these men and women returned with their families to begin a population boom that affected much of Southern California. The City formally incorporated in 1953 (CM 2015).

## **Existing Land Use Distribution**

The area covered by the General Plan Amendments consists of the corporate limits of the City (encompassing 15.8 acres) and lands within the City's unincorporated sphere of influence (SOI). State law authorizes a general plan to address the area within the boundaries of an adopting city, as well as any unincorporated land outside its boundaries that, in the planning agency's judgment, bears relation to its planning efforts. Costa Mesa's SOI includes two areas (LAFCO 2010):

- The 195-acre "Santa Ana Country Club (SACC)/South Mesa" Island (LAFCO ID#4) located south of SR-55. It comprises two parcels: the Santa Ana Country Club and a mixed-use area bordered by Mesa Drive and Irvine Ave. It is located between the cities of Costa Mesa and Newport Beach.
- The 14-acre "Santa Ana Avenue/Colleen Street" Island (LAFCO ID#3) off Santa Ana Avenue and 22<sup>nd</sup> Avenue. This residential area is adjacent to Newport Beach.

Figure 4.10-1, *Existing Land Use* depicts the existing land uses in the planning area, and Table 4.10-1, *Existing Land Use Summary* summarizes the distribution of land uses by major categories. Residential land is the predominant land use category, totaling 47% of the planning area. Industrial land uses comprise the second largest percentage at 10.5%. Combined office/commercial uses comprise 13.7% of the planning area, while open space and recreation uses comprise 14.1%. Only 20 acres within the planning area remain vacant, and 70 acres are still in agricultural production.

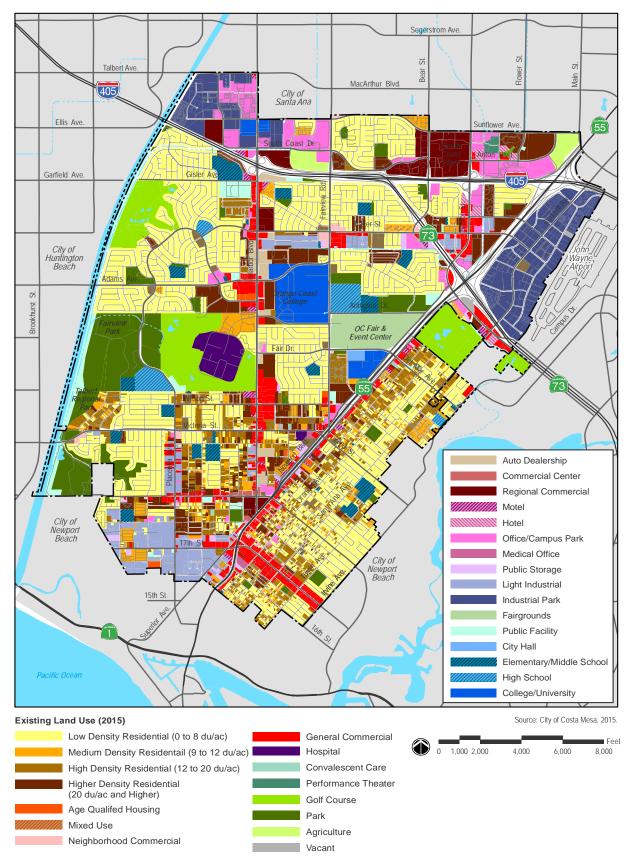


Figure 4.10-1 Existing Land Use (2015)

Table 4.10-1
Existing Land Use Summary

Existing Earla 050 Carrinary				
Land Use Category		Acres	Percent	
Residential		3,753	46.7	
Office		332	4.1	
Commercial		770	9.6	
Lodging: Motel/Hotel		60	0.7	
Industrial		841	10.5	
Schools/Colleges		525	6.5	
Public Facilities/Institutional		458	5.7	
Golf		535	6.7	
Parks		592	7.4	
Agriculture		72	0.9	
Religious Institutions		70	0.9	
Vacant		20	0.2	
	TOTAL	8,028	100.0%	
Source: Costa Mesa General Plan Draft Land Use Element 2	2015			

## Existing Planning and Regulatory Framework

#### Southern California Association of Governments (SCAG)

The Southern California Association of Governments (SCAG) is responsible for regional planning in the six-county Southern California encompassing Los Angeles, Imperial, Orange, Riverside, San Bernardino, and Ventura counties. SCAG provides a framework to coordinate local and regional decisions regarding future growth and development and prepares future growth forecasts for the region. As the designated Metropolitan Planning Organization for the area, SCAG's responsibilities include researching and developing plans for transportation, growth management, hazardous waste management, and air quality based on the regional growth projections (SCAG 2015).

### Orange County LAFCO

The Orange County Local Agency Formation Commission (LAFCO) is a State-mandated, independent agency with countywide jurisdiction over changes in organization and boundaries of cities and special districts within Orange County, including Costa Mesa (LAFCO 2015). The Orange County LAFCO has the responsibility to limit urban sprawl, prevent future conversions of agricultural and open space lands, review and approve changes in boundaries, establish city and county sphere of influence, and assist local government agencies in improving the efficiency of urban services. As discussed above, two unincorporated islands lie within the sphere of influence of the City of Costa Mesa. Both are south of SR-55 and adjacent to the City of Newport Beach.

### **Orange County General Plan**

The plan area contains unincorporated areas that are within the City's sphere of influence and thus under the jurisdiction of the Orange County General Plan. The Orange County General Plan, adopted in 2005 and updated in 2014, guides land use decision-making in unincorporated sections of the County. The Orange County General Plan includes multiple goals and policies relating to unincorporated areas that serve as a coordination tool and guide to development and the local decision-making process. The County General Plan consists of an introductory chapter, a demographics chapter, and nine elements: Land Use, Transportation, Public Services and Facilities, Resources, Recreation, Noise, Safety, Housing, and Growth Management. The County General Plan designates both the Santa Ana Country Club (SACC)/South Mesa and Santa Ana Avenue/Colleen Street unincorporated islands as "Suburban Residential" and allows 0.5 to 18 dwelling units per acre (Orange County 2014).

#### Costa Mesa General Plan

The General Plan, required for every city and county by the State of California, is the City's comprehensive community planning document. Any planning or zoning actions the City takes must be consistent with the General Plan. The General Plan consists of several mandatory elements, along with any optional elements. Costa Mesa's General Plan includes the following required and optional elements. All elements were updated in 2002, except for the Housing Element, which was updated in 2014. The proposed General Plan Amendments address the remaining 10 elements, including six of the seven State-mandated General Plan elements.

- Land Use Element
- Housing Element
- Circulation Element
- Growth Management Element
- Conservation Element
- Open Space and Recreation Element
- Historic and Cultural Resources Element
- Safety Element
- Noise Element
- Community Design

The existing Land Use Element establishes the following land use designations:

- Low-Density Residential
- Medium-Density Residential
- High-Density Residential
- Commercial Residential
- Neighborhood Commercial
- General Commercial
- Commercial Center
- Regional Commercial

- Urban Center Commercial
- Cultural Arts Center
- Industrial Park
- Light Industry
- Public/Institutional
- Golf Course
- Fairgrounds

## City of Costa Mesa v. Sphere of Influence Land Use Policies

Land use policies from properties within the City's sphere of influence are governed by the Orange County General Plan. The Costa Mesa General Plan applies land use designations that represent the City's preferences and intent on governing these properties, if annexed. Table 4.10-2 (City and County Land Use Designation Comparison) compares the land use designations between the City and the County for properties within the sphere of influence.

Table 4.10-2 City and County Land Use Designation Comparison

Unincorporated Parcels	City of Costa Mesa		Orange County		
	Designation	Density/Intensity	Designation	Density/Intensity	
South Mesa	Medium Density (MD)	12 du/ac	Suburban Residential (SR)	0.5 – 18 du/ac	
South Mesa (existing commercial parcel)	Medium Density (MD)	12 du/ac	Community Commercial	NA	
Santa Ana Ave/Colleen	Low Density (LD)	8 du/ac	Suburban Residential (SR)	0.5 – 18 du/ac	

#### Table 4.10-2 City and County Land Use Designation Comparison

Unincorporated Parcels	City of Costa Mesa		Orange County	
Santa Ana Country Club	Golf Course	NA	Open Space	NA
Source: Costa Mesa Gene	eral Plan Land Use Plan and C	Drange County General Plan L	and Use Designations	

#### City of Costa Mesa Planning, Zoning, and Development Code

Title 13 of the Municipal Code, the City's Planning, Zoning, and Development Code (Zoning Code), is the General Plan's primary implementation tool. Whereas the General Plan is a policy document and sets forth direction for land use policy-level decisions, the Zoning Code is a regulatory document that establishes specific standards for the use and development of all properties in the City, as well as subdivision regulations. The Zoning Code regulates development intensity using a variety of methods, such as setting limits on building setbacks, yard landscaping standards, and building heights. The Zoning Code also indicates the permitted land uses in the various zones.

## Specific Plans

A specific plan is a detailed plan for the development of a particular area. Specific plans provide specifications for the permitted land use types, development standards (setbacks, heights, landscape, architecture, etc.), circulation, and infrastructure improvements broadly defined by the General Plan. By law, a specific plan must be consistent with the General Plan. Specific plans are often used to ensure multiple property owners and developers adhere to a single common development plan, as well as to provide flexibility in development standards beyond those contained in the zoning ordinance as a means of achieving superior design.

#### Placentia/Hamilton/Pomona/19th Street Specific Plan

Adopted in May 1979, this specific plan allowed increased density on separate, smaller parcels if two or more parcels were developed as a single project. This specific plan area is not affected by the proposed land use changes.

#### North Costa Mesa Specific Plan

Adopted in 1994 and amended several times through 2007, the *North Costa Mesa Specific Plan* applies to properties north of I-405 and generally east of Harbor Boulevard. The *North Costa Mesa Specific Plan* contains provisions related to the maximum overall development of dwelling units, hotel rooms, and resident-serving retail/commercial uses for eight subareas, including the Segerstrom Home Ranch and Sakioka Lot 2 subareas for which changes area proposed as part of the General Plan Amendments. For the Segerstrom Home Ranch subarea, the project proposes increased development capacity by increasing the maximum allowable FAR from 0.40 to 0.64. For Sakioka Lot 2, no development capacity increase is proposed, although residential development would be allowed a maximum density of 80 units per acre (versus current limit of 20 units per acre).

#### Newport Boulevard Specific Plan

The Newport Boulevard Specific Plan applies to properties along Newport Boulevard and allows for a mix of commercial and residential uses, with residential development limited to a maximum of 17.4 units per acre. This specific plan area is affected by the proposed land use changes in that the proposed Residential Overlay would increase the maximum residential development density to 40 units per acre.

#### **Urban Plans**

The City has adopted several Urban Plans that both supplement and supercede the underlying zoning regulations. In addition to setting forth land use and development regulations, these Urban Plans contain standards for public realm improvements and design guidelines. The *SoBECA Urban Plan* is bounded by Baker Street, Bristol Street, and State Route 73 (Corona Del Mar Freeway). It includes a mix of housing and retail/service commercial businesses, light industrial uses, creative studios, retail campuses, and entertainment and restaurant uses that attract local residents and visitors. The Westside Urban Plans apply to properties generally located west of Newport Boulevard and south of 19th Street.

# Thresholds of Significance

The General Plan Amendments Land would result in a significant land use impact if they would:

- A. Physically divide an established community.
- B. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.
- C. Conflict with any applicable habitat conservation plan or natural community conservation plan.

## Environmental Impacts

#### **Proposed Land Use Element Amendments**

The proposed amendments to the Land Use Element include an updated Land Use Plan that focuses on providing new development in strategic areas and along corridors that can accommodate such development, and that provide opportunities to take advantage of ready transit access. These land use changes represent only four percent of the land area in the entire City and target only specific areas of the City. The strategy behind these targeted land use changes is to allow for increased development capacity in very focused areas to incentivize revitalization and private investment and/or accommodate market demand for housing and other uses where available infrastructure can support growth. The Land Use Plan proposes the following:

- A new land use designation (Fairview) that applies to the Fairview Development Center site to allow for the future repurposing of this State-owned property to residential and open space uses
- A change in the land use designation on a site referred to as the Los Angeles Times property from Industrial Park to Urban Center Commercial
- Creation of a two new overlay designations: Residential Incentive Overlay and Harbor Mixed Use Overlay
- Amendments policies affecting the SoBECA Urban Plan to allow for residential densities of up to 40 units per acre, with a cap of 450 units overall
- Amendments to policies affecting the North Costa Mesa Specific Plan, which includes the Segerstom Home Ranch and Sakioka Lot 2 properties to increase the development cap applicable to the Segerstrom Home Ranch property and allow residential densities of up to 80 units per acre on the Sakioka Lot 2 site (without increasing the maximum permitted unit yield)

Previous Figure 3.0-5 (Focus Area Overview Map) in the Project Description section identifies the focus areas. Descriptions of each are provided below. Each focus area has been studied for land use opportunities that promote desirable uses. The boundaries were established with the intent to minimize impacts to existing low-density residential, large commercial, and industrial properties. The alternatives include a variety of residential and commercial intensities for most of the focus areas to encourage discussion and provide a range of options for consideration.

#### Fairview

This site is currently occupied by the Fairview Developmental Center, a State-owned and operated facility currently serving approximately 270 people with developmental and intellectual disabilities. The State has no immediate plans to discontinue this use. However, the City has established the new land use designation to provide a vision for the ultimate reuse of the site at the time the State opts to consolidate or relocate the current operation. The Fairview land use designation (Figure 3.0-6, *Fairview Focus Area*) allows a mixture of residences (up to 500 units at a residential density ranging from 15 to 25 units per acres), parks and open spaces, public facilities, and institutional uses.

#### Residential Incentive Overlay

The Residential Incentive Overlay would create opportunities for residential development at strategic locations along Harbor Boulevard and Newport Boulevard (Figure 3.0-7, *Residential Incentive Overlay Focus Area*). With regard to Harbor Boulevard, this designation would allow for new higher-density residential uses at up to 40 units per acre in areas where only commercial uses were previously allowed. Buildings can be up to four stories in height, provided privacy concerns of established neighborhoods are adequately addressed through the setbacks of upper stories or other design approaches.

Along the east side of Newport Boulevard, the Residential Overlay would allow for new higher-density residential uses of up to 40 units per acre in areas where only mixed-use and residential development up to 17.4 units per acre were previously allowed. Buildings could be up to four stories in height, provided privacy concerns of established neighborhoods are adequately addressed through the setbacks of upper stories or other design approaches.

#### <u>Harbor Mixed-Use Overlay</u>

The Harbor Mixed-Use Overlay Zone is intended to promote lot consolidation for marginal commercial properties and provide a synergy between the Harbor Boulevard commercial corridor and 19<sup>th</sup> Street, focusing on the Triangle commercial center as the downtown (Figure 3.0-8, *Harbor Mixed-Use Overlay Focus Area*). The mixed-use corridor also provides housing and commercial opportunities along the southern portion of Harbor Boulevard (between Wilson Street and 19<sup>th</sup> Street) at a maximum density of 20 dwelling units per acre and new commercial opportunities with a maximum floor-area ratio of 1.0.

#### Los Angeles Times Site

The Los Angeles Times site is proposed to be designated Commercial Center and to accommodate the future development of commercial and office uses at floor-area ratios of 0.54 and 0.64, respectively (Figure 3.0-9, *Los Times Angeles Times Site*). The site, which is occupied by a former Los Angeles Times publishing plant and is currently owned by Tribune Publishing, includes an adjacent site recently purchased by Tribune Publishing.

#### *SoBECA*

Limited revisions would apply to the established *SoBECA Urban* Plan, which is bounded by Baker Street, Bristol Street, and State Route 73 (Corona Del Mar Freeway) (Figure 3.0-10, *SoBECA Focus Area*). The *SoBECA Urban Plan* will continue to include a mix of housing and retail/service commercial businesses, light industrial uses, creative studios, retail campuses, and entertainment and restaurant uses that attract local residents and visitors. The proposed Land Use Plan amendments would direct that the *SoBECA Urban Plan* be updated to allow additional residential opportunities. Residential development projects could be built at a density of 40 dwelling units per acre, with a residential capacity of 450 units overall. Permitted development approaches would be mixed-use development that combines residential and commercial uses, as well as stand-alone uses. This designation would emphasize commercial uses and would aim to expand the established innovative, eclectic, and unique uses that demonstrate the

importance of homegrown and incubator-type businesses to the local economy. The integration of innovative public spaces and "hangout" areas for special events would be highly encouraged. The new designations' maximum building floor-area ratio of 1.25, and maximum height of four stories or 60 feet, would be consistent with the existing overlay.

#### Segerstrom Home Ranch

As described above, the updated Land Use Plan would revise the *North Costa Mesa Specific Plan* development standards for the 43.57-acre Segerstrom Home Ranch sub-area, located south of Coast Drive and north of I-405 (Figure 3.0-11, *Segerstrom Home Ranch Focus Area*). With an increase in the maximum FAR, the Segerstrom Home Ranch site could accommodate up to 1.2 million square feet of office uses.

#### Sakioka Lot 2

The updated Land Use Plan would revise the *North Costa Mesa Specific Plan* development standards for the 33-acre Sakioka site (Lot 2) sub-area, which is located south of Sunflower Avenue, west of Main Street, and north of I-405 (Figure 3.0-12, *Sakioka Focus Area*). On the Sakioka site, residential projects at up to 80 dwelling units per acre would be allowed, but existing residential capacity of 660 units would remain unchanged.

IMPACT 4.10.A The General Plan Amendments would not result in a division of an established community.

Division of a neighborhood may occur with the construction of a new freeway, railway, or other large transportation project that may run through an established community. Impacts associated within the division of an established community include a loss of community identity, disruption or loss of connectivity, and a degradation of the historic character of an area.

The General Plan Amendments represent a policy-level project designed to direct long-term growth within the planning area. The City has many long-established residential neighborhoods as well as newer developments. The proposed amended Land Use Plan would retain the City's primarily residential character since the land use changes only affect about four percent of land in the City. The land use changes would not divide an established community because they do not authorize any specific construction project, development plan, or other land-altering activity. Neither would they indirectly lead to the division of an established community, as the changes would not trigger the development of major new infrastructure (such as major roads or freeways, power easements or water conveyance facilities) which could physically divide existing developed areas of the City.

The proposed land use changes support maintenance of established neighborhoods through the following goals, objectives, and policies in the Draft Land Use Element.

# GOAL LU-1: A BALANCED COMMUNITY WITH A MIX OF LAND USES TO MEET RESIDENTS AND BUSINESS NEEDS

- Objective LU-1A. Establish and maintain a balance of land uses throughout the community to preserve the residential character of the City at a level no greater than can be supported by the infrastructure.
- **Policy LU-1A.2** Balance economic gains from new development while preserving the character and densities of residential neighborhoods.

Policy LU-1A.3 Strongly encourage the development of residential uses and owner-occupied housing (single-family detached residences, condominiums, townhouses) where feasible to improve the balance between rental and ownership housing opportunities.

#### GOAL LU-2: PRESERVE AND PROTECT RESIDENTIAL NEIGHBORHOODS

Objective LU-2B. Promote land use patterns and development which contribute to community and neighborhood identity.

Policy LU-2B.6 Encourage increased private market investment in declining or deteriorating neighborhoods.

Policy LU-2B.9 Require appropriate building setbacks, structure orientation, and the placement of windows to consider the privacy of adjacent residential structures within the same project and on adjacent properties.

Policy LU-3C.7 Promote development/design flexibility that encourages older or poorly maintained high-density residential uses to be rehabilitated.

Policy LU-3C.8 Ensure that new development reflects existing design standards, qualities, and features that are in context with nearby development and surrounding residential neighborhoods.

Proposed policies within the General Plan Amendments would protect established neighborhoods, limit building heights, and be supported by in-place transportation systems. These policies ensure that the project would not result in the division of an established community. Impact would be less than significant.

IMPACT 4.10.B The General Plan Amendments would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project, as discussed in other sections of this EIR.

The project involves the update of all General Plan elements, except the Housing Element. None of the changes affect plans, policies, or regulations of other agencies that have jurisdiction within the planning area. In fact, some of the changes in General Plan elements are proposed to reflect and address new policies and regulations of other agencies, such as those relating to flooding and high-fire hazard areas.

With regard to review authority of the Orange County Airport Land Use Commission (ALUC), the proposed project does not involve any proposals that would allow for increased building heights or high-occupancy buildings within any of the airport-influence zones of John Wayne/Orange County Airport. As required by State Public Utilities Code, the City will provide for formal consultation with the ALUC regarding the proposed General Plan Amendments and over time, any land use applications within the affected review areas.

Orange County has jurisdiction over land uses within the sphere of influence, but no changes are proposed on properties within the sphere of influence. The planning area is subject to a variety of federal, State, and locally adopted plans designed to mitigate environmental impacts or to preserve important resources. Plans and policies related to specific resource issues are addressed in those specific sections of this EIR.

No conflicts between the specific resources and a policy or regulation of another agency would occur as a result of the proposed project. Impacts would be less than significant.



No impact related to conflicts between the proposed General Plan Amendment and existing Habitat Conservation Plans would occur.

None of the land use changes proposed in the General Plan Amendments would conflict with the County of Orange NCCP/HCP since no land use changes are proposed in affected areas. The City of Cost Mesa is not a participant to the NCCP/HCP, and none of the proposed reserve lands occur within the City's jurisdiction. Reserves are proposed in Talbert Regional Park, which is under the jurisdiction of the County of Orange.

## Mitigation Measures

No significant impacts are anticipated; therefore, mitigation measures are not required.

## References

City of Costa Mesa, 2015. General Plan Draft Historical and Cultural Resources Element.

Orange County Local Agency Formation Commission. 2015. General information from website: https://www.oclafco.org.

Orange County Local Agency Formation Commission. 2010. 2010 Islands Strategy Handbook, Islands Map.

Southern California Association of Government, 2015. General information from website: https://www.scag.ca.gov/about.

Southern California Association of Government, 2012. *2012-2035 Regional Transportation Plan: Sustainable Communities Strategy,* April 2012.

This section evaluates the potential effects on mineral resources associated with long-term implementation of the amended General Plan Elements. This section is primarily based on the California Department of Conservation Open File Report 93-05 entitled *Mineral Land Classification of the Ortega Rock Quarry Property: Orange County, California* and Special Report 143, Part III entitled *Mineral Land Classification of the Greater Orange County-Temescal Valley area.* No comments related to mineral resources were submitted during circulation of the Notice of Preparation.

## Existing Conditions

Minerals are defined as a naturally occurring, inorganic, homogenous solids with a definite chemical composition and an ordered atomic arrangement. Generally, a mineral is a single or compound of elements and serves as the building blocks for rocks. "Ore" is the naturally occurring material that can be extracted from minerals that have economic value. Providing and encouraging access to mineral resources is an important consideration for the City of Costa Mesa as well as the State of California.

### The Orange County Basin

The Orange County Basin is located in north and central Orange County within the lower Santa Ana River watershed. The Orange County Basin is bounded by the Coyote and Chino Hills on the north, the Santa Ana Mountains on the northeast, the San Joaquin Hills on the south, and the Pacific Ocean and the Newport-Inglewood fault zone on the southwest. The Orange County Basin is separated from the Central Basin along Coyote Creek and the County line, although there is no physical barrier between the two basins. The Newport-Inglewood fault zone acts as a complete barrier to flow from the ocean along most of its length in Orange County except at ancient river-crossing gaps, most notably the Alamitos Gap along the Los Angeles County line and the Talbert Gap in Huntington Beach and Costa Mesa. At these two locations, permeable river deposits cross the fault barrier, providing the opportunity for seawater to flow into the Orange County Basin (MWDSC 2007). The hydrogeology of the Orange County Basin is characterized by a deep structural alluvial basin containing a thick accumulation of interbedded sand, silt, and clay.

#### Oil

Portions of Costa Mesa overlay the West Newport Oil Field, which is south of 17<sup>th</sup> Street between Pomona and Westminster Avenues, and the West Newport Oil Field, which is west of Whittier Avenue, south of Victoria Street. Currently, the only active oil wells in Costa Mesa operate in the West Newport Field west of Whittier Avenue between 17<sup>th</sup> and 19<sup>th</sup> Streets. These wells produce a relatively low-quality crude oil and remained in operation through the mid-1990s (DC DOGGR 2015).

#### **Peat Deposits**

Peat deposits are located adjacent to the Santa Ana River and in the vicinity of Upper Newport Bay (see previous Figure 4.6-2, Soil Types). The size of the deposits in Costa Mesa is not sufficient to justify extraction. However, peat does provide an unstable base for construction and must be removed prior to development.

#### **Mineral Resources**

Areas subject to California mineral land classification studies are divided by the State Geologist into various Mineral Resource Zone (MRZ) categories that reflect varying degrees of mineral potential. The MRZ nomenclature and criteria adopted by the California State Mining and Geology Board (1983) are graphically portrayed on what is referred to as the California Mineral Land Classification Diagram. The classification map for Orange County is shown on Figure 4.11-1 (Mineral Resources in Orange County).

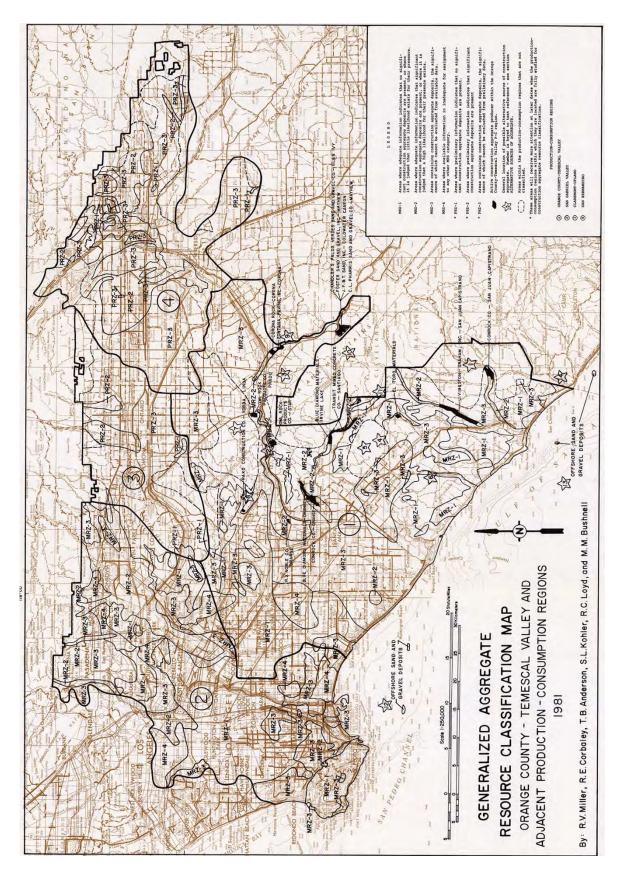


Figure 4.11-1 Mineral Resources in Orange County

- MRZ-1: Areas of No Mineral Resource Significance
- MRZ-2: Areas of Identified Mineral Resource Significance
- MRZ-3: Areas of Undetermined Mineral Resource Significance
- MRZ-4: Areas of Unknown Mineral Resource Significance

The distinction between the MRZ-1 and MRZ-4 categories is important for land use considerations. It must be emphasized the MRZ-4 classification does not imply little likelihood for the presence of mineral resources but rather a lack of knowledge regarding mineral occurrence. Further exploration work could well result in the reclassification of land in MRZ-4 areas to MRZ-3 or MRZ-2 categories. Most of the Costa Mesa planning area is classified as MRZ-3, with smaller areas of MRZ-1 land located alongside SR-55 (see Figure 4.11-1).

## Planning and Regulatory Framework

## **Surface Mining and Reclamation Act**

The Surface Mining and Reclamation Act of 1975 (SMARA) was enacted by the California legislature to promote the conservation of the State's mineral resources and to ensure adequate reclamation of mined lands. Among other provisions, SMARA requires the State Geologist to classify land in California into MRZs according to the known or inferred mineral potential of the land. The process is based solely on geology, without regard to existing land use or land ownership. Upon completion of each study, the State Geologist submits the mineral land classification report to the State Mining and Geology Board, which transmits the information to appropriate local governments that maintain jurisdictional authority in mining, reclamation, and related land-use activities. Local governments are required to incorporate the report and maps into their general plans and consider the information when making land use decisions.

SMARA addresses the need for a continuing supply of mineral resources and to prevent or minimize the negative impacts of surface mining to public health, property and the environment. The Act applies to anyone—including government agencies—engaged in surface mining operations in California, including federally managed lands that disturb more than one acre or remove more than 1,000 cubic yards of material cumulatively from one site. Regulated mining activities include prospecting and exploratory activities, dredging and quarrying, streambed skimming, borrow pitting, and the stockpiling of mined materials.

The California Department of Conservation, Division of Mines and Geology (DMG) "Mineral Land Classification Project" continues to publish mineral resource maps which have proved to be of value in land use planning and mineral conservation. This is an ongoing process with updates taking place approximately every 10 years. DMG is also in the process of identifying lands throughout the county with the potential for mineral resource recovery and will be used to identify new mineral resource areas to help ensure their preservation.

#### **Reclamation Plans**

All reclamation plans are required to comply with the provisions of SMARA (Section 2772 and Section 2773) and State regulations (CCR Section 3500-3505). Reclamation plans approved after January 15, 1993, reclamation plans for proposed new mining operations, and any substantial amendments to previously approved reclamation plans are also required to comply with the requirements for reclamation performance standards (CCR Section 3700-3713). Before a mining project is approved, a reclamation plan must be prepared and approved by the City, and must include specific information and documents identified in the State regulations.

The State requires that a mining report be submitted annually by each mine operator. The report must include information as to the amount of land disturbed during the previous year, acreage reclaimed during the previous year, and any amendments to the mine's reclamation plan. This process helps cities, counties, and the State to track mining

operations. Because no mining operations are located within the jurisdiction of the City, the City does not inspect, track, or report on active mines pursuant to SMARA.

## **Orange County General Plan**

The Orange County General Plan Natural Resources Component includes goals and policies to protect mineral resources. The policies support identification of valuable mineral resources and their preservation or extraction with appropriate plans for reclamation. Goal 2 of the Natural Resources Component supports the promotion of wise management of mineral resources. Policy 3 supports the efficient use of all mineral lands consistent with sound resources management practices, and Policy 4 supports opportunities for the extraction of minerals in the County and to protect the environment during and after these mineral are being extracted.

## Costa Mesa General Plan Safety Element

The Costa Mesa General Plan Safety Element identifies portions of the City that overlay the West Newport Oil Field, which is south of 17<sup>th</sup> Street between Pomona and Westminster Avenues. Currently, the only active oil wells in Costa Mesa operate west of Whittier Avenue between 17<sup>th</sup> and 19<sup>th</sup> Streets (CM 2002).

#### Costa Mesa Municipal Code

Pursuant to the requirements of SMARA, Chapter XIV Section 13-288 (Oil Drilling) of the City's Municipal Code addresses the permitting, planning, and reclamation of oil drilling and extraction operations (CM 2015).

## Thresholds of Significance

Implementation of the General Plan Amendments would have significant impacts if:

- A. The availability of a known mineral resource that would be of value to the region and the residents of the State are lost.
- B. The availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan is lost.

## Environmental Impacts



Implementation of the General Plan Amendments would result in a less than significant loss of known mineral resources of value to the region and the State.

Development directed by the goals and policies of the General Plan could produce effects on known mineral resources.

As described above in the Environmental Setting section, mineral resources present in the planning area are oil, peat, and aggregate. According to the Department of Conservation Division of Oil, Gas, and Thermal Resources, there are 15 active oil wells in the planning area; however, none are in areas subject to land use changes by the proposed amendments. The Newport West Oil Field is located entirely outside of the planning area. Peat is restricted to areas adjacent to the Santa Ana River, and no General Plan land use changes are proposed in the areas where the peat is located. With respect to aggregate resources, areas subject to land use changes are mostly located on land classified as having "undetermined mineral resource significance." Since most of the areas proposed for land use changes by the General Plan Amendments support existing development, aggregate resources, should they be present, would not be subject to mining in the near future and would remain intact. Furthermore, aggregate mining is not typically done on small parcels within existing urban areas due to the lack of appropriate zoning for such a use, as well as the

prohibitive cost and nuisance associated with such operations. As such, lands of undetermined significance would not likely be considered for mining in the foreseeable future. For these reasons, impacts on mineral resources are considered less than significant.



No impact to locally important mineral resources would occur as a result of the implementation of the General Plan Amendments.

The existing General Plan does not identify any locally important mineral resources. No other City planning documents identify any locally important mineral resources. No impacts to locally important mineral resources could occur as a result of the implementation of the General Plan Amendments.

## Mitigation Measures

No mitigation is required.

# References

City of Costa Mesa. 2015. Municipal Code. Chapter XIV, Section 13-288.

City of Costa Mesa. 2002. General Plan. Safety Element.

Department of Conservation, Division of Oil, Gas, and Geothermal Resources. 2015. Well Status, July 2015.

Metropolitan Water District of Southern California. 2007. Chapter IV: Groundwater Basin Reports – Orange County Basin. September 2007.

This section analyzes potential noise impacts that could result from implementation of the proposed General Plan Amendment. The analysis herein summarizes the findings of the February 2016 Noise Study prepared on behalf of the City by MIG, Inc. (MIG 2016). The Noise Study is attached to this EIR as Appendix D. Discussions related to groundborne vibration are based on information provided in Caltrans' *Transportation and Construction Induced Vibration Manual and Technical Advisory 04-01-R0201* (Transportation Related Earthborne Vibrations) (Jones and Stokes 2004). Several comments related to noise were submitted in response to the circulation of the Notice of Preparation or at the EIR Scoping Meeting. One was directed at general noise increases, while most others were directed at potential noise related to multi-family housing replacing less dense land uses.

#### Basics of Noise

#### **Defining Noise**

"Sound" is a vibratory disturbance created by a moving or vibrating source and is capable of being detected. "Noise" is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance and—in the extreme—hearing impairment.

#### **Production of Sound**

Sound has three properties: amplitude and amplitude variation of the acoustical wave (loudness), frequency (pitch), and duration of the noise. Despite the ability to measure sound, human perceptibility is subjective, and the physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

#### Measuring Sound

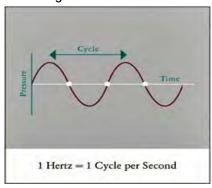
Sound pressure levels are described in logarithmic units of ratios of sound pressures to a reference pressure, squared. These units are called bels. To provide a finer description of sound, a bel is subdivided into 10 decibels, abbreviated dB. Since decibels are logarithmic units, sound pressure levels cannot be added or subtracted by ordinary arithmetic means. For example, if one automobile produces a sound pressure level of 70dB when it passes an observer, two cars passing simultaneously would not produce 140 dB. In fact, they would combine to produce 73 dB. This same principle can be applied to other traffic quantities as well. In other words, doubling the traffic volume on a street or the speed of the traffic will increase the traffic noise level by three dB. Conversely, halving the traffic volume or speed will reduce the traffic noise level by three dB change in sound is the beginning at which humans generally notice a barely perceptible change in sound.

Sound pressure level alone is not a reliable indicator of loudness. The frequency or pitch of a sound also has a substantial effect on how humans will respond. While the intensity of the sound is a purely physical quantity, the loudness or human response depends on the characteristics of the human ear. Human hearing is limited not only to the range of audible frequencies but also in the way it perceives the sound pressure level in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 Hertz (Hz) and 5,000 Hz, and perceives both higher and lower frequency sounds of the same magnitude with less intensity. Hertz is a unit of frequency that defines any periodic event. In the case of sound pressure, a Hertz defines one cycle of a sound wave per second (see Figure 4.12-1, Hertz Diagram). To approximate the frequency

4.12 Noise

response of the human ear, a series of sound pressure level adjustments is usually applied to the sound measured by a sound level meter.

Figure 4.12-1 Hertz Diagram



The adjustments, or weighting network, are frequency dependent. Of all the various scales available for measuring noise, the A-weighted sound pressure level (identified as dBA) is the scale of measurement that is most useful in community noise measurement. The A-scale approximates the frequency response of the average young ear when listening to most ordinary everyday sounds. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. A range of noise levels associated with common indoor and outdoor activities are shown in Figure 4.12-2 (Activity-Based Noise Levels).

Figure 4.12-2 Activity-Based Noise Levels

Common Outdoor Activities	Common Indoor Activities	A - Weighted Sound Level dBA	Subjective Loudness	Effects of Noise
Threshold of Pain		140		
Near Jet Engine		130	(material)	
		120	Switcher	Home
Jet Fly-Over at 1000 ft	Rock Band	110		
Loud Auto Horn		100		
Gas Lawn Mower at 3 ft	T)	90	Very Many	
Diesel Truck at 50 ft, at 50 mph	Food Blender at 3 ft	80		Speech Interference
Noisy Urban Area, Daytime	Vacuum Cleaner at 10 ft	70	Loud	
Heavy Traffic at 300 ft	Normal Speech at 3 ft	60		
Quiet Urban Daytime	Large Business Office	50	and the second	
Quiet Urban Nighttime	Theater, Large Conference Room (Background)	40	Moderate	Sleep Disturbance
Quiet Suburban Nighttime	Library	30	Tank.	No Effect
Quiet Rural Nighttime	Bedroom at Night, Concert Hall (Background)	20	Faint	
	Broadcast/Recording Studio	10		
Lowest Threshold of Human Hearing	Lowest Threshold of Human Hearing	ō	Very Faint	

#### Standards for Noise Equivalent

Noise consists of pitch, loudness, and duration; therefore, a variety of methods for measuring noise have been developed. According to the California General Plan Guidelines for Noise Elements, the following are common metrics for measuring noise (CGOPR 2003):

**Leq (Equivalent Energy Noise Level):** The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over given sample periods. Leq is typically computed over 1-, 8-, and 24-hour sample periods.

**CNEL (Community Noise Equivalent Level):** The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 PM to 10:00 PM and after addition of ten decibels to sound levels in the night from 10:00 PM to 7:00 AM.

Ldn (Day-Night Average Level): The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of ten decibels to sound levels in the night after 10:00 PM and before 7:00 AM.

CNEL and Ldn are utilized for describing ambient noise levels because they account for all noise sources over an extended period of time and account for the heightened sensitivity of people to noise during the night. Leq is better utilized for describing specific and consistent sources because of the shorter reference period.

Federal and State agencies have established noise and land use compatibility guidelines that use averaging approaches to noise measurement. The State Department of Aeronautics and the California Commission on Housing and Community Development have adopted the community noise equivalent level (CNEL).

#### Sensitive Receptors

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, and residential uses make up the majority of these areas. Sensitive receptors are located throughout the city.

## Types of Noise

#### Roadway Noise

The level of traffic noise depends on four key factors: 1) traffic volumes, 2) the speed of traffic, 3) the type or "mix" of vehicles using a particular roadway, and 4) pavement conditions. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. Traffic therefore represents a primary contributor to the ambient noise levels in a community and also results in periodic noise level increases based on daily traffic fluctuations.

#### Airport Noise

Many different sources in and around an airport produce noise. Air traffic can produce high intensity noise and affect many people near airports. The extent of the noise is a product of the types of aircraft flown, the number of flights, and the flight paths. Similar to road traffic, larger and heavier aircraft can produce more noise. However, some lighter, smaller aircraft are exceptions to this rule. Most of the noise generated from the aircraft engines typically occur from the high velocity exhaust gases and the air flow in the fan system (Noise Quest 2015). Another aspect of an aircraft that generates noise is the airframe. Many people may not be aware of the fact that parts of the airframe—wings, flaps, and landing gear—also produce a lot of noise. During landing, most of the noise heard from the ground comes from these components. This noise is characterized by sharp, low frequency peaks (Noise Quest 2015).

# Vibration and Groundborne Noise

Vibration is the periodic movement of mass over time. It is described in terms of frequency and amplitude. Unlike sound, there is no standard way of measuring and reporting amplitude. Vibration is described in units of velocity (inches per second [in/sec]), and is discussed in dB units in order to compress the range of numbers required to describe vibration. Vibration impacts to buildings are generally discussed in terms of peak particle velocity (PPV), which represents the maximum instantaneous positive or negative peak of a vibration signal and is most appropriate for evaluating the potential for building damage (FTA 2006).

In general, earthborne vibrations associated with transportation and construction activities attenuate rapidly with distance from the source. Caltrans has taken vibration measurements throughout California and provides data in the *Transportation Related Earthborne Vibrations* Technical Advisory (TAV-02-01-R9601) (Caltrans 2001). Vibration of trucks is characterized by peaks considerably higher than those generated by automobiles. These peaks last often a fraction of a second and drop-off quickly with distance. In general, more trucks will show up as more peaks, not necessarily higher peaks. Caltrans' truck traffic vibration data suggest that at distances greater than 130 feet from the road, the vibration levels are below the threshold of perception.

# Temporary, Periodic and Ambient Noise Levels

Noise can be produced from different sources and for different time periods, resulting in varying noise levels over time. Ambient noise levels, for the purpose of this analysis, are developed using 24-hour average noise level measurements taken throughout the planning area resulting in a general description of the noise environment. Periodic noise levels are characterized by regular increases in noise levels due to reoccurring activities such as the passing of railcars or periods just before and after peak-hour traffic along roadways. Temporary noise levels result from one-time activities that result in increased noise levels, such as construction activities or special events.

# **Existing Conditions**

Costa Mesa's noise environment is dominated by vehicular traffic and aircraft operations at John Wayne Airport. Field noise measurements, taken in 2015 at various locations in Costa Mesa, establish ambient noise levels primarily in the vicinity of sensitive uses (i.e., schools, residences, churches, hospitals, etc.) (MIG 2016). Ambient noise levels are a composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Table 4.12-1
Ambient Noise Measurements

Site	Date	Time	Leq	Lmax	Lmin	Location
1	8/4/15	7:12 AM	67.8	84.5	57.8	Northeast corner of Anton & Avenue of the Arts
2	8/4/15	7:45 AM	77.6	102.1	55.3	Southeast corner of Bear & Paularino
3	8/4/15	8:12 AM	71.5	88.5	57.6	Northeast corner of Harbor & Adams
4	8/4/15	8:37 AM	70.2	84.3	56.2	Northwest corner of Fairview & Fair
5	8/4/15	9:12 AM	66.2	82.3	55.1	Southwest corner of South Coast & Susan
6	8/5/15	11:07 PM	68.4	80.7	45.5	Northwest corner of Mesa Verde & Adams
7	8/5/15	11:35 PM	52.5	65.2	39.1	East corner of Santa Ana & 22nd
8	8/6/15	7:02 AM	67.8	84.9	46.4	North corner of Del Mar & Orange
9	8/6/15	7:33 AM	61.5	75.1	45.5	East corner of Santa Ana & Cabrillo
10	8/6/15	7:55 AM	73.1	86.9	57.1	Northeast corner of Harbor & 19th
11	8/6/15	8:21 AM	73.8	89.4	60.5	Northeast corner of Harbor & Victoria

Table 4.12-1
Ambient Noise Measurements

12	8/6/15	8:47 AM	69.4	82.5	54.3	Northeast corner of 17th & Pomona
13	8/6/15	9:11 AM	63.1	82.0	42.3	Northeast corner of 17th & Whittier
14	8/6/15	9:43 AM	74.1	93.9	53.9	Northeast corner of Placentia & 20th
15	8/6/15	10:24 AM	69.3	85.5	56.2	South corner of Red Hill & Paularino
Source: MIG 2016						

#### **Traffic Noise**

Traffic noise—including that from automobiles, trucks, and other motor vehicles—is the most pervasive source of noise in Costa Mesa. The Costa Mesa roadway network consists of the I-405, State Highways 73 and 55, regional arterials, local public roads, and private roads.

Traffic noise levels can be reliably predicted using formulas that take into account traffic volume, speed, and percentage of trucks. Existing noise contours were calculated for all the City's primary and major arterials as well as the three freeways (I-405, SR-55, SR-73) that traverse the City. In addition, noise contours were calculated for a number of secondary and commuter streets; refer to Appendix D

# Airplane and Airport Noise

John Wayne Airport (JWA), owned and operated by the County of Orange, is the only commercial service airport in Orange County. It is located immediately east of Costa Mesa, between I-405 and SR-73. The service area includes more than three million people within the 34 cities and unincorporated areas of Orange County. In 2014, more than nine million passengers flew into or out of John Wayne Airport (OC 2015).

John Wayne Airport has one of the most stringent aircraft access and noise monitoring programs in the United States and the world. Commercial air carrier operations at the airport are regulated by the Phase 2 Commercial Airline Access Plan and Regulation (Access Plan). The Access Plan places restrictions on operational capacity, hours of operations, and noise levels. General aviation operations are permitted 24 hours daily subject to compliance with the daytime noise limits and the more restrictive curfew noise limits, as documented in the General Aviation Noise Ordinance (GANO) (OC 2015).

John Wayne Airport abuts industrial and commercial properties at the northeast corner of Costa Mesa. A portion of Costa Mesa lies within the 65 dBA CNEL contour of John Wayne Airport. Development in the northeastern portion of the city are exposed to noise levels up to 65 dBA according to the Airport Environs Land Use Plan (AELUP) for John Wayne Airport. In addition, there are approximately 100 dwelling units within the City's sphere of influence, as well as the industrial operations located between State Route 73 (SR-73) and Interstate 405 (I-405) with general commercial and outdoor recreation uses located immediately south of SR-73.

# Non-Transportation Noise Sources

Non-transportation-related noise generators are commonly called "stationary," "fixed," "area," or "point" sources of noise. Industrial processing, mechanical equipment, pumping stations, and heating, ventilating, and air conditioning (HVAC) equipment are examples of fixed-location, non-transportation noise sources within the city. Some non-transportation sources are not stationary but are typically assessed as point or area sources due to the limited area in which they operate, such as truck deliveries.

Industrial and commercial land uses produce noise of various types, intensities, and frequencies depending on the nature of the business. Industrial uses often produce additional noise due to the use of heavy

machinery. Commercial uses such as large retail complexes can raise localized noise levels due to high volumes of traffic and increased outdoor activities (such as special events). Both industrial and commercial uses may include loading and unloading of trucks in loading docks and generally increase truck traffic in the area. Industrial uses in Costa Mesa are concentrated adjacent to John Wayne Airport, in the southwest corner (known as Westside area), and north of I-405 adjacent to the Santa Ana River.

Intermittent or temporary neighborhood noise from amplified music, public address systems, barking dogs, landscape maintenance, and stand-by power generators can be disturbing to residents but are difficult to attenuate and control.

Major sources of non-transportation noise in Costa Mesa include the Pacific Amphitheater and the Orange County Event Center. Several noise sources presently exist within the Orange County Events Center property, including the Orange County Fair. Typical noise associated with the OC Fair include public address systems, screams and the sound of rides moving along their tracks, animal noises, human activity throughout the fairgrounds, and setup and breakdown of booths and rides. Approximately 1.3 million people attend the Fair annually. The Orange County Fair operates for four weeks annually during the summer months. Noise sources during the fair events include a public address system, carnival rides, and several sound reinforcement systems used for concerts and carnival rides. Other stationary noise sources within the Orange County Events Center include the weekly Orange County Market Place, Farmers Market, Centennial Farm, and Food Truck Fare Wednesday, as well as annual events such as OC Home and Garden Show, and concerts in the Pacific Amphitheater.

# Planning and Regulatory Framework

#### Federal

#### Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In response, the EPA published information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels of Environmental Noise). The Levels of Environmental Noise recommended that the Ldn should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In addition, the Levels of Environmental Noise identified five dBA as an "adequate margin of safety" for a noise level increase relative to a baseline noise exposure level of 55 dBA Ldn (i.e., there would not be a noticeable increase in adverse community reaction with an increase of five dBA or less from this baseline level). The EPA did not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as advisory exposure levels below which there would be no risk to a community from any health or welfare effect of noise.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more localized levels of government. Consequently, in 1982 responsibilities for

regulating noise control policies were transferred to State and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated federal agencies, allowing more individualized control for specific issues by designated federal, State, and local government agencies.

## Federal Transit Administration

The Federal Transit Administration (FTA) has developed methodology and significance criteria to evaluate incremental noise impacts from surface transportation modes (i.e., on road motor vehicles and trains) as presented in Transit Noise Impact and Vibration Assessment (FTA Guidelines). These incremental noise impact criteria are based on EPA findings and subsequent studies of annoyance in communities affected by transportation noise. The FTA extended the EPA's five dBA incremental impact criterion to higher ambient levels. As baseline ambient levels increase, smaller and smaller increments are allowed to limit expected increases in community annoyance. For example, in residential areas with a baseline ambient noise level of 50 dBA CNEL, a less-than-five dBA increase in noise levels would produce a minimal increase in community annoyance levels, while at 70 dBA CNEL, only one dBA increase could be accommodated before a significant annoyance increase would occur.

The FTA provides guidelines for maximum-acceptable vibration criteria for different types of land uses. Groundborne vibration and noise levels associated with various types of construction equipment and activities are summarized in the Reference Vibration Source Amplitudes for Construction Equipment table in the Noise Study (Appendix D).

# Federal Highway Administration (FHWA) Guidance

In response to the problems associated with highway traffic noise, the United States Code of Federal Regulations Part 772 (23 CFR 772), "Procedures for Abatement of Highway Traffic Noise and Construction Noise," establishes standards for abatement of highway traffic noise. The purpose of this document is to provide Federal Highway Administration (FHWA) guidance for the applying 23 CFR 772 in the analysis and abatement of highway traffic noise. Following this guidance is strictly voluntary. It is based on lessons learned and best practices and does not constitute the establishment of an FHWA standard. Not all studies are the same; therefore, this guidance is intended to be non-prescriptive, and its application is flexible and scalable to the type and complexity of the analysis to be undertaken. FHWA guidance on highway noise addresses noise compatible planning, source control, and highway traffic noise abatement. The latter addresses traffic noise on interstate highways as well as construction related to interstate highway development/improvements (FHWA 2011).

#### Federal Aviation Administration (FAA) Standards

Enforced by the FAA, Title 14, Part 150 prescribes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses which are normally compatible with various levels of exposure to noise by individuals. It provides technical assistance to airport operators—in conjunction with other local, State, and federal authorities—to prepare and execute appropriate noise compatibility planning and implementation programs. The FAA establishes a 65 dBA CNEL as the noise standard associated with aircraft noise.

#### State of California

#### California Noise Control Act of 1973

Sections 46000-46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, find that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise.

# California Noise Insulation Standards (CCR Title 24)

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for multi-family residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise (attributable to outside noise sources). The regulations also specify that acoustical studies must be prepared whenever a residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source or sources create an exterior CNEL (or  $L_{dn}$ ) of 60 dBA or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or  $L_{dn}$ ) of 45 dBA or below. (California's Title 24 Noise Standards, Chap. 2-35)

# State of California Department of Health Services

The California Department of Health Services establishes noise criteria for various land uses, Noise/Land Use Compatibility Criteria. The City of Costa Mesa has incorporated a modified version of the State standards in the General Plan Noise Element.

# State of California Department of Transportation (Caltrans) 23 CFR 772

Title 23, Part 772 of the Code of Federal Regulations (CFR), titled "Procedures for Abatement of Highway Traffic Noise and Construction Noise," outlines procedures for noise studies that are required for approval of federal-aid highway projects. The FHWA requires that State highway agencies prepare State-specific policies and procedures for applying 23 CFR 772. The purpose of 23 CFR 772 is to provide procedures to help protect public health and welfare, supply noise abatement criteria, and establish requirements for information to be given to local officials for use in the planning and design of highways approved pursuant to 23 CFR 772.1. As such, 23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal-aid highway projects. According to 23 CFR 772.3, all highway projects that are developed in conformance with this regulation are deemed to be in conformance with the FHWA noise standards.

#### Local

# <u>City of Costa Mesa Municipal Code -- Noise Control Ordinance</u>

The following standards from of the City of Costa Mesa Municipal Code Noise Control Ordinance apply to the proposed project.

**13-279 – Construction Noise**. Construction equipment, vehicles, or work between the following approved hours, is allowed provided that all required permits for such construction, repair, or remodeling have been obtained from the appropriate City departments: 7:00 A.M. through 7:00 P.M. Monday through Friday, 9:00 A.M. through 6:00 P.M. Saturday. Construction activities on Sundays and holidays are prohibited.

**13-280 – Noise Standards**. The following noise standards, unless otherwise specifically indicated, shall apply to all residential property within the City:

#### RESIDENTIAL EXTERIOR NOISE STANDARDS

Noise Level	Time Period
55 dB(A)	7:00 A.M. through 11:00 P.M.
50 dB(A)	11:00 P.M. through 7:00 A.M.

#### RESIDENTIAL INTERIOR NOISE STANDARDS

Noise Level	Time Period
55 dB(A)	7:00 A.M. through 11:00 P.M.
45 dB(A)	11:00 P.M. through 7:00 A.M.

13.283 – Loud, Unnecessary Noise: It shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary and unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area, regardless of whether the noise level exceeds the standards specified in Section 13-280. The standard which may be considered in determining whether a violation of the provisions of this section exists may include, but not be limited to, the following:

- a. The level of the noise:
- b. Whether the nature of the noise is usual or unusual;
- c. Whether the origin of the noise is natural or unnatural;
- d. The level and intensity of the background noise, if any;
- e. The proximity of the noise to residential sleeping facilities;
- f. The nature and zoning of the area within which the noise emanates;
- g. The density of the inhabitation of the area within which the noise emanates;
- h. The time of the day and night the noise occurs:
- i. The duration of the noise;
- j. Whether the noise is recurrent, intermittent, or constant; or
- k. Whether the noise is produced by a commercial or noncommercial activity.

# Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project could result in potentially significant impacts related to noise if it results in:

- A. Exposure of persons or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- B. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- C. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- D. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

E. For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels.

F. For a project within a vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

# Environmental Impacts

IMPACT 4.12.A Exposure of persons to or generation of noise levels in excess of City standards would be less than significant with implementation of the proposed General Plan Amendment policies.

As described in the following paragraphs, the noise environment in Costa Mesa is not expected to change as a result of the implementation of the General Plan Amendments. Future development under the General Plan Amendments could result in the exposure to persons to or generate noise levels in excess of City standards. In particular sources of noise that could expose persons to noise in excess of City standards are the John Wayne Airport, the OC Fair and Event Center, and traffic.

As described above under "Local" regulations, the City has specific exterior and interior noise standards to protect residents from above standard noise. In addition, the draft Noise Element includes policies that pertain to protecting new development from noise impacts through ensuring compatible use with surrounding areas, building types and materials, and setbacks. Refer to Goals and Objectives N-1 and N-2 below along with the corresponding policies that lead to the achievement of the goals and objectives.

# John Wayne Airport

The City of Costa Mesa does not contain any airports. However, the City is located immediately adjacent to John Wayne-Orange County (SNA) Airport to the southeast. According to the Airport Environs Land Use Plan (AELUP) for John Wayne Airport, existing uses within the northeastern portion of the city are exposed to noise levels up to 65 dBA. Exposed uses include approximately 100 dwelling units within the City's sphere of influence, industrial uses between State Route 73 (SR-73) and Interstate 405 (I-405), and general commercial and outdoor recreation uses immediately south of SR-73. Noise contours resulting from operations at John Wayne Airport are on file with the County of Orange Office of Noise Abatement and the Orange County Airport Land Use Commission (ALUC).

The 2008 AELUP adopted by the Airport Land Use Commission specifies acceptable uses proximate to the airport. These are defined as uses that will not subject people to adverse noise impacts. John Wayne Airport, primarily through the General Aviation Noise Ordinance (GANO), has on-going programs of noise reduction that include limits on the number of commercial airline flights, noise abatement arrival and departure procedures, admonishment of noisy operators (including private aircraft), curfew, and take-off weight limitations.

The Orange County Board of Supervisors approved a Master Plan for the airport in February 1985. Settlement of lawsuits concerning airport expansion was reached in December 1985 between the County, City of Newport Beach, and two community organizations. In 2003, the Settlement Agreement was amended which extended the agreement until 2015, allowed an increase in passengers served from 8.4 million annual passengers to 10.8 million annual passengers, allowed an increase in regular Class A flights to 85 average daily departures, and allowed facility improvements.

In 2014, the Board of Supervisors authorized an increase in operational capacity and extended the terms of the Settlement Agreement through December 31, 2030, with no change to curfew until December 31, 2035. Additionally, beginning on January 1, 2021, the approval allows a gradual increase in passenger count from 8.4 million average passengers to 11.8 million average passengers and 95 average daily departures. Further, on January 1, 2026, the number passengers would again be able to increase, up to 12.5 million average passengers, depending upon the actual service levels in the preceding five years. Despite the increase in air traffic from John Wayne Airport, the ultimate CNEL noise contours are less than the noise contour contained in the 2008 ALUC, due to updated technology creating quieter fleets of commercial aircrafts.

Further, the JWA has one of the most stringent aircraft access and noise monitoring programs in the United States and the world. The Airport's Access Plan places restrictions on operational capacity, hours of operations, and noise levels. General aviation operations are permitted 24 hours daily subject to compliance with the daytime noise limits and the more restrictive curfew noise limits, as documented in the General Aviation Noise Ordinance (GANO) (OC 2015). Noise from JWA would not cause City residents to be exposed to noise above existing standards.

# **Helicopter Services**

The City of Costa Mesa contracts with Huntington Beach for police helicopter services on a case-by-case basis. Depending on altitude and speed, noise levels generated by the craft under normal conditions range from 61 to 65 dBA.

As of 2015, four heliports were located in Costa Mesa at the following locations:

- Costa Mesa Police Department, 99 Fair Drive
- Former Los Angeles A Times building, 1375 West Sunflower Avenue
- South Coast Metro Center, 555 Anton Boulevard
- Tridair Helicopter, 3000 Airway Avenue

The AELUP for Heliports establishes regulations and restrictions for the siting of heliports/helipads. The purpose of the AELUP for Heliports is to protect the public from the adverse effects of aircraft noise by ensuring that heliports/helipads are sited in areas of compatible land use. The City regulates the siting of helipads through a Conditional Use Permit. The City requires an analysis to identify potential noise impacts and the City may regulate the hours of operation and arrival, departure/arrival routes, and type of helicopters that may use the heliport in order to minimize impacts to sensitive land uses. Heliports and helistops must comply with the all conditions of approval imposed or recommended by the FAA, ALUC, and by Caltrans/Division of Aeronautics.

#### The OC Fair and Event Center

The OC Fair and Event Center hosts the annual summer fair and the weekly Orange County Market Place, Farmers Market, Centennial Farm, and Food Truck Fare Wednesday, as well as annual events such as OC Home and Garden Show, Orange County Fair, and concerts at the Pacific Amphitheater.

In 1980, a modified stricter Noise Ordinance for fairground operations was established in an agreement between the 32nd District Agricultural Association and the City of Costa Mesa ("1980 Settlement Agreement"). Table 4.12-2 (Orange County Fairgrounds Modified Noise Ordinance) applies to the activities within the Orange County Fairgrounds, with the exception of the events at the Pacific Amphitheater. Ongoing compliance with the Orange County Fairground Modified Noise Ordinance will ensure that noise levels generated by activities at the OC Fairgrounds will remain within acceptable levels.

Table 4.12-2
Orange County Fairgrounds Modified Noise Ordinance

Grange County Fair grounds mounted Holos Cramanes					
	Noise Level Not to Be	Maximum Allowable Duration			
Land Use	Exceeded	of Exceedance			
	50 dBA	30 min/hour			
	55 dBA	15 min/hour			
Residential	60 dBA	5 min/hour			
	65 dBA	1 min/hour			
	70 dBA	Not for any period of time			
Noise Zone	Noise Level (CNEL)	Time Period			
1 and 2 Family Decidential	60 dBA	7:00 a.m. to 11:00 p.m.			
1 and 2 Family Residential	50 dBA	11:00 p.m. to 7:00 a.m.			
Multiple Dwelling	60 dBA	7:00 a.m. to 11:00 p.m.			
Residential, Public Space,	** *				
Commercial	55 dBA	11:00 p.m. to 7:00 a.m.			
Source: City of Costa Mesa Inter Office N	Memorandum, August 24, 2010				

Prior to 1990, noise levels generated by concert events at Pacific Amphitheater exceeded the Costa Mesa Noise Ordinance, impacting surrounding residential neighborhoods. In 1990, a permanent injunction ("1990 Order") was entered against the former operators of the Amphitheater and the order set the current noise level established in Table 4.12-3 (Pacific Amphitheater Court Order Current Noise Restriction). The order specifically stated that the City's Noise Ordinance does not apply to the Pacific Amphitheatre. The amphitheater closed in 1997, but reopened in 2003 and remains subject to the noise restrictions of the 1990 Order outlined in Table 4.12-3. Ongoing compliance with the 1990 Order will ensure that noise levels generated by the events held at the Pacific Amphitheater will remain within acceptable levels.

Table 4.12-3
Pacific Amphitheater Court Order Current Noise Restriction

Maximum Noise Level	Time Period	Days of the Week
55 dBA	7:00 AM – 10:30 PM	Sunday-Thursday
50 dBA	10:30 PM – 7:00 AM	Sunday-Thursday
55 dBA	7:00 AM – 11:00 PM	Friday-Saturday
50 dBA	11:00 PM – 7:00 AM.	Friday-Saturday

Noise levels at the OC Fairground and Event Center and Pacific Amphitheater will be monitored to ensure that legally binding noise levels are being met (see Policy N-1.H below). Ongoing compliance with the 1990 Order will ensure that noise levels generated by the events held at the Pacific Amphitheater will remain within acceptable levels. Additional information on OC Fair and Event Center noise is contained in Appendix D.

# **Future Noise Levels along Existing Roadway Segments**

Future population and employment growth within the planning area would result in increased traffic and the need for roadway and intersection improvements necessary to maintain desired levels of service. Increases in traffic could result in permanent increases in ambient noise levels, e.g., where a roadway segment is proposed to be expanded with additional travel lanes over the long-term to achieve level of service standards. Roadway noise could also increase on an existing roadway that will carry increasing traffic volumes. In either set of circumstances, roadway noise levels could increase to beyond the levels considered acceptable for the adjacent land uses as defined by the City of Costa Mesa Noise Ordinance or General Plan Noise Element.

As part of the Costa Mesa General Plan Amendment process, an inventory of the existing land uses in the city was compiled and future land uses associated with future development under existing land use conditions and proposed land use conditions was determined. Traffic noise levels at 100 feet from roadway segment centerlines were modeled utilizing the Federal Highway Administration (FHWA) Traffic Noise Model (TNM) Version 2.5 (see Appendix B for TNM Output Data). Distances to the 55, 60, 65, and 70 BA CNEL noise contours under 2035 proposed General Plan Buildout conditions were calculated and shown in Table 9 in Appendix D (Future 2035 CNEL Proposed General Plan Buildout) and Exhibit 4 in Appendix D (2035 Proposed General Plan Buildout Traffic Noise Contours). Traffic noise levels identified represent conservative potential noise exposure. In reality, noise levels may vary from those represented as the calculations do not assume natural or artificial shielding nor do they assume reflection from existing or proposed structures or topography. Intervening structures or other noise-attenuating obstacles between a roadway and a receptor may reduce roadway noise levels at the receptor.

Table 10 in Appendix D (Future 2035 CNEL Noise Level Increase) shows the noise increases due to future development facilitated by build out of the proposed General Plan Amendments compared to existing conditions. Noise levels at 100 feet from the centerline of roadway segments were calculated based on average daily traffic volumes provided by the project traffic study prepared by Stantec Consulting Services, Inc. A 3.0 dBA change in sound is the beginning at which humans generally notice a *barely perceptible* change in sound, a 5.0 dBA change is generally *readily perceptible*, and a 10.0 dBA increase is perceived by most people as a doubling of the existing noise level.

Based on the results of the model, implementation of the proposed General Plan Amendment would result in noise increases of 3.0 dB CNEL along Del Mar west of Santa Ana, where residential uses are located, and 3.1 dB CNEL along 16<sup>th</sup> west of Newport, where industrial uses are located. Therefore, residents along Del Mar west of Santa Ana and the industrial uses along 16<sup>th</sup> west of Newport and could be exposed to barely perceptible increases in noise.

The proposed General Plan Amendment would not authorize any specific construction. Potential increases in noise levels along existing and proposed roadways will be assessed in conjunction with the City's review of site-specific noise impact analyses. Implementation of the following proposed General Plan Goals, Objectives and Policies would ensure that impacts related to increases in traffic noise due to future development would be reduced to acceptable levels.

#### Goal N-1: NOISE HAZARDS AND CONDITIONS

It is the goal of the City of Costa Mesa to protect its citizens and property from injury, damage, or destruction from noise hazards and to work towards improved noise abatement.

<u>Objective N-1:</u> Control noise levels within the City for the protection of residential areas and other sensitive land uses from excessive and unhealthful noise.

- Policy N-1.A: Enforce the maximum acceptable exterior noise levels for residential areas which is 65 CNEL.
- Policy N-1.D: Ensure that appropriate site design measures are incorporated into residential developments, when required by an acoustical study, to obtain appropriate exterior and interior noise levels.
- Policy N-1.E: Apply the standards contained in Title 24 of the California Code of Regulations as applicable to the construction of all new dwelling units.

Policy N-1.H: Monitor the noise levels at OC Fair & Event Center and the Pacific

on the OC Fair and the Event Center and the Pacific Amphitheater.

#### Goal N-2: NOISE AND LAND USE COMPATIBILITY

Integrate the known impacts of excessive noise on aspects of land use planning and siting of residential and non-residential projects.

Objective N-2: Plan for the reduction in noise impacts on sensitive receptors and land uses.

Policy N-2.A: Require the use of walls, berms, interior noise insulation, double-paned

windows, and other noise mitigation measures, as appropriate, in the design of new residential or other new noise sensitive land uses that are adjacent to

arterials, freeways, or adjacent to industrial or commercial uses.

Policy N-2.B: Require, as a part of the environmental review process, that full consideration

be given to the existing and projected noise environment.

Policy N-2.D: Require that all proposed projects are compatible with adopted noise/land use

compatibility criteria.

Policy N-2.E: Enforce applicable interior and exterior noise standards.

Policy N-2.F: Allow a higher exterior noise level standard for infill projects in existing

residential areas adjacent to major arterials if it can be shown that there are no feasible mechanisms to meet the exterior noise levels. The interior standard of 45 dBA CNEL shall be enforced for any new residential project.

IMPACT *4.12.B* 

Exposure of persons to or generation of excessive groundborne vibration or grounborne noise levels would be less than significant with implementation of the proposed General Plan Amendment policies.

Typical sources of groundborne vibration and noise include construction activities and heavy vehicle traffic. Excessive vibration can lead to structural damage and general annoyance to the public. Vibration can also adversely affect delicate instruments such as electron microscopes and advanced technology production and research equipment.

Pile drivers and rock blasting are generally the primary cause of construction related vibration impacts. Such construction methods are employed on a limited basis, on sites where there are extensive layers of very hard materials that must be loosened and/or penetrated to achieve the grading plan and place foundation supports. Additional vibration impacts could occur where heavy machinery is required to break up large, hard rocks into smaller fragments. The need for such methods is determined through site-specific geotechnical investigations that identify the subsurface materials within the grading envelope, along with the construction methods recommended to handle the types of materials that are found.

Occasionally, large bulldozers and loaded trucks can create perceptible vibration at close proximity; however, they generally do not cause vibration that could cause structural or cosmetic damage. Construction equipment and activities are categorized by the nature of the vibration it produces. Equipment or activities typical of

continuous vibration include excavation equipment, static compaction equipment, vibratory pile drivers, and pile-extraction equipment. Equipment or activities typical of transient (single-impact) or low-rate repeated impact vibration include impact pile drivers, blasting, and crack-and-seat equipment. High-rate repeated impact vibrations are common of jackhammers and pavement breakers. Table 4.12-4 (Common Construction Vibration) summarizes the peak particle velocity (PPV) at 25 feet for common construction equipment.

Table 4.12-4 Common Construction Vibration

Equipment	PPV (in/sec at 25ft)		
Crack-and-Seat Operators	2.400		
Vibratory Roller	0.210		
Large Bulldozer	0.089		
Caisson Drilling	0.089		
Loaded Trucks	0.076		
Jackhammer	0.035		
Small Bulldozer	0.003		
Source: California Department of Transportation. Transportation- and Construction-Induced Vibration Guidance Manual, June			

2004

Vibration varies widely with distance and intensity. Vibration from earthmovers and haulers have no potential to damage buildings after ten feet, while vibration from blasting activities can damage structures up to 115 feet away. Common mitigation for impact pile drivers include jetting, pre-drilling, use of cast-in-place or auger cast piles, use of non-displacement piles, and use of pile cushioning. Vibration can be reduced from breaking of concrete and other materials through use of hydraulic crushers, saws or rotary rock-cutting heads, hydraulic splitters, and chemicals instead of using hydraulic breakers.

Building and roadway construction has the potential to generate perceptible vibration levels to sensitive receptors within 20 feet from the operation of heavy equipment. Given that vibration levels dissipate rapidly with distance, and that homes along streets and intersections are typically more than 20 feet away from the street edge, residential land uses adjoining roadway and intersection improvement projects would not likely be subject to distinctly perceptible vibration levels over extended periods of time.

Potential vibration due to future construction activities would be assessed in conjunction with the City's routine review of site-specific geotechnical studies and the recommended grading and foundation design measures. This will occur in the project planning process, prior to project approval, for projects subject to review under CEQA, and this will provide an adequate mechanism to require special measures to mitigate potentially significant vibration impacts of the updated General Plan. Impacts resulting from construction-generated groundborne vibration and noise would be less than significant.

**IMPACT** 4.12.C

The proposed project would allow for additional development of industrial, commercial, residential, and mixed-use development that may cause a permanent increase in ambient noise levels in excess of current levels. Those impacts would be less than significant with continued implementation of the City's Municipal Code and the proposed General Plan Amendment policies.

The City has specific exterior and interior noise standards that are described above. In addition, the Draft Noise Element includes policies that pertain to protecting new development from noise impacts through ensuring compatible use with surrounding areas, building types and materials, and setbacks. Refer to Goals and Objectives N-1 and N-2 above along with the corresponding policies that lead to the achievement of the goals and objectives.

Future population growth within the planning area would result in increased traffic and the need for roadway and intersection improvements necessary to maintain desired levels of service, despite this increase in traffic. Increases in traffic could result in permanent increases in ambient noise levels, e.g., where a roadway segment is proposed to be expanded with additional travel lanes over the long-term to achieve level of service standards. Roadway noise could also increase on an existing roadway that will carry increasing traffic volumes. In either set of circumstances, roadway noise levels could increase to beyond the levels considered acceptable for the adjacent land uses. This issue is addressed under Impact 4.12.C.

The proposed Land Use Element Amendment would accommodate development of additional commercial, residential, and mixed-use development in specific focus areas where land use changes would apply. This could result in an increased number of residents registering noise complaints from neighboring uses. Intermittent or temporary neighborhood noise from amplified music, public address systems, barking dogs, landscape maintenance, and stand-by power generators are disturbing to residents but are difficult to attenuate and control.

The City's Noise Control section of the Zoning Code includes Section 13.28 which pertains to loud, unnecessary noise. The Section states "it shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary and unusual noise which disturbs the peach or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area, regardless of whether the noise level exceeds the standards specified in Section 13-280." Continued enforcement of the Zoning Code would reduce potential nuisance noise impacts. As such, impact is less than significant.

IMPACT *4.12.D* 

The proposed project would allow for additional development of industrial, commercial, residential, and mixed-use development that may result in increased temporary or intermittent noise impacts. Those impacts would be less than significant with the continued implementation of the City's Municipal Code and the proposed General Plan Amendment policies.

#### **Demolition and Construction Noise**

Over the long term, the General Plan will facilitate the completion of various construction projects at numerous places throughout the City. These projects can occur in any zoned area, including residential, commercial/office, industrial, and mixed-use area. It is unknown when and where specific construction may occur, and therefore, potential impacts for the proposed General Plan Amendment can only be addressed in a qualitative manner.

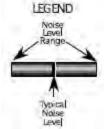
Construction activities would generate a variety of noise levels associated with different kinds of construction equipment and the location of staging, construction, storage and access routes. Grading, paving, landscaping and building construction processes involve equipment and vehicles that are known to produce intrusive levels of noise. This will result in temporary increase in local noise levels near the active construction sites that could adversely affect neighboring land uses, particularly those where sensitive receptors are located. Construction activity generates noise that potentially has a short-term impact on ambient noise levels and can reach high levels that have the potential to impact nearby sensitive land uses.

Future construction projects within the city will be subject to rules of the noise ordinance. The construction noise impacts to a particular neighborhood are dependent upon a number of factors specific to the project. Some of the factors include proximity to sensitive land uses, time of day, intervening barriers, level of construction (e.g., number and type of construction equipment that is operating simultaneously), and the

duration of the project's construction phase. Worst-case examples of construction noise at 50 feet are presented in Table 4.12-5 (Typical Construction Equipment Noise Levels). The peak noise level for most of the equipment that would be used during construction is in the range of 70 to 95 dBA at a distance of 50 feet. Noise levels for each doubling of distance will be 6 dBA less. For example, at 200 feet, the peak construction noise levels range from 58 to 83 dBA.

A-Weighted Sound Level (dBA) At 50 Feet Equipment 60 90 100 110 70 80 Compactor Roller Front Loader Backhoe Tractor Grader Scraper Paver Truck Concrete Mixer Concrete Pump Crane (Movable) Crane (Derrick) Pump Generator Compressor Pneumatic Wrench Jackhammer Rock Drill Pile Drivers (Peak Levels) Vibrator Saw 80 90 60 70 100 110

Table 4.12-5
Typical Construction Equipment Noise Levels



Source: Mestre Greve Associates

According to Section 13-279 (Exceptions for Construction) of the City of Costa Mesa Municipal Code, operation of construction equipment, vehicles, or construction work is exempt between the hours of 7:00 AM and 7:00 PM on Mondays through Fridays and between 9:00 AM and 6:00 PM on Saturdays provided that all required permits have been obtained from the appropriate City departments. Potential construction noise will be assessed in conjunction with the City's review of site-specific noise impact analyses. Although construction activity is exempt according to Section 13-279 of the Costa Mesa Municipal Code, noise levels at sensitive receptors should be analyzed on a case-by-case basis and appropriate mitigation should be applied to bring noise levels down to acceptable levels. Compliance with Chapter XIII (Noise Control) will ensure that construction noise impacts will be less than significant.

IMPACT 4.12.E 4.12.F The proposed project would not expose new residents or people working within two miles of any public ariport nor private airport to excessive noise levels associated with air traffic.

Portions of the City of Costa Mesa are located within the John Wayne Airport land use plan area (OC 2008). Overflights to and from the airport are audible within portions of the city. The airport is located along the northeastern boundary of the city. A large industrial area, located between SR 55 and the airport, is adjacent to the airport within Costa Mesa. In addition, approximately 100 dwelling units are located within the 65 dBA CNEL noise impact area south of the runway.

According to the noise contour map for JWA, the ultimate 65 dBA CNEL noise contour for the airport encroaches into the City of Costa Mesa. However, the planned land use in the encroachment area is industrial; this is not considered a sensitive land use for the 65 dBA airport noise area. The General Plan Amendment would not change land uses in areas susceptible to a 65 dBA or greater noise levels associated with JWA. Furthermore, as discussed above the JWA has one of the most stringent aircraft access and noise monitoring programs in the United States and the world. Therefore, the proposed project would not expose new residents or people workers within two miles of an airport to excessive noise levels associated with air traffic. Impact would be less than significant.

# Mitigation Measures

No mitigation measures are required.

# References

Federal Highway Administration. 2011. Highway Traffic Noise: Analysis and Abatement Guidance. (FHQA-HEP-10-025). Original June 2010 and revised December 2011.

California Governor's Office of Planning and Research. General Plan Guidelines. 2003

U.S. Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Assessment. FTA -VA-90-1003-06. Washington, DC. May 2006.

City of Costa Mesa. 2006. Zoning Code, Chapter XIII. Noise Control. Ordinance 06-9, Revised April 2006.

Caltrans. 2004. *Transportation and Construction Induced Vibration Manual and Technical Advisory 04-01-R0201* (Transportation Related Earthborne Vibrations).

Noise Quest. 2015. Information on sources of noise. (<a href="http://www.noisequest.psu.edu/sourcesofnoise-overview.html">http://www.noisequest.psu.edu/sourcesofnoise-overview.html</a>). Accessed December 17, 2015

Caltrans. 2002. *Transportation Related Earthborne Vibrations* Technical Advisory (TAV-02-01-R9601). February 20, 2002

Jones & Stokes. 2004. *Transportation- and construction-induced vibration guidance manual.* June. (J&S 02-039.) Sacramento, CA. Prepared for California Department of Transportation, Noise, Vibration, and Hazardous Waste Management Office, Sacramento, CA.

Orange County, 2015. John Wayne Airport., About the John Wayne Airport (http://www.ocair.com/aboutjwa/). Accessed December 17, 2015

Orange County Airport Land Uses Commission, 2008. Land Use Plan for John Wayne Airport and Enivirons. Amended April 17, 2008.

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This section examines population and housing growth impacts associated with implementation of the General Plan Amendments. Population and household estimates and projections for the City were obtained from the California Department of Finance (DOF) and SCAG. In response to the Notice of Preparation and EIR scoping meeting, several comments were received regarding population and housing. The Costa Mesa Affordable Housing Coalition requested that loss of existing housing units for lower-income residents be addressed in the EIR. The Kennedy Commission had similar comments related to the loss of existing housing units for low-income residents. Several residents also submitted comments related to housing, including whether the 2015 to 2035 General Plan (also referred to as the General Plan Amendments) might result in the replacement of less dense housing with multi-family housing. The former issue is addressed in this section in the context of population growth and the displacement of persons from existing housing units. The latter comment is addressed in this section and within Table 4-13.1, which illustrates that the General Plan Amendments will not replace low-density housing with high-density housing.

# Existing Conditions

# **Population**

The U.S. Census reported the population of Costa Mesa at 112,174 in 2013 (three-year American Community Survey). According to DOF estimates, the City of Costa Mesa has an estimated population of 113,455 as of January 1, 2015. This DOF figure represents a 1.45 percent increase compared to the 2008 population of 111,835. The City's SOI contains approximately 209 acres, with an estimated current population of 614 (SCAG 2012). SCAG's 2012-2035 Regional Transportation Plan (RTP) forecasts Costa Mesa's population to increase to 113,700 in 2020 and 114,000 in 2035. SCAG's estimates are based on prior data that do not reflect the more refined counts reported by DOF.

# Housing

According to the DOF, the City of Costa Mesa had approximately 42,600 housing units as of January 1, 2015. This number represents a 1.12 percent increase compared to the 2010 estimate of 42,120 housing units. Of the 42,600 dwelling units in the City, 55% are high-density units, 33% are low-density units, 10% are medium-density units, and 2% comprise age-qualified housing. Although there are more high-density units, the low-density category (primarily single-family residences) comprise the housing type with the largest land coverage in the City. Additionally, there are 376 housing units in the City's sphere of influence (LAFCO 2010).

## **Employment**

According to SCAG's adopted 2012-2035 Regional Transportation Plan (RTP), Costa Mesa had an estimated employment base of 94,200 in 2008 (SCAG 2012) and according to City sources, an estimated 87,278 jobs in 2015 (Costa Mesa Economic Development Department). The 2012-2035 RTP forecasts Costa Mesa's employment base to be to 88,300 in 2020 and 88,800 in 2035. City sources project 104,425 jobs in 2030. The discrepancies between City and SCAG data and projections can be attributed to differing data sources.

<sup>&</sup>lt;sup>1</sup> It is noted that DOF's housing unit figures do not classify or include motel units as housing units.

# Planning and Regulatory Framework

# Housing Element 2013-2021

The Costa Mesa Housing Element for the 2013-2021 period was adopted in 2014 and subject to its own CEQA review at that time, and in 2014 was certified by the State Department of Housing and Community Development (HCD). The Housing Element goals/policies/programs are part of the regulatory framework under which the impacts of the General Plan Amendments are being analyzed, but those goals/policies/programs are not being analyzed as part of this DEIR.

State Housing Element Law requires that a local jurisdiction accommodate a share of the region's projected housing needs for the planning period. This share, called the Regional Housing Needs Allocation (RHNA), is important because State law mandates that local jurisdictions provide sufficient land to accommodate a variety of housing opportunities for all economic segments of the community. Compliance with this requirement is measured by the local jurisdiction's ability to provide adequate land to accommodate the RHNA. As noted, the City's 2013-2021 Housing Element was certified by HCD in 2014 as being in compliance with State law, including provision of adequate sites and programs to meet the City's RHNA for all income categories.

The following goals and policies of the Housing Element address the availability of affordable housing and meeting specialized housing needs in the City.

#### GOAL HOU-1: PRESERVATION AND ENHANCEMENT

It is the goal of the City of Costa Mesa to preserve the availability of existing housing opportunities and to conserve as well as enhance the quality of existing dwelling units and residential neighborhoods.

- Policy HOU-1.6 Continue existing rehabilitation loan and grant programs for low- and moderate-income homeowners as long as funds are available.
- Policy HOU-1.7 Minimize the displacement of existing residences due to public projects.
- Policy HOU-1.8 Encourage the development of housing that fulfills specialized needs.

#### GOAL HOU-2: PRESERVING AND EXPANDING AFFORDABLE HOUSING OPPORTUNITIES

It is the goal of the City of Costa Mesa to provide a range of housing choices for all social and economic segments of the community, including housing for persons with special needs. This goal can be achieved by implementing the following policies:

- Policy HOU-2.2 Promote the use of State density bonus provisions to encourage the development of affordable housing for lower and moderate income households, as well as senior housing.
- Policy HOU-2.3 Provide incentive bonus units to encourage the redevelopment of residential units that are nonconforming in terms of density. The incentive shall be limited to the multi-family residential land use designations. The density incentive shall be limited to an increase of 25 percent above Medium-Density or an increase of 50 percent above High-Density. In no case shall the resulting number of units exceed the existing number of units on each site

- Policy HOU-2.4 Encourage developers to employ innovative or alternative construction methods to reduce housing costs and increase housing supply.
- Policy HOU-2.5 Continue membership in the Orange County Housing Authority to provide rental assistance to very low income households.
- Policy HOU-2.6 Provide clear rules, policies, and procedures, for reasonable accommodation in order to promote equal access to housing. Policies and procedures should be ministerial and include but not accommodation (i.e., persons with disabilities, family-members, landlords, etc.), timeframes for decision-making, and provision for relief from the various land-use, zoning, or building regulations that may constrain the housing for persons of disabilities.
- Policy HOU-2.7 Monitor the implementation of the City's ordinances, codes, policies, and procedures to ensure they comply with the "reasonable accommodation" for disabled provisions and all fair housing laws.

# Housing Element and Land Use Law

California law, in Government Code Sections 65580-65589.9, establishes regulations for the required contents of the General Plan Housing Element. Specifically, and on point here, Section 65583.2(c)(3) sets forth what is colloquially referred to as "default densities" for lower-income housing. For local jurisdictions in a metropolitan county, which Costa Mesa is considered, the default density is 30 units per acre (or more). As stated in the law, land use densities at 30 units per acre (or more) "shall be deemed appropriate to accommodate housing for lower income households." Provided a jurisdiction demonstrates that adequate zoning is in place at this default density to accommodate that jurisdiction's assigned fair share of lower-income housing, then that jurisdiction is compliant with this particular provision of Housing Element Law, i.e., zoning at densities of 30 units per acre or more are deemed appropriate to accommodate housing for lower income households.

Separate from default densities described in the Housing Element Law, Government Code Sections 65915-65918 (State Density Bonus Law) set forth the requirements a local jurisdiction must follow when an owner or developer seeks a density bonus in consideration for providing a specified percentage of affordable housing. Cities have limited jurisdiction to deny applications by owners and developers seeking density bonuses under State Density Bonus Law. Thus, this State law mechanism is available in Costa Mesa to owners and developers that agree to integrate affordable housing units into a market-rate project utilizing the State Density Bonus Law; in addition, as described above, local jurisdictions are encouraged to exercise their police powers and through land use and zoning to establish default densities, which are deemed to accommodate housing for lower income households. The densities established by the City in the Residential Incentive Overlay zones under the General Plan Amendments will encourage and accommodate housing for lower income households.

#### **Relocation Law**

Both federal law and State relocation laws (California Relocation Assistance Law, Health and Safety Code Section 7260, *et seq.*, and the HCD implementing regulations in Code of Regulations, Title 25, HCD, Division 1, Chapter 6, Section 6000, *et seq.* (CRAL), and the Federal Uniform Relocation and Real Property Assistance Act, 42 U.S.C. Section 4601, *et seq.*, and the implementing regulations in 49 CFR Part 24, and in specific programs in 24 CFR Parts 42, 91, 92, and 570, including for example, the CDBG, HOME and other federal programs (URA) provide relief for persons displaced from their homes by public acquisitions, programs or projects funded all or in part by a public entity. The

State CRAL and federal URA provisions do not apply in the event a private development project may cause the displacement of persons (or businesses).

# Thresholds of Significance

The General Plan Amendments would result in a significant impact if they would:

- A. Induce substantial population growth in the area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- B. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere
- C. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

# Environmental Impacts

## **Draft Land Use Element**

# Land Availability for Future Development

Of the 8,032 net<sup>2</sup> acres in Costa Mesa, only 88 acres—or 1.1 percent—are either vacant or support agricultural production. The agricultural uses which currently take place on the Segerstrom Home Ranch and Sakioka Lot 2 properties are temporary; the lands are entitled for development under the *North Costa Mesa Specific Plan*. As a result, the majority of new development within the City will take the form of infill development, particularly on underutilized sites. The primary challenge for land use planning will be to determine the best use and development approach for remaining infill properties.

# Goals, Objectives, and Policies

Maintaining and enhancing the quality of life in Costa Mesa is the foundation of the General Plan. As part of the proposed General Plan Amendments, the City looks to focus future change within targeted growth areas. Some of these areas already have a mix of commercial, office, hotel, and residential uses, and are located along major arterials and roadways that will be enhanced with "Complete Streets" features, improved landscaping, and expanded public spaces (such as parks and plazas). Also, current City policies look to protect and enhance neighborhoods throughout Costa Mesa to ensure these largely residential areas continue to provide value to residents and the community as whole. Goals, objectives, and policies relevant to this section of the EIR are presented below.

# GOAL LU-1: A BALANCED COMMUNITY WITH A MIX OF LAND USES TO MEET RESIDENTS AND BUSINESSES NEEDS.

<u>Objective LU-1A.</u> Establish and maintain a balance of land uses throughout the community to preserve the residential character of the City at a level no greater than can be supported by the infrastructure.

Policy LU-1.1 Provide for the development of a mix and balance of housing opportunities, commercial goods and services, and employment opportunities in consideration of the needs of the business and residential segments of the community.

<sup>&</sup>lt;sup>2</sup> Net acreage refers to acreage that does not include roads and public right-of-way.

Policy LU-1.3 Strongly encourage the development of residential uses and owner-occupied housing (single-family detached residences, condominiums, townhouses) where feasible to improve the balance between rental and ownership housing opportunities.

## GOAL LU-2: PRESERVE AND PROTECT RESIDENTIAL NEIGHBORHOODS

Policy LU-2.6 Encourage increased private market investment in declining or deteriorating neighborhoods.

## GOAL LU-3: DEVELOMENT THAT MAINTAINS NEIGHBORHOOD INTEGRITY AND CHARACTER

- Policy LU-3.5 Provide opportunities for the development of well-planned and designed projects which, through vertical or horizontal integration, provide for the development of compatible residential, commercial, industrial, institutional, or public uses within a single project or neighborhood.
- Policy LU-3.6 Facilitate revitalization of aging commercial centers by working with property owners, developers, local businesses, and other community organizations to coordinate efforts.
- Policy LU-3.7 Promote development/design flexibility that encourages older or poorly maintained high-density residential uses to be rehabilitated.

# GOAL LU-5: ADEQUATE COMMUNITY SERVICES, TRANSPORATATION SYSTEMS, AND INFRASTRUCTURE TO MEET GROWTH

Policy LU-5.7 Encourage new development that is organized around compact, walkable, mixed-use neighborhoods and districts to conserve open space resources, minimize infrastructure costs, and reduce reliance on the automobile.

# GOAL LU-6: ECONOMICALLY VIABLE AND PRODUCTIVE LAND USES THAT INCREASE THE CITY'S TAX BASE

- Policy LU-6.5 Encourage revitalization of existing, older commercial and industrial areas in the Westside with new mixed-use development consisting of ownership housing stock and live/work units.
- Policy LU-6.13 Encourage new development along major corridors that are pedestrian oriented and include a mixture of retail/service, residential, and office uses.
- Policy LU-6.19 Provide flexibility and support for development or residential, office, small retail centers, and similar uses that would serve local residents and would also benefit from the high visibility along major corridors outside of significant commercial or industrial nodes.

#### GOAL LU-8: PROMOTE A RANGE OF MULITIPLE USES AT THE FAIRVIEW DEVELOPMENTAL CENTER SITE

Policy LU-8.1

In anticipation of the potential closure or repurposing of the Fairview Development Center site, the City will work with appropriate State agencies or private entity (if the property is sold) to plan for a complementary mix of low-scale residential, institutional, public facilities, open spaces, and recreational uses within a campus setting.

# Land Use Changes that Affect Housing and Population

The proposed amended Land Use Plan, per the proposed General Plan Amendments, could increase the number of housing units in the City of Costa Mesa by 4,040 dwelling units (Table 4-13.1). These units would be added within the following land use designations: Fairview Developmental Center (Multi-Use Center), Harbor Boulevard Mixed Use Overlay, Residential Incentive Overlay (applied along Harbor Boulevard and Newport Boulevard), and SoBECA Overlay and Urban Plan Area. Based on an average number of 2.74³ persons per unit, this level of new residential development could accommodate 11,078 new residents by the year 2035. As indicated in Table 4-13.1, 200 units would be in the medium-density category (15 du/acre and greater) and 3,840 units would be in the high-density category (20 du/acre and greater). All but 978 would be at densities assumed to be able to accommodate affordable housing (30 du/ac and greater).

Table 4-13.1
Capacity for New Housing within Focus Areas

	Capacity for New Housi	ng within rocus Areas	
Focus Area	Existing Residential Land Use	Proposed Residential Land Use	Proposed Increase
Fairview Developmental	Public Development Center	300 residential units at 25	+300 residential units at 25
Center	300 beds	du/ac and 200 at 15 du/ac.	du/ac and +200 at 15
		Open Space	du/ac.
		Public/Institutional	
Harbor Boulevard Mixed Use	13 dwelling units existing at	491 residential units at 20	+478 dwelling units at
Overlay*	varying densities	du/acre	20/du acre
	General Commercial		
Residential Incentive Overlay:			
Harbor Boulevard	84 residences existing at	1,063 residential units at 40	+979 dwelling units at 40
	varying densities	du/acre	du/ac
Newport Boulevard	237 residences existing at	1,210 residential units at 40	+973 residential units at 40
	varying densities	du/ac	du/ac
	Commercial Residential		
	High Density Residential		
	General Commercial		
Segerstrom Home Ranch	Commercial Center, no	None	0
Site	residential;		
	Currently in agriculture		
Los Angeles Times Site	Light Industrial, no residential	None	0
Sakioka Lot 2 Site	Urban Center Commercial, No	660 residential units, 80	+660 residential units at 80
	residential	du/acre	du/ac (no change in
	Currently in agriculture		previously allowed unit cap

<sup>&</sup>lt;sup>3</sup> Demographic Research Unit, California Department of Finance. Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011-2015, with 2010 U.S. Census Benchmark.

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Table 4-13.1 Capacity for New Housing within Focus Areas

	capacity for New House	ing within i ocus micus	
Focus Area	Existing Residential Land Use	Proposed Residential Land Use	Proposed Increase
			of 660 units for Sakioka Lot 2)
SoBECA Overlay**	General Commercial/Light Industrial No residences existing	450 residential units at 40 du/ac	+450 residential units at 40 du/ac
Total Residential Potentially Added			+4,040 total (200 units at medium density and 3,840 units at high density) 200 units at 15 du/ac 478 units at 20 du/ac 300 units at 25 du/ac 2,402 units at 40 du/ac 660 units at 80 du/ac

<sup>\*</sup>General Plan land use overlay that allows a maximum residential density of 20 dwelling units per acre. Mixed-use projects that do not include residential components can be developed at a 1.00 FAR. Mixed-use projects with both residential and commercial components can be developed at 1.25 FAR.

The General Plan Amendments would not directly or indirectly replace low-density housing with multi-family housing. Table 4-13.1 shows that no areas within the City currently zoned for low-density housing would be affected by the General Plan Amendments.

IMPACT 4.13. A Implementation of the proposed General Plan Amendments would not induce substantial population growth, either directly or indirectly. Impacts would be less than significant.

Induced population growth may result in impacts if a project induces growth in an area not otherwise planned for growth, or in an area that cannot adequately accommodate such growth. Growth may be induced directly by proposing new residential uses, or indirectly, by proposing new roadways, other infrastructure or employment opportunities.

Population growth is complex and caused by the interplay of myriad factors, including immigration, employment and economic opportunities, births, deaths, and other influences. The General Plan Amendments would not directly induce population growth because they do not authorize a specific construction project, development plan, or other land-altering activity. Neither would the General Plan Amendments designate formerly undeveloped lands needing major infrastructure expansions (water, sewer, wastewater) for development. Instead, the General Plan Amendments have been drafted to: 1) accommodate anticipated growth in existing developed areas that are adequately served by infrastructure, 2) revive underutilized parcels and uses, and 3) preserve and enhance residential opportunities and options within the City.

The proposed amended Land Use Element establishes an overall development capacity for the City and serves as a policy guide for determining the appropriate physical development and character of the approximately 15.7 square miles that make up the City's jurisdiction proper and the additional area located within the City's sphere of influence. The development capacity of the proposed Land Use Plan is estimated at 51,894 dwelling units to house approximately 131,960 residents, and to support approximately 11.0 million square feet of office space, 13.2 million square feet of

<sup>\*\*</sup>General Plan land use overlay that allows a maximum of 450 units. Individual residential projects cannot exceed 40 du/ac.

commercial space, and 13.1 million square feet of industrial space (Table 3.0-1, *Existing Developed and Proposed Build-Out Summary* and Figure 3.0-3, *Draft Land Use Plan*).

Although the projected population at proposed General Plan buildout is 131,690 residents (21,166 over the existing population), only about 11,000 of the new residents would be attributable to the General Plan Amendments. The projected buildout population is what can be accomplished within existing urban areas that already support urban infrastructure. None of this would be accommodated on undeveloped land that requires the expansion of urban infrastructure. Additionally, should population growth be less than what the buildout can accommodate (i.e., in accordance with the SCAG projections), then residential development would also be less. Projected buildout population is just that, a projection; actual development and population growth in the City will be based on market conditions.

Currently, only 88 acres of land are undeveloped and could support new development, and these acres (on the Sakioka Lot 2 and Segerstrom Home Ranch sites) are already designated for development under the existing *North Costa Mesa Specific Plan.* Residential land uses are not permitted on the Segerstrom Home Ranch site per the *North Costa Mesa Specific Plan.* For the Sakioka Lot 2 site, no change in the existing development capacity of 660 units is proposed.

The land use designation proposed for the Los Angeles Times site would not accommodate residential uses.

With regard to the proposed Residential Incentive Overlay and Harbor Boulevard Mixed Use Overlay, the City's intent is to provide flexibility to property owners to either retain current commercial or residential uses or to redevelop sites over time with new residential housing at densities specified in the implementing overlay zone. Sites proposed for the Residential Incentive Overlay are targeted at locations along Harbor Boulevard and Newport Boulevard to take advantage of transit routes and proximity to goods and services. In the case of Newport Boulevard, residential uses are currently allowed. The proposed maximum density of 40 units per acre for the Residential Incentive Overlay might induce modest growth, but only as can be accommodated by existing infrastructure and as market forces would allow.

Similarly, with regard to proposed changes within the SoBECA Overlay and Urban Plan area, residential uses are currently allowed. The proposed amendment affecting the SoBECA area would increase allowable residential densities to 40 units per acre (currently at 20 units per acre) but would cap the ultimate unit yield at 450 units.

For the Fairview site, the proposed General Plan Amendments would allow for residential development at the time, if at all, that the State of California Department of General Services elects to repurpose the site. The proposed land use policy to allow up to 500 units at varying densities indicates the City's intent to accommodate a diversity of housing types in the event the State seeks to redevelop the property in the future. Since the Fairview property is State owned, the City's land use designation is only advisory. City land use regulatory authority would apply only in the event the State elects to repurpose the property for uses not associated with State responsibilities and functions.

Due to the focused nature of the proposed General Plan Amendments on existing urban developed land, the fact that growth caps are proposed for both the Fairview Developmental Center property and the SoBECA area, and the fact that no infrastructure improvements are proposed for the areas where new residential development would occur, the proposed project would not induce substantial population growth.

IMPACT 4.13. B The General Plan Amendments do not propose policies that would result in the displacement of substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere. The impact would be less than significant.

The General Plan Amendments would not result in the direct displacement or demolition of residential structures because the Amendments do not authorize a specific construction project, development plan, or other land-altering activity. The proposed changes to the Land Use Element could result in indirect impacts by establishing land use policies that provide incentives for private redevelopment initiatives on specified lots or for mixed-use development or support commercial uses.

For example, the Residential Incentive Overlay could encourage the conversion of existing commercial uses on Harbor Boulevard and Newport Boulevard to housing. The Residential Incentive Overlay is proposed to be applied to groups of properties at nodes along major arterials—Harbor and Newport Boulevards—that are public transportation corridors and that have ready access to goods and services for residents. The Residential Inventive Overlay is intended to incentivize transit-oriented residential development at or above densities capable of providing for affordable housing, and on specified properties. The Residential Incentive Overlay zoning will establish densities that accommodate development of housing for low-income persons, as encouraged under the State Housing Element Law as discussed above.

Included within the Residential Incentive Overlay areas are properties that support a range of commercial uses, including motels. While motels are not considered permanent housing, some owners have used their motels to provide *de facto* long-term occupancies, with some motel units occupied by extremely low-, very low-, and low-income persons. Application of the Residential Incentive Overlay and implementing zoning may result in property owners choosing to pursue private redevelopment of existing commercial or residential uses within the transit-oriented nodes, which as to commercial motel uses would cause the long-term motel occupants to move. However, because any specific property redevelopment would occur in the future, the specific number of persons using that particular motel for long-term occupancy is not known at this time. The type of residential development that would replace existing commercial uses, including motels, is also unknown, but could include new commercial uses, including hotel or motel uses, or new residential development that includes affordable housing which, based on the densities, could accommodate and encourage development of housing for low-income persons. Further, the assumption that existing commercial uses, including existing motels, within the transit-oriented nodes would be displaced if owners avail the Residential Incentive Overlay is speculative because: 1) motels provide an important resource for tourists, 2) they can be lucrative, especially in a coastal environment, and 3) are often operated by owners who treat motel management as a way of life.

Nonetheless, in the event persons are displaced from motels in the future due to a specific private redevelopment of existing commercial or residential sites within the transit-oriented nodes, there will be opportunities for those persons to find housing in Costa Mesa due to the fact that there will be more multifamily units than exist today (even accounting for the owners' using motels for long-term occupancy), and there will be greater opportunities for residents to rent or own decent, safe, and sanitary housing in more modern housing units than are currently available on these commercial motel sites. As noted above, a density of 30 units per acre is considered sufficient to accommodate, and encourage, construction of housing for lower-income households. Thus, any private redevelopment initiatives involving the reuse of existing commercial uses, including motels, at which persons may have been in occupancy long-term would result in a substantial increase in capacity for new housing at densities capable of accommodating and providing both market-rate and affordable housing within these Residential Incentive Overlay areas.

In addition, in other areas of the City, General Plan policies would allow a maximum permitted density of up 80 units per acre (Sakioka Lot 2). Thus, the City would have zoning in place to accommodate housing for lower-income households. Thereby, an overall loss of housing would not occur, and any potential displacement would be offset by the construction of greater numbers of housing and the accommodation of affordable housing throughout different areas of the City.

If persons who had occupied motel rooms move as a result of the reuse and redevelopment of the property and who are unable to find or afford decent, safe, and sanitary housing within the City, or in the event of any temporary moveout from the motel property, a number of agencies in Costa Mesa provide shelters and services for the homeless and persons at risk of becoming homeless (CM 2014). These include:

- HOPE Institute (YWCA of Central Orange County)
- Human Options
- Mental Health Activities Center
- Orange Coast Interfaith Shelter
- Serving People in Need (SPIN)
- Share Our Selves (SOS) Emergency Services
- Someone Cares Soup Kitchen

Through the annual Community Development Block Grant allocation process, the City provides funding to agencies that serve various special needs groups in the City.

Since this impact threshold focuses on whether or not the project itself is "displacing substantial numbers of housing," the potential loss of "motel units" does not meet the threshold criteria because "substantial" and "housing" can only be applied in a speculative manner. Further, the impact threshold of "necessitating the construction of replacement housing elsewhere" is not met by the project because the City is already providing housing opportunities to meet the future needs of the City and region, none of which is necessitated by the loss of residential structures in the Residential Incentive Overlay areas (refer to Table 4-13.1 above).

The actual displacement of people using motels for long-term occupancy, or *de facto* housing, is speculative because the project is the designation of a land use category overlay only; it would not directly result in the loss of motels that currently support long-term occupants. Further the City has designated land for the development of high-density housing that accommodates and encourages development of housing for low-income persons under the State Housing Element Law. As such, there would be no significant impact related to the reduction of substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

IMPACT 4.13. C

The General Plan Amendments do not propose policies that would result in the displacement of substantial numbers of people, necessitating the construction of replacement housing elsewhere. The impact would be less than significant.

The General Plan Amendments would not result in any direct displacement of substantial numbers of people because they do not authorize any construction or redevelopment activity that would displace people. While the General Plan Amendments would establish "Residential Overlay" districts that could displace housing that supports extremely low, very low-, or low-income people, as discussed in 4.13. B above, the impacts are less than significant because: 1) the General Plan Amendments would not directly cause the displacement of people, 2) the likelihood that motels being used as housing would be removed is speculative, and 3) the potential for a "substantial number of people" being displaced is speculative.

Further, even if such units were displaced, the City has designated land for the development of high-density housing that accommodates and encourages development of housing for low-income persons. The intended purpose of the Residential Incentive Overlay is to *encourage* additional high-density housing development along multimodal and mixed-use arterials, thereby providing future affordable housing opportunities at densities of 30 dwelling units or more

pursuant to State Housing Element law. As such, there would be no significant impact related to the reduction of substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Further, the City has designated land for the development of high-density housing that accommodates and encourages development of housing for low-income persons. The intended purpose of the Residential Incentive Overlay is to *encourage* additional high-density housing development along multimodal and mixed-use arterials. As such, there would be no significant impact related to the displacement of substantial numbers of persons, necessitating the construction of replacement housing elsewhere.

# Mitigation Measures

No mitigation measures are required since no impacts would result.

# References

California Government Code, Section 65583.2 (Residential land inventory; definitions; inventory elements; suitability for regional housing needs; densities).

City of Costa Mesa, 2014. General Plan Housing Element.

Orange County Local Agency Formation Commission. 2010. 2010 Islands Strategy Handbook, Islands Map.

Southern California Association of Government, 2012. *2012-2035 Regional Transportation Plan: Sustainable Communities Strategy*, April 2012.

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This section analyzes potential impacts associated with the provision of new or expanded public service facilities in response to long-term growth guided by the General Plan Amendments. Public services examined are fire protection and emergency services, police protection, schools, and libraries. Parks are discussed in Section 4.15, Recreation. No comments pertaining to public services were submitted during circulation of the Notice of Preparation.

# Existing Conditions

# Fire Protection and Emergency Services

# Costa Mesa Fire Department

The City of Costa Mesa Fire Department is responsible for fire prevention, enforcement of fire protection laws and ordinances, fire suppression, emergency medical services, hazardous materials response, and weed abatement [CM Fire Department]. <sup>1</sup> These services are considered essential and are continually reviewed and updated as part of the City's annual budgeting process. Fire protection incorporates all elements of the community, the private sector, community agencies, and the Fire Department. In addition to providing response services, the Fire Department practices fire prevention and emergency preparation through use of built-in fire protection such as early warning and detection systems, automatic fire sprinklers, fire resistive design of structures and materials, fire prevention inspections, and public education.

Modern cities have been successful in attracting and keeping business and industry by maintaining low, base fire insurance rates. These rates are set by Insurance Services Office (ISO) Commercial Risk Services, Inc., and are on a scale of one to ten, with protection class one affording the best rates. Ratings are based essentially on the capability of the Fire Department to deliver needed quantities of water to building fires in a timely fashion. Factors considered in the rating include: required fire flow for buildings; available water supplies; fire station locations; fire equipment and personnel; fire inspection programs; firefighter training programs; and fire communications systems.

Costa Mesa has achieved and maintains a protection class two, which affords residents and business owners excellent base fire insurance rates. To maintain this high rating, the City must maintain a high level of fire protection and prevention as building densities increase and vacant land is developed. This is accomplished by continual monitoring of existing conditions, review of all building projects and planning for additional fire protection facilities, equipment, personnel, and training to meet future needs.

The Costa Mesa Fire Department is staffed by 71 uniformed personnel, including the fire chief, battalion chiefs, fire captains, engineers, and firefighter/paramedics. All firefighters on the Costa Mesa Fire Department, in addition to their fire suppression and prevention duties, are trained and equipped to provide emergency medical care. Some firefighters, designated as firefighter-emergency medical technicians, are capable of providing basic life support level care. Other firefighters, designated as firefighter-mobile intensive care paramedics, are capable of providing advanced life support level care. The Costa Mesa Fire Department responded to over 11,599 calls in 2014 from six stations throughout the community. Fire and police station locations, as well as parks and schools, are mapped on Exhibit 4.14-1 (Public Services Map). Table 4.14-1 (Fire Station Locations) lists the six Costa Mesa Fire Department Stations and their address.

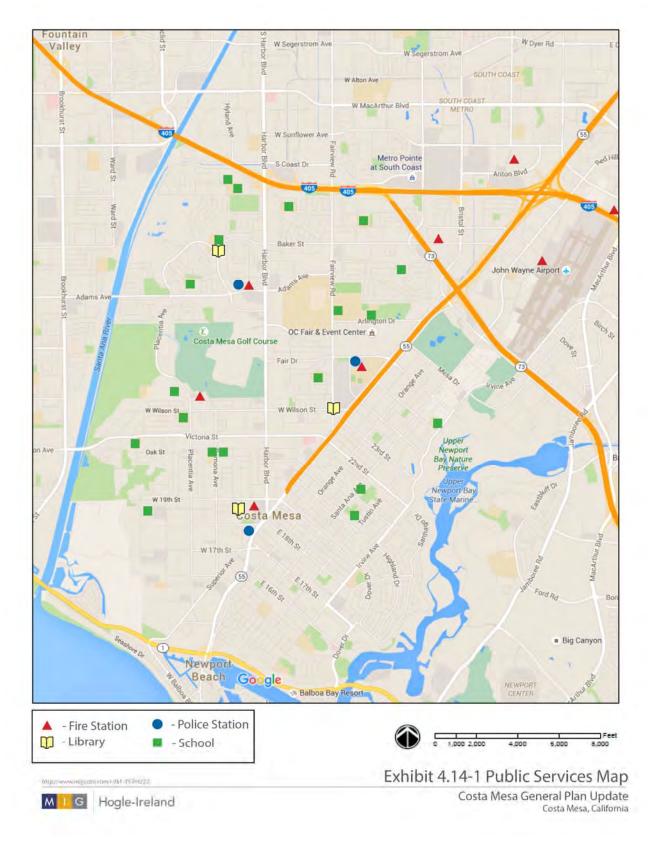


Figure 4.14-1 Public Services Map

Table 4.14-1 Fire Station Locations

Station	Address	
Royal Palm Station	2803 Royal Palm Drive	
Baker Station	800 Baker Street	
Park Station	1865 Park Avenue	
Placentia Station	2300 Placentia Avenue	
Civic Center Station	2450 Vanguard Way	
Metro Station	3350 Sakioka Drive	
Source: City of Costa Mesa		

# Orange County Fire Authority

Costa Mesa and surrounding jurisdictions are located in the Orange County Fire Authority's Operations Division 2, Battalion 5 [OCFA).² Operations Division 2 serves the cities/communities of Emerald Bay, Irvine, John Wayne Airport, and the University of California, Irvine. Division 2 includes nine stations. The nearest stations to the planning area are Station 28 located at 17862 Gillette Avenue in Irvine and Station 33 located at 374 Paularino in Costa Mesa. Station 28 is located in an industrial area of Irvine and is staffed by three captains, three engineers, and three firefighters. Station 28 is equipped with one engine. Station 33 is located at John Wayne Airport and is staffed by three captains, six engineers, and nine firefighters. Station 33 specializes in airport crashes and includes four crash apparatus, a foam trailer, and a crane.

#### Police Protection

# Costa Mesa Police Department

The 15 square miles that make up the City of Costa Mesa is served by the Costa Mesa Police Department. The Police Department headquarters is in the City's civic center located at 99 Fair Drive. Approximately 196 headquartered staff includes patrol officers, detectives, traffic officers, and administrative personnel. Three police substations serve the planning area, located at 567 West 18th Street, 2803 Royal Palm Drive, and at South Coast Plaza. Costa Mesa is staffed by 130 sworn officers and 66 non-sworn support staff, equating to a ratio of 1.18 sworn officers for every 1,000 residents (based on a population of 110,332). The Costa Mesa Police Department consists of three Department Divisions, including the Administration Division, the Field Operations Division, and the Support Services Division [COPD].<sup>3</sup> The Department responded to an average of 274 violent crimes and 3,583 property crimes between 2009 and 2015 [COPD].<sup>4</sup>

# Orange County Sheriff

The Orange County Sheriff Department's North Operations Division serves the unincorporated portions of the planning area from the Sheriff's Headquarters in Santa Ana. The North Operations Patrol Division provides law enforcement services for the 72,212 residents of unincorporated Orange County. These unincorporated areas, known as "County islands," are located adjacent to the cities of Anaheim, Costa Mesa, La Habra, Brea, Garden Grove, Newport Beach, Orange, Santa Ana, Tustin, and Placentia. Also included are the communities of Midway City, Emerald Bay, Rossmoor, and Silverado Canyon. The Sheriff also contracts to the City of Villa Park. North Patrol deputies respond to over 40,000 calls for service each year [OCSCD].<sup>5</sup>

#### Schools

# Newport Mesa Unified School District

The planning area is located entirely within the Newport Mesa Unified School District (NMUSD). NMUSD covers 58.83 square miles and serves the cities of Newport Beach and Costa Mesa. NMUSD includes 22 elementary schools, two intermediate schools, two middle schools, two high schools, three alternative schools, an adult education program, and 13 preschools [NMUSD].6 NMUSD has a current enrollment of 21,800 students. School facilities serving the planning area are summarized in Table 4.14-2 (School Enrollment in the Planning Area). Enrollment figures indicate that Rogers, Grant, Alice Birney, and Lincoln Elementary Schools, Colton Middle School, and Colton High School exceeded capacity during the 2009-2010 school year (the latest year for which data were readily available from NMUSD).

Table 4.14-2 Costa Mesa School Enrollment

School	Location	Capacity	Enrollment
Elementary Schools	<b>Location</b>	oup don't	ommone
Adams	2850 Clubhouse Rd		422
California	3232 California Ave.		417
College Park	2380 Notre Dame Dr.		567
Davis Magnet School	1050 Arlington Dr.		569
Kaiser	2130 Santa Ana Ave.		705
Killybrooke	3155 Killybrooke Ln.		401
Paularino	1060 Paularino Ave.		438
Pomona	2051 Pomona Ave.		509
Everett A. Rea	661 Hamilton St.		490
Sonora	966 Sonora Rd.		498
Victoria	1025 Victoria St.		364
Whittier	1800 Whittier Ave.		718
Wilson	801 Wilson St.		483
Woodland	2025 Garden Ln.		542
Middle Schools			
Costa Mesa	2650 Fairview Ave.		647
TeWinkle	3224 California St.		644
High Schools			
Costa Mesa	2650 Fairview Ave.		1,154
Early College	2990 Mesa Verde Dr.		257
Estancia	2323 Placentia Ave.		1,157
Alternative Schools			
Back Bay High School	390 Monte Vista Dr.		176
Monte Vista High School	390 Monte Vista Dr.		155
Source: Ed-Data 2015, NMUSD 2015			

## Libraries

Three public libraries, operated by the County of Orange, are located within the planning area. The Mesa Verde Branch Library is located at 2969 Mesa Verde Drive, the Costa Mesa/Donald Dungan Library is located at 1855 Park Avenue, and the Costa Mesa Technology Library is located at 2263 Fairview Road. The Mesa Verde Branch Library is 7,100 square feet in size, the Donald Dungan Library is approximately 10,500 square feet in size, and the Costa Mesa Technology Library is approximately 2,800 square feet in size. These facilities serve approximately 55,000 borrowers annually and house over 68,000 items in circulation.

# Planning and Regulatory Framework

# Insurance Services Office (ISO)

The ISO provides rating and statistical information for the insurance industry in the United States. The ISO evaluates a community's fire protection needs and services and assigns each community a Public Protection Classification (PPC) rating. Insurance rates are based upon the community's rating. For planning purposes, the ISO recommends that developed portions of a community should have a first-due engine company within 1.5 miles and a ladder-service company within 2.5 miles.

#### **National Fire Protection Association**

The National Fire Protection Association recommends that fire departments respond to fire calls within six minutes of receiving the request for assistance 90 percent of the time. These time recommendations are based on the demands created by a structural fire. Response time is generally defined as one minute to receive and dispatch the call, one minute to prepare to respond in the fire station or field, and four minutes (or less) of travel time.

#### Costa Mesa General Plan

The adopted Costa Mesa General Plan Safety Element includes goals and objectives intended to avoid and prevent damage to property or loss of life through implementation of codes, ordinances, special conditions, and emergency action.<sup>8</sup> The goals and objectives identified below were adopted to ensure adequate provision of fire and police protection in response to the long-term growth of the City.

**GOAL SAF1: ENVIRONMENTAL AND MANMADE HAZARD PROTECTION.** It is the goal of the City of Costa Mesa to protect its citizens and property from injury, damage, or destruction from environmental hazards, including hydrologic, geologic, and climatic episodes, as well as from man-made hazards, including hazardous materials.

Objective SAF-1A. Work towards the mitigation or prevention of potential adverse consequences of natural disasters.

Objective SAF-1B. Participate in the safe, efficient and responsible management of hazardous waste materials.

## Leroy F. Green School Facilities Act

California Government Code Section 65995 (The Leroy F. Green School Facilities Act of 1998) sets base limits and additional provisions for school districts to levy development impact fees and to help fund expanded facilities to house new pupils that may be generated by new development. Sections 65996(a) and (b) state that such fees collected by school districts provide full and complete school facilities mitigation under CEQA. These fees may be adjusted by school districts over time as conditions change.

## Costa Mesa Municipal Code

The City of Costa Mesa collects Development Impact Fees (DIF) for proposed projects to offset incremental increases in service demand on civic center, fire, library, parks, police, and transportation facilities.

# The Quimby Act (Government Code Section 66477)

The Quimby Act (Government Code Section 66477), enacted in 1975, created a framework that allows cities and counties to provide parks for growing communities. The Quimby Act authorizes jurisdictions to adopt ordinances that require parkland dedication or payment of in-lieu fees as a condition of approval of residential subdivisions. The Quimby Act also specifies acceptable uses and expenditures of such funds, such as allowing developers to set aside land, donate conservation easements, or pay direct fees for park improvements. The City of Costa Mesa has adopted a local ordinance implementing the provisions of the Quimby Act. For new residential subdivisions, the ordinance requires dedication of land, payment of fees in-lieu of parkland dedication, or a combination thereof at a rate of three acres of parkland per 1,000 residents.

The City also collects parkland fees as part of its DIF program to fund the acquisition and/or improvement of parkland. This funding may not be used for ongoing operational funding since it is intended to provide for additional parkland to offset impacts associated with new development (other than residential subdivisions). These parkland impact fees are applicable to both residential and non-residential developments.

# Thresholds of Significance

A significant impact could occur if the General Plan Update would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- A. Fire Protection
- B. Police Protection
- C. Schools
- D. Parks
- E. Other Public Facilities

# Environmental Impacts

The proposed General Plan Amendments could accommodate up to 9,271 new dwelling units, up to 21,166 more residents, and up to 5.6million square feet of new non-residential development relative to existing developed conditions. Opportunities for medium-density residential development would be provided in the Harbor Boulevard and Newport Boulevard Residential Incentive Overlay and SoBECA focus areas. Opportunities for high-density residential development would be provided for in the Segerstrom and Sakioka focus areas, although the proposed Amendments would not increase the development yield currently allowed, just the density for individual development projects. Opportunities for new mixed-use residential development would be provided in the Fairview Overlay focus area. Opportunities for mixed-use residential and commercial development would be provided in the Harbor Mixed Use Overlay focus area. Future office commercial development would be provided in the Los Angeles Times focus area.

IMPACT 4.14 A Impacts related to the expansion of fire protection facilities to maintain applicable service standards would be less than significant with implementation of existing General Plan and Municipal Code policies and requirements.

Based on the ISO recommendation that all development be within 1.5 miles of a fire station equipped with a fire engine, the majority of the planning area lies within the first-response range of an engine-equipped station that includes all six current Costa Mesa Fire Department stations. No portion of any of the identified focus areas is farther than 1.5 miles away from any of the City's six stations.

Adoption of the proposed General Plan Amendments would not directly create the need for any new or expanded facilities because the project does not authorize any particular development project or construction activities. While build out of the proposed General Plan would create incremental increases in population and demand on fire services, the proposed Safety Element Policy includes the following policies to address long-term needs:

Policy S-2.D: Provide a high level of police and fire service in the community. Secure adequate facilities, equipment, and personnel for police and fire.

Policy S-2.E: Consult with neighboring jurisdiction and partner agencies to respond appropriately to emergencies and incidents in all parts of the City.

Policy S-2.F: Require that water supply systems for development are adequate to combat structural fires.

Policy S-2.G: Require development to contribute its fair share towards funding the provision of appropriate fire and emergency medical services as determined necessary to adequately serve the project.

Policy S-2.J: Maintain staff and facilities that will continue to support a coordinated and effective response to emergencies and natural disasters throughout the City.

Policy S-2.K: Consult with neighboring jurisdictions, local employers, and industries to ensure that emergency preparedness and disaster response programs equitably serve all parts of the City.

Policy S-2.L: Continue to maintain adequate police and fire staffing, facilities, equipment, and maintenance in order to protect the community.

Through the annual budgeting process, the City determines how to implement these policies based on community needs and available resources. In particular, S-2.G requires that development contribute its fair share towards funding the provision of appropriate fire and emergency medical services. These fair share contributions would incrementally fund expansion or construction of new facilities as growth is accommodated in the City. With continued implementation of these policies and review of individual development projects with regard to emergency service needs, impact would be less than significant.

A key component of fire protection is adequate fire flow at local hydrants. Local water mains and hydrants may need to be upgraded and/or replaced over the long-term to ensure adequate fire flow to existing and future development. Proposed Safety Element Policy S-1.F requires that water supply systems for development be adequate to combat structural fires. If a fire facility is to be expanded or constructed as a result of buildout of the proposed General Plan, the fire facility would undergo a development review process and be subject to environmental review pursuant to CEQA. That environmental review would identify site-specific conditions and physical changes resulting from fire station expansion, construction of new fire stations, or trenching needed for fire flow and water supply. Mitigation would be identified, as necessary, to reduce impacts related to fire and emergency service facilities expansion or new construction, as mandated by CEQA and implemented by the City through its review procedures. Impacts related to the expansion and new construction of fire protection and emergency service facilities would be less than significant with implementation of General Plan policies and environmental review standards.

IMPACT 4.14.B Impacts related to the expansion of police protection facilities to maintain applicable service standards would be less than significant with implementation of General Plan policies and Municipal Code requirements.

The Costa Mesa Police Department currently has a service ratio of 1.18 officers per 1,000 residents, based on a current population of 110,524. With an estimated build-out population of 131,690 and assuming this ratio is maintained, a total of 160 sworn officers would be needed to meet the long-term service needs of the planning area, an increase of three officers. The officer-to-resident ratios is just one standard that can be used to measure Department performance; other sources include crime statistics, response times, number and basis of citizen complaints, and employee performance evaluations.

Future residential growth generally would be accommodated in the identified focus areas. Ensuring that police protection and emergency services are adequate to serve the community over time can be achieved through the hiring of sworn officers and support personnel, purchasing new and replacement equipment, and constructing new or expanded facilities. At this time, the Police Department has not identified the need for any new or expanded facilities to meet service needs in the planning area. Adoption of the proposed General Plan Amendments would not directly create the need for any new or expanded facilities because the project does not authorize any particular development project or construction activities. However, build out of the proposed General Plan would create incremental increases in population and demand for police services.

Policy S-1.A of the proposed General Plan Safety Element emphasizes the provision of a high level of response to incidents. Policy S-1.C emphasizes timely response to incidents. Policy S-1.D requires the securing of adequate facilities, equipment, and personnel to maintain a high level of police protection services. Collection of planning and development fees, as well as fair share contributions from development, will incrementally fund expansion or construction of new facilities as growth occurs pursuant to the proposed amended General Plan policies.

An analysis of the impacts associated with a possible police protection facility expansion or construction is too speculative at this time because the facility's size, design, and location are not known. Section 15145 states that if a particular impact is too speculative, then its discussion should be terminated. If a police protection facility is to be expanded or constructed, the police facility would be subject to a development review process and environmental review pursuant to CEQA. Environmental review would identify site-specific conditions and physical changes resulting from police station expansion and construction of new stations. Typical impacts would likely include short-term construction activities related to air quality pollutant emissions, temporary traffic detours, and equipment noise. Mitigation would be identified, as necessary, to reduce impacts related to police service facilities expansion or new construction, as mandated by CEQA and implemented by the City through its local environmental review procedures. Impacts related to the expansion and new construction of police protection facilities would be less than significant with implementation of General Plan policies and environmental review standards.

**IMPACT** 4.14.C

Impacts related to the expansion of school facilities to maintain applicable service standards would be less than significant with implementation of existing State regulations.

New housing would be constructed over the long term as population growth occurs pursuant to amended land use policy. New homes would be occupied by a variety of households, including those with school-aged children. According to the proposed General Plan Land Use Element, build out of the planning area is anticipated to increase the number of elementary, middle, and high school students by 1,090.

NMUSD monitors growth in the planning area and updates its facilities plans as needed to identify new facilities needs, including locations, timing, and funding for expanded or new classrooms and related facilities. NMUSD will continue to collect development impact fees as provided for in State law to fund expanded facilities. Moreover, all new non-residential development would be required to pay appropriate impact fees established by the NMUSD Board. Pursuant to State law, collection of fees by school districts is sufficient in mitigating for any potential impacts to school facilities resulting from long-term growth in the community.

Any required expansion of construction of school facilities would be subject to environmental review pursuant to State law and CEQA. Environmental review would identify site-specific conditions and physical changes resulting from school expansion and construction of new fire stations. Typical impacts associated with new and modernized schools includes short-term construction activities related to air quality pollutant emissions, temporary traffic detours, changes in traffic distribution, and noise.

Impacts related to the expansion and new construction of school facilities would be less than significant with implementation of existing State law.

### IMPACT 4.14.D

Impacts related to the expansion and construction of parks to maintain applicable service standards would be less than significant with implementation of General Plan policies and Municipal Code requirements.

As of 2015, approximately 3.66 acres of parkland existed in Costa Mesa for every 1,000 residents. However, the City's goal is to attain and maintain a park standard of 4.26 acres of parkland for every 1,000 residents. Pursuant to State law (State Government Code Section 66477), the City may collect up to 3.0 acres of parkland or in-lieu fees from new residential subdivisions for every 1,000 residents. Accordingly, the City adopted a Local Park Ordinance to implement its park and recreational land dedication requirements (Article 5 – Park and Recreation Dedications). Also, in August of 2015, the City Council adopted an ordinance authorizing collection of a \$5,000 per unit impact fee for all other residential projects (not involving a land division). Other methods for supplementing the City's park system include encouraging the development of private open space and recreational amenities (beyond public park requirements) within large residential projects, and pursuing the joint use (or ultimate use) of utility district lands, such as those owned by County of Orange Flood Control District, for parks and open space.

The City of Costa Mesa currently does not meet its goal of providing 4.26 acres of parkland per 1,000 persons. Parks provide a number of benefits including places to gather, opportunities for exercise and play, and an increased community aesthetic. Failure to provide adequate parkland reduces these benefits and lowers service levels and quality. Additionally, lack of adequate parkland may result in increased use of regional parks and surrounding City parks, thereby lowering the service standard of those parks (see *Cumulative Impacts* for further discussion). Impacts associated with the expansion or construction of parkland facilities may involve air quality, biological resources, cultural resources, noise, and traffic due to short-term construction activities and permanent physical changes to underdeveloped and developed lands.

The Open Space and Recreation Element includes proposals for the acquisition, maintenance, and financing of parkland and open space. These would be implemented by the City primarily through collection of Quimby fees, the new parks fee, and requirements for other public open spaces in commercial development projects. Impacts related to the physical impacts associated with use of existing recreation facilities is addressed in Section 4.15 (Recreation).

As of 2015, the City had an estimated population of 110,524 residents. Based on the City's park standard goal of 4.26 acres for every 1,000 persons, approximately 471 acres of parkland are required to meet the City's goal. Assuming a build-out population of 131,690 residents, 561 acres would need to be acquired to achieve the goal. Over the long term, as the City acquires and develops parkland, localized environmental impacts are likely to occur depending on the conditions and location of the sites involved. Identification and mitigation of potentially significant impacts would occur as part of the City's routine planning and design process for development projects and environmental review pursuant to CEQA.

The proposed amended General Plan designates 1,925 acres as *Open Space and Recreation* throughout the community, of which 1,155 acres are designated as *Open Space-Recreation* on existing parkland. Additionally, Institutional uses including schools, colleges, public facilities, the Civic Center, the Santa Ana River right-of-way, the Fairview Development Center and other public/institutional uses comprise approximately 763 acres of *Open Space* for recreation purposes. Costa Mesa is largely built out, with vacant parcels scattered throughout the City and equaling

only about 20 acres. Given the paucity of vacant land within the planning area, it could be reasonably assumed that acquisition and provision of an additional 561 acres of parkland would not feasible. However, this impact is not considered significant since the possible inability of the City to meet its goal would not result in any direct or indirect environmental impact.

IMPACT 4.14.E Impacts related to the expansion and construction of libraries to maintain applicable service standards would be less than significant with implementation of existing Municipal Code requirements.

Long-term growth in the planning area pursuant to the General Plan Amendments would require incremental library facility expansion or improvement to meet community needs. A facility needs assessment was prepared for the Costa Mesa Public Library system that concluded a new 20,000-square-foot building (which would increase items in the collection from 68,000 to 95,000 items) would be required to meet the long-term demands of the service area. Currently, a new library facility is tentatively planned at the Dungan Library, which would be constructed as part of the new community center (replacing facilities at their current location). The County collects fees to support incremental expansion of library services commensurate with development proposals. Any new or expanded library facilities would be subject to environmental review pursuant to CEQA to identify any potentially significant environmental impacts and, if necessary, identify appropriate mitigation. Typical impacts would likely include short-term construction activities related to air quality pollutant emissions, temporary traffic detours, changes in traffic distribution, and noise. Impacts related to the expansion or construction of library facilities will be less than significant with implementation of existing regulations.

## Mitigation Measures

No mitigation measures are required since no impacts would result.

## References

City of Costa Mesa. *City Council Agenda Report, November 17, 2015.* http://www.costamesaca.gov/ftp/council/agenda/2015/2015-11-17/NB-1.pdf [Accessed December 16, 2015].

City of Costa Mesa. City Website: Libraries. <a href="http://www.costamesaca.gov/index.aspx?page=602">http://www.costamesaca.gov/index.aspx?page=602</a> [Accessed December 15, 20125].

City of Costa Mesa. Fire Department. <a href="http://www.costamesaca.gov/index.aspx?page=81">http://www.costamesaca.gov/index.aspx?page=81</a> [Accessed December 13, 2015].

City of Costa Mesa. General Plan. Safety Element. 2002.

City of Costa Mesa. Police Department Website. <a href="http://www.costamesaca.gov/index.aspx?page=302">http://www.costamesaca.gov/index.aspx?page=302</a> [Accessed December 14, 2015].

City of Costa Mesa. Police Department Website: Crime Statistics (Compiled through October 2015). <a href="http://www.costamesaca.gov/index.aspx?page=382">http://www.costamesaca.gov/index.aspx?page=382</a> [Accessed December 15, 2015].

Electronic Correspondence. Lieutenant Brian Glass. Costa Mesa Police Department. December 21, 2015.

Newport-Mesa Unified School District. Facts at a Glance. <a href="http://web.nmusd.us/factsataglance">http://web.nmusd.us/factsataglance</a> [June 1, 2015].

Orange County Fire Authority <a href="https://www.ocfa.org/Menu/Departments/Operations/OperationsServiceMap.aspx">www.ocfa.org/Menu/Departments/OperationsServiceMap.aspx</a> [Accessed December 13, 2015].

Orange County Sheriff-Coroner's Department: North Operations <a href="http://ocsd.org/divisions/fieldops/north">http://ocsd.org/divisions/fieldops/north</a> [December 15, 2015].

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This section examines whether implementation of the General Plan Amendments could result in substantial adverse environmental impacts due to the need for new or expanded parkland in order to meet the service objectives of the City. The California Department of Fish and Wildlife submitted a comment recommending that the City's Parks and Open Space Element address balancing restored habitat with creating new authorized access or trail creation in the Fairview Park. This comment is addressed under the Planning and Regulatory Framework, Costa Mesa General Plan, Open Space Recreation Policies OSR-3.H through 3.K. Members of the public submitted comments asking that more parks be developed on the City's west side. This is issue is addressed under Impact 4.15.A.

## Existing Conditions

Recreation opportunities in Costa Mesa include a diversity of facilities ranging from highly developed, active recreation sites to low-activity, passive open spaces. Recreational facilities within the City include neighborhood and community parks, community centers, regional recreation parks with hiking trails, golf courses (public and private), schools and colleges with fields and indoor recreation facilities, and bikeways. These recreation places are shown on the draft Land Use Plan included in Section 3.0 (Project Description). While it is recognized that not all institutional uses are readily available for public recreational uses, this inventory is considerable and offers many benefits to the residents of the community. The following sections provide detailed descriptions of the various components of the community's open space and recreation facilities. The existing network of open space and recreational facilities, as well as their size and percentage of the total, is inventoried in Table 4.15-1 (Open Space and Recreation Inventory) (CM 2015).

Table 4.15-1
Open-Space and Recreation Inventory

Type of Facility	Acreage	Percent
Parks and Community Centers	415.19	21
Talbert Regional Nature Preserve	211.00	11
Institutional Uses	763.03	40
OC Fair and Event Center	150.04	8
Open Space Easements	6.19	.3
Golf Courses	379.70	19.7
Totals	1,925.15	100.00
Source: City of Costa Mesa GIS data		

## Parkland/Community Center Inventory

The backbone of the local open space and recreation network is the neighborhood and community park system, making up 21 percent of total open space/recreation in the planning area. These community amenities provide significant opportunities for active recreation, social services, and recreation programs. Currently, the City has 30 neighborhood and community park facilities, which includes community centers located at Balearic Park, Lions Park, and the Costa Mesa Civic Center. These parks range in size from 0.18 acres to 210 acres. The largest community park is 210-acre Fairview Park, while the smallest park consists is 0.18-acre Shalimar Pocket Park. Table 4.15-2 (Park/Community Center Facility Inventory) identifies the size of each park and recreation facility (CM 2015).

## **Regional Recreation Facilities**

The County-owned Talbert Regional Nature Preserve includes 211 acres (approximately 11 percent of the total inventory) of passive open space located in the southwest corner of the City along the Santa Ana river lowlands. Combined, today Canyon Park, Fairview Park, and Talbert Regional Park provide a unique linkage of restored and enhanced natural environments totaling over 490 acres.

Table 4.15-2
Park/Community Center Facility Inventory

r and community center racinty inventory				
Name	Acreage	Name	Acreage	
Balearic Park	10.06	Marina View Park	2.29	
Brentwood Park	2.60	Ketchum-Libolt Park	0.34	
Canyon Park	35.96	Mesa Verde Park	2.73	
Civic Center	2.50	Moon Park	1.67	
Community Gardens	1.22	Paularino Park	2.23	
Del Mesa Park	2.47	Pinkley Park	2.57	
Estancia Park	9.03	Shalimar Park	0.18	
Fairview Park	210.04	Shiffer Park	7.09	
Hammett Sports Complex	18.50	Smallwood Park	3.39	
Gisler Park	4.59	Suburbia Park	0.53	
Harper Park	1.06	Tanager Park	7.41	
Heller Park	2.61	Tewinkle Park	43.67	
Jordan Park	2.48	Vista Park	5.92	
Lindbergh Park	2.00	Wakeham Park	10.43	
Lions Park	12.82	Wilson Park	3.61	
		Total	415.19	

Another major regional open space feature available to Costa Mesa residents (but not included in the above inventory) is the 140-acre Upper Newport Bay Nature Preserve, located east of the City limits along Irvine Avenue, south of University Drive. Components include the Peter and Mary Muth Interpretive Center, trails, and habitat stabilization and enhancement areas.

The Friends of Harbors, Beaches and Parks (FHBP), a non-profit, charitable California corporation organized in 1997 to promote the protection, expansion and enhancement of regional recreation and open space facilities in Orange County, proposes the implementation of the Orange Coast River Park (OCRP). OCRP is envisioned as a coordinated mosaic of the publicly owned and future anticipated dedications of parks and open space along the Santa Ana River. These lands include:

- Costa Mesa's Fairview Park
- The County's Talbert Nature Preserve
- The U.S. Army Corps of Engineers restored/U.S. Fish and Wildlife Service administered ecological reserve
- Lands to be dedicated in conjunction with the entitlement of the Banning Ranch West development project
- The former Pacific Coast Freeway lands declared surplus by Caltrans (between Superior and the West Newport Oil Company property)
- The Huntington Beach Wetlands Conservancy parcel located between Brookhurst and Beach Boulevard

Altogether, these lands comprise approximately 1,000 acres in the central Orange County coastal area, surrounded by a highly urbanized area with a general deficit of public parks and open space.

#### Institutional Uses

The inventory of institutional land uses is as varied as the entire open space and recreation inventory. Institutional uses include public and private school sites, the Orange County Fair and Exposition Center, and Harbor Lawn Cemetery. When the specific use (i.e., cemetery) or ownership (i.e., Vanguard University) precludes use of these sites for public recreation, they still provide the benefits of visual open space or relief from urban development patterns. This category is the largest component of the open space inventory, approximately 40 percent.

Schools and colleges make up nearly three-fourths of the total inventory of institutional uses (506.52 acres). Because these facilities often provide local and community level recreation needs when not in use during school hours, they play a critical role in the citywide open space and recreation inventory. These facilities can augment those provided by the neighborhood and community system and can combine, through formal joint-use agreements, to meet the overall open space and recreation needs of the community. The Orange County Fairgrounds and Exposition Center and the Harbor Lawn Cemetery account for the remaining 189.68 acres of the inventory of institutional uses. Schools within the planning area that provide institutional recreation uses are listed in Table 4.15-3 (School Facility Inventory).

Table 4.15-3
School Facility Inventory

Name	Acreage	Name	Acreage
Public Schools		Pomona Elementary School	7.47
Adams Elementary School	12.83	Rea Elementary School	13.71
Back Bay High School	6.89	Sonora Elementary School	10.00
California Elementary School	30.42	TeWinkle International School	30.00
College Park Elementary School	8.00	Victoria Elementary School	7.29
Costa Mesa High School	67.00	Whittier Elementary School	9.07
Davis Intermediate School	19.00	Wilson Elementary School	9.00
Estancia High School	53.59	Woodland Elementary School	9.00
Harper Elementary School	9.16	Colleges	
Woodland Elementary School	10.00	Coastline Community College 9.97	
Kaiser Elementary School	18.00	Orange Coast College	64.40
Killybrooke Elementary School	14.28	Vanguard University	47.06
Lindbergh Elementary School	9.20	Other	
Mesa Verde School	10.00	Orange County Fairgrounds	149.47
Parsons School	10.00	Harbor Lawn Cemetery	38.00
Paularino Elementary School	11.18	Total	696.20

#### **Open Space Easements**

While comprising the smallest portion of the total open space inventory (0.3 percent), two existing open space easements provide significant open space benefits because of their location in the most densely developed section of the City. The 2.9-acre easement within Town Center provides a grassy, park-like, open space feature which bisects the development in an east-west direction. The Lakes easement (3.29 acres) located in the Lakes Pavilions Shopping Center provides a more urban feel of hardscape and an open water element which unifies the individual components of this mixed use area (City of Costa Mesa Planning Commission 2015).

#### **Golf Courses**

Two golf courses within the City provide 20 percent of the total citywide open space inventory: the public Costa Mesa Golf and Country Club (240 acres) and the private Mesa Verde Country Club (139 acres). An additional 129 acres of private golf course area is provided by the Santa Ana Country Club, located outside of City limits but within the City's sphere of influence.

#### **Bikeways**

Although not included in the open space inventory, the City's bikeway network is a significant recreation facility. The network includes a series of local bike lanes, routes, and trails, as well as the regional Santa Ana River Bike Trail. The bikeway system provides access between a majority of the existing local open space and recreation sites and opportunities to access surrounding regional facilities, especially local beaches. Bikeways also offer opportunities for an alternate transportation mode for commuters.

#### Park Standards - Level of Service

Park standards determine the acres of parkland the City should develop and maintain based on population levels and objectives for recreation facilities. As on 2015, the City had a park standard of 3.66 acres of parkland for every 1,000 residents. However, the City's goal is to attain and maintain a park standard of 4.26 acres per 1,000 residents (CM 2015). In determining this standard, the City only considered community parks and community centers, which amount to 415 acres for a 2015 population of approximately 110,524. The goal represents 470 acres for the 2015 population. Thus, the City has a deficit of 66 acres. In early 2015, the City initiated a comprehensive update of its Parks and Recreation Master Plan to look critically at and plan for long-term park needs (CM DPR 2015).

## Planning and Regulatory Framework

#### **Quimby Act (Government Code Section 66477)**

The Quimby Act (Government Code Section 66477), enacted in 1975, created a framework that allows cities and counties to provide parks for growing communities. The Quimby Act authorizes jurisdictions to adopt ordinances that require parkland dedication or payment of in-lieu fees as a condition of approval of residential subdivisions. The Quimby Act also specifies acceptable uses and expenditures of such funds, such as allowing developers to set aside land, donate conservation easements, or pay direct fees for park improvements. The City of Costa Mesa has adopted a local ordinance implementing the provisions of the Quimby Act. The ordinance requires dedication of land, payment of fees in-lieu of parkland dedication, or a combination thereof at a rate of three acres of parkland per 1,000 residents for proposed residential subdivisions.

The City also collects parkland fees as part of its Development Impact Fee program to fund the acquisition and/or improvement of parkland. This funding may not be used for ongoing operational funding since it is intended to provide for additional parkland to offset impacts associated with new development (other than residential subdivisions). These parkland impact fees are applicable to both residential and non-residential developments.

#### State Public Park Preservation Act 1971

The Public Park Preservation Act of 1971 (California Public Resources Code, Sections 5400-5409) states that any jurisdiction acquiring parkland for non-park purposes shall either pay compensation that is sufficient to acquire substantially equivalent substitute parkland, or provide substitute parkland of comparable characteristics.

## Thresholds of Significance

As identified in Appendix G of the Guidelines for Implementation of CEQA, the General Plan Amendments could result in a significant impact if the project:

A. Increases the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

B. Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

## Environmental Impacts



Deterioration of existing parks and recreation facilities due to increased use would be less than significant with implementation of policies of the Draft Open Space and Park Element.

The increase in the resident population associated with long-term implementation of the General Plan and its land use policies could result in increased use of existing parks and recreation facilities if additional facilities are not added to the City's inventory.

Substantial deterioration of existing facilities could occur if the level of usage intensifies significantly, the maintenance of affected facilities does not keep pace with intensified use, and no new park facilities are provided to meet increased demand. The draft Parks and Open Space Element includes the following policies regarding the acquisition of new parkland in Costa Mesa:

GOAL OSR-1: BALANCED AND ACCESSIBLE SYSTEM OF PARKS AND OPEN SPACE. Provide a high-quality environment through the development of recreation resources and preservation of open space that meets the community demands in Costa Mesa.

<u>Objective OSR-1:</u> Maintain and preserve existing parks and strive to provide additional parks, public spaces, and recreation facilities that meet the community's evolving needs.

### Adequate Neighborhood and Community Park Recreational Facilities

- Policy OSR-1.A: Maintain a system of Neighborhood and Community Parks that provide a variety of active and passive recreational opportunities throughout the City.
- Policy OSR-1.B: Provide parks and recreation facilities appropriate for the individual neighborhoods in which they are located and reflective of the needs and interests of the population they serve.

#### Acquisition of New Parkland

- Policy OSR-1.C: Pursue the acquisition and development of pocket and neighborhood parks within parkdeficient areas.
- Policy OSR-1.D: Prioritize the acquisition of land for parks in underserved neighborhoods.
- Policy OSR-1.E: Develop a program to encourage private donations for open space acquisition, protection, improvement, or maintenance.
- Policy OSR-1.F: Maximize public space by requiring plazas and public gathering spaces in private developments that can serve multiple uses, including recreation and social needs.
- Policy OSR-1.G: Provide maximum visibility and accessibility for future public parks by locating facilities adjacent to public streets.

Policy OSR-1.H: Adjust and update development fee programs to accumulate funds for the acquisition and improvement of parks and recreation facilities that are commensurate with identified need and population growth.

Park maintenance levels and any future park improvements to address deficiencies or expand recreational opportunities would be determined through the City's normal budgeting program, which varies year to year. The decision of when to fund new facilities and improvements will be guided by the new Parks Master Plan expected to be done in the spring of 2016 (CM DPR 2015). If adequate funding is not allocated for park maintenance or new parks are not constructed, deterioration of existing facilities has the potential to occur. However, given the City's record of commitment to park facilities maintenance and the considerable acreage of regional and institutional parkland nearby (Fairview Park and Talbert Regional Park, school playgrounds) that supplement City-owned parks, this potential impact is not considered significant.

The current inventory of parks and community centers (415 acres) provide 3.66 acres of such parkland for every 1,000 residents (assuming a population of 110,524). The City's goal is to have 4.26 acres of parks and community centers for every 1,000 residents. At present, 66 acres of parkland are needed to meet the level of service goal. The build-out population is projected to be approximately 131,690; thus, 146 acres of new City-owned parkland would be needed to meet the level of service goal over the long term.

The deficiency of parkland is notable in certain areas of the City, as shown in Figure OSR-2 (Park Accessibility). These areas are referred to as "Park Priority Areas" because parks are needed to serve residents in these areas. Two of the Overlays which are the subject of the General Plan Land Use Amendments are included in a Park Priority Area: Harbor Boulevard–Mixed Use Overlay and Harbor Boulevard–Residential Incentive Overlay.

As indicated under Existing Conditions above, Costa Mesa currently is deficient in park and community centers relative to the goal of 4.26 acres per 1,000 residents, and this deficiency can be expected to continue with adoption of the General Plan Amendments. While residential development activity would generate funds for the development of new park facilities through Quimby fees, and all new development projects would require payment of Development Impact Fees (a portion of which would fund parkland acquisition and park maintenance), the degree to which these fees would actually result in new park facilities where they are needed is not known. To ensure that park-deficient areas are targeted for park development, the City has added Policy OSP- to the Open Space and Recreation Element as follows:

Policy OSR-1.C: Pursue the acquisition and development of pocket and neighborhood parks within parkdeficient areas, as identified in Figure OSR-3: Planning Areas and Underserved Park Areas.

With inclusion of this policy, impact would be less than significant.

IMPACT 4.15.B Impacts related to the expansion and construction of recreational facilities would be less than signflicant since the General Plan Amendments do not specifically provide for new park facilities.

The General Plan Amendments do not result in the direct construction or expansion of any recreational facility because the project does not authorize any specific land development activity. In addition, the Land Use Element does not specifically identify any location for the creation of new recreational facilities. As indicated above, Land Use Element and Open Space and Recreation Element policies indicate the City's intent to seek out opportunities to create new parklands. However, although the Open Space and Recreation Element identifies priority areas of new community parks, the proposed General Plan Land Use Map does not specifically identify locations for new parks or other recreational facilities. Thus, no construction of park space will result directly from General Plan implementation, and impact would be less than significant..

## Mitigation Measures

No mitigation measures are required.

## References

City of Costa Mesa Dept. of Parks and Recreation. 2015. Fairview Park Citizens Advisory Committee. On website <a href="http://www.costamesaca.gov/index.aspx?page=1619">http://www.costamesaca.gov/index.aspx?page=1619</a>, accessed on December 10, 2015.

City of Costa Mesa 2015 General Plan Update, Draft Open Space and Recreation Element, 2015.

City of Costa Mesa Fairview Park Master Plan March 1998, Revised 2001, 2002, and 2008.

City of Costa Mesa General Plan Land Use Map, July 2004.

City of Costa Mesa Planning Commission. 2015. Planning Commission Agenda Report, August 10, 2015.

This section analyzes the potential impacts associated with long-term implementation of the General Plan Amendments. Baseline (2015) traffic conditions are described and compared to projected traffic conditions associated with build out pursuant to the Land Use Policy Map and planned and funded circulation improvements. The analysis also considers regional circulation facilities, air traffic, parking, roadway design, alternative transportation, and emergency access issues. The following discussion draws from City of Costa Mesa General Plan Circulation Element technical report prepared by Stantec Consulting Services, Inc. (Stantec) and the Orange County Congestion Management Program (CMP). The study prepared by Stantec is included in Appendix E. Comments were submitted by Caltrans and members of the public in response to circulation of the Notice of Preparation that raised concerns about increased traffic congestion and impacts on the freeways. These comments are addressed in the discussion throughout this Section.

Study intersections and roadway segments are identified in Exhibit 4.16-1 (Studied Intersections) and Exhibit 4.16-2 (Studied Roadway Segments).

## 4.16.1 Existing Circulation System

#### **Circulation System**

The circulation system in Costa Mesa consists of a multi-modal system designed to accommodate motorized and non-motorized forms of transportation to meet a variety of mobility needs. The existing circulation system within the planning area is described below in terms of pedestrian, bicycle, rail, automobile, and airplane transportation modes.

#### Roadways and Freeways

The existing roadway system within the City, together with the number of lanes (midblock) on individual segments of the circulation system, are illustrated in Exhibit CIR-1, Existing Roadway System of the General Plan. Regional circulation facilities serving the City include the San Diego Freeway (I-405), which traverses east-west across the northern portion of the City; the Corona del Mar Freeway (SR-73), which begins at the San Diego Freeway between Fairview Road and Bear Street and extends southeast where it becomes the San Joaquin Hills Transportation Corridor; and the Costa Mesa Freeway (SR-55), which enters at the northeast corner of the City and extends southwest before it terminates and transitions into Newport Boulevard south of 19th Street.

The City's circulation system is greatly affected by the three freeways mentioned above. The San Diego Freeway carries the largest volume of traffic, which in 2014 varied from approximately 244,000 vehicles per day just west of Bristol Avenue to over 319,000 vehicles per day at Harbor Boulevard.¹ The Costa Mesa Freeway carries approximately 167,000 vehicles per day at its junction with the San Diego Freeway and about 100,000 vehicles per day at its terminus just north of 19<sup>th</sup> Street. The Corona del Mar Freeway differs from the other two freeways in the City because it becomes a toll facility just east of the City limits. Because of this, it carries lower volumes of regional traffic than toll-free highways. Traffic volumes on the Corona del Mar Freeway in 2014 were approximately 191,000 vehicles per day at the junction with the Costa Mesa Freeway.

North/south arterial facilities serving the central part of the City include Harbor Boulevard, Fairview Road, and Bristol Street. Each is a six-lane facility for the most part, currently carrying volumes ranging from 28,000 to 54,000 vehicles per day in 2014.<sup>2</sup> Other four-lane north/south facilities include Placentia Avenue in the west, Bear Street in the north, and Irvine Avenue to the east, each currently carrying volumes ranging from 11,000 to 28,000 vehicles per day.

Six-lane facilities serving east/west travel include Sunflower Avenue east of Bear Street and Adams Avenue west of Fairview Road, currently carrying volumes ranging from 17,000 to 38,000 vehicles per day in 2014, respectively. Several four-lane arterials also serve east/west traffic, including Baker Street, Fair Drive, Wilson Street, Victoria Street, west 19th Street, South Coast Drive, Sunflower Avenue (west of Bear Street) and 17th Street, each currently carrying daily volumes in the range of 13,000 to 31,000 vehicles per day in 2014.

The City is bordered on the east and west by topographical features that limit the number of access points from areas outside the City. Running along the western City boundary is the Santa Ana River. Within Costa Mesa, the Santa Ana River currently has crossings only at Adams Avenue and Victoria Street. Besides I-405, these two roadways represent the only locations where vehicles traveling through Costa Mesa can access the cities of Huntington Beach and Fountain Valley to the west using City streets. Just east of the City is the Upper Newport Bay Ecological Preserve that limits travel to the east. Vehicles traveling from Costa Mesa and the eastern portion of the City of Newport Beach must use either Pacific Coast Highway to the south or Bristol Street to the north to bypass the bay.

The layout of the City's circulation system is most notable for its two differing grid patterns. Streets east of and including Newport Boulevard were constructed at approximately 45-degree angles from the traditional north/south streets in north Orange County. This results in odd-angled intersections along Newport Boulevard, as well as high traffic volumes where north/south streets like Harbor Boulevard intersect with Newport Boulevard.

Several major east/west arterials are interrupted by obstacles which prevent a continuous roadway from one end of the City to the other. Many streets east of Newport Boulevard do not align with their westerly extensions. For example, West 18th Street becomes Rochester Street upon crossing Newport Boulevard. Continuous east/west circulation is disrupted where Rochester Street ends just east of Orange Avenue. East 18th Street, which extends uninterrupted to Irvine Avenue, is located one block north of West 18th /Rochester Street. Adams Avenue and Baker Street provide other examples of the discontinuity in east/west travel. Adams Avenue transitions into a residential neighborhood east of Fairview Road, and Baker Street similarly terminates into the Mesa Verde residential area west of Harbor Boulevard. These configurations result in high turning-movement volumes between Baker Street and Adams Avenue on Harbor Boulevard and Fairview Road. Similarly, Fair Drive terminates at Harbor Boulevard, resulting in westbound traffic being forced to turn to access Adams Avenue, Wilson Street, or Victoria Street to continue traveling westbound.

For northbound/southbound traffic in the northern portion of the City, I-405 is an obstruction, with only four crossings between the Santa Ana River and SR-55. These crossings are at Harbor Boulevard, Fairview Road, Bear Street, and Bristol Street. The north/south arterials are also used by regional traffic traveling between Newport Beach to the south and northern cities such as Santa Ana.

#### **Non-Motorized Transportation Routes**

#### Bicycle Facilities

Caltrans has developed statewide standards and definitions for the planning, design, and implementation of bicycle facilities. The following summarizes these standards.

Class I (Bicycle Path) – A bicycle path is a special facility that is designed exclusively for the use of bicycles. They are physically separated from motor vehicle traffic by a physical barrier or landscaped area. Bicycle paths are more often used for recreation and are generally provided in Orange County along river channels and former railroad rights-of-way.

Class II (Bicycle Lane) – A bicycle lane is a facility where a portion of the paved roadway area is marked as a special lane for use by bicycles only. It is identified by signage along the street that denotes "BIKE LANE," pavement

markings, and lane line markings. Motor vehicles are prohibited from driving in bike lanes except when turning to and from driveways, intersections, or on-street parking.

Class III (Bicycle Route) – A bicycle route is defined as a bicycle way designated within a public right-of-way. The purpose of the bicycle route is to encourage a sharing of the roadway between vehicles and bicycles. They are identified by signage along the street that denotes "BIKE ROUTE." No other pavement markings are employed with these facilities. Bicycle facilities within and near the City of Costa Mesa are primarily the Class I type (path/trail). A major area Class I facility, the Santa Ana River Trail, runs along the east bank of the river.

#### Regional Bicycle Facility Planning

The Orange County Transportation Authority (OCTA) developed the Metrolink Station Non-motorized Accessibility Strategy to identify needs and opportunities for improvements that enhance non-motorized transportation (walking and biking) access to and from Orange County's Metrolink stations. The Accessibility Strategy builds upon other efforts by OCTA and local cities to expand transportation choices. The Accessibility Strategy will serve as a reference for local cities to improve safety, address existing barriers and increase the number of Metrolink riders who walk or bicycle to/from the stations through changes to the physical environment. The plan's objectives include:

- Evaluating current non-motorized accessibility at the Metrolink stations using a set of defined metrics and identify areas for improvement.
- Recommending improvements to facilitate, support and enhance pedestrian and bicyclist access to the Metrolink stations.
- Providing local agencies with guidance on implementing the recommendations and identify potential funding opportunities.

#### **Pedestrian Circulation**

Pedestrian walking areas are an integral part of a city's circulation system. The connectivity of a sidewalk system, in terms of an overall network and links to neighboring major land uses, is a primary factor in pedestrian mobility. A sidewalk is an area of refuge from vehicle traffic that provides a safe route for pedestrian transport. The Metrolink Station Non-motorized Accessibility Strategy described above would include strategies to improve pedestrian circulation in the planning area.

#### **Public Transit**

Public transportation in Costa Mesa, as defined here, consists of fixed route bus service and demand response service. This latter type of service is an advance reservation, shared ride transportation service for senior residents and disabled of any age and their attendants. Metrolink provides regional commuter rail service to the planning area. The nearest Metrolink station is located in Tustin to the east.

**Public Bus Transit Service** – Orange County Transportation Authority (OCTA) is the public transit agency serving Costa Mesa, operating fixed-route bus services throughout the planning area. OCTA is the only provider of public bus transportation within the City, with over 10 separate bus routes serving Costa Mesa.

#### Railways

**Public Commuter Rail Service** - Metrolink, the regional commuter rail service operated by the Southern California Regional Rail Authority, does not have direct service to Costa Mesa. Metrolink serves commute trips to downtown Los Angeles and Orange County from Ventura, Los Angeles, Riverside, San Bernardino, and Orange counties. The Metrolink station closest to Costa Mesa is the Tustin station at Viaduct Boulevard and 2<sup>nd</sup> Street. This station is

located on the Orange County Line and provides access to the Inland Empire/Orange County Line, Ventura Line, and 91 Line Metrolink trains. The Orange County Line provides service to the west of San Bernardino, through the Pomona Valley and San Gabriel Valley, with a western terminus at Union Station in Los Angeles. The Inland Empire/Orange County Line provides service through Riverside, Colton, and Orange County, with a southern terminus in San Juan Capistrano. The 91 Line parallels the SR-91 freeway within the Inland Empire and also serves north Orange County and Fullerton, with its western terminus at Union Station in Los Angeles.

**Urban Rail** - No urban rail facilities currently exist within the planning area, and there are currently no plans to construct and urban rail facilities at this time.

#### <u>Airports</u>

No aviation facilities exist within the planning area. However, scheduled air carrier services are provided at Orange County-Santa Ana-John Wayne Airport (SNA) located immediately adjacent to the City to the southeast. John Wayne is an international airport, with flights including those by charter, corporate, and general aviation users. In 2014, more than nine million passengers were served at the airport.

#### **Existing Traffic Conditions**

The traffic analysis report prepared for the project by Stantec analyzed existing traffic operating conditions for select roadway segments and intersections in the City of Costa Mesa.<sup>3</sup> A set of performance criteria was utilized to determine existing and future operating levels of service (LOS) on the Costa Mesa roadway circulation system. Traffic LOS is designated "A" through "F," with LOS "A" representing free-flow conditions and LOS "F" representing severe traffic congestion. LOS is a qualitative approach to describing roadway performance based on the V/C ratio. The lower the ratio, the better the segment of roadway performs, meaning freer-flowing traffic. Traffic congestion occurs as the number rises and approaches 1.0.

Table 4.16-1 (Level of Service Descriptions – Urban Streets and Intersections) summarizes LOS descriptions for urban streets and intersections, as well as the V/C ranges that correspond to LOS "A" through "F" for arterial roads. The V/C ranges listed in the table are designated in the current Costa Mesa General Plan Circulation Element, as well as the Orange County Congestion Management Program (CMP).

Table 4.16-1 Level of Service Descriptions – Urban Streets and Intersections

Level of Service	Description	Volume/Capacity (V/C) Range
А	LOS A describes primarily free-flow operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.	.0060
В	LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted, and control delay at the intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.	.6170
С	LOS C describes stable operation. The ability to maneuver and change lanes at mid- segment locations may be more restricted than at LOS B. Longer queues at the intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.	.7180
D	LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the intersections. The travel speed is between 40% and 50% of the base free-flow speed.	.8190

E	LOS E is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the intersections. The travel speed is between 30% and 40% of the base free-flow speed.	.91 – 1.00			
F	LOS F is characterized by flow at extremely low speed. Congestion is likely occurring at the intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed.	Above 1.00			
Source: Or	Source: Orange County CMP and the Highway Capacity Manual 2010, Transportation Research Board, National Research Council				

The arterial roadway criteria involve the use of average daily traffic (ADT) V/C ratios based on the ADT roadway capacities listed in Table 4.16-2 (Arterial Roadway ADT Capacities). ADT capacities are designated for two categories of arterial roadways: standard arterials and augmented arterials. The augmented arterial designation applies to roadways in the City where enhancements that provide increased operating capacity are in place or are planned. Such enhancements include various types of implemented improvements such as additional lanes at intersections, traffic signal coordination, and other intelligent transportation system (ITS) technologies.

> Table 4.16-2 Arterial Roadway ADT Capacities

	711.00.101.11.00.00	Average Deily Tre	ffic (ADT) Consoits
		3 3	ffic (ADT) Capacity
Roadway Classification	Lanes	Standard Arterials (a)	Augmented Arterials (b)
Major Arterials	10	93,000	112,000
	8	75,000	90,000
	6	56,000	68,000
	4 (c)	37,000	45,000
	3 (c)	28,000	34,000
	2 (c)	19,000	23,000
Primary Arterial	4	38,000	45,000
Secondary Arterial	4	25,000	30,000
Divided Collector Arterial	2-4	22,000	Not Applicable
Collector Arterial	2	12,500	Not Applicable
Notes and Sources: (a) Orange Count	v Transportation Authority (	OCTA) Master Plan of Arterial Highways	(MPAH)

(a) Orange County Transportation Authority (OCTA) Master Plan of Arterial Highways (MPAH)

(b) City of Costa Mesa Transportation Services Division

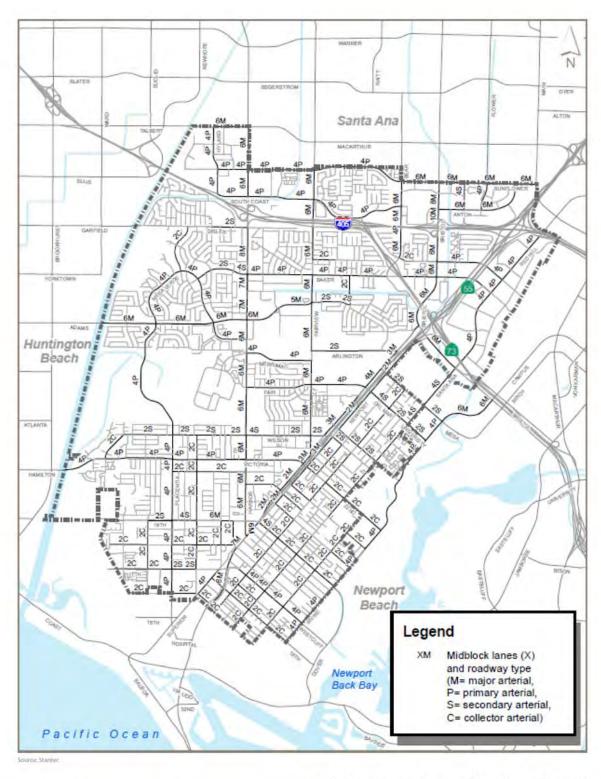
(c) This designation applies to one-way Newport Boulevard adjacent to the SR-55 freeway.

The ADT roadway capacities applied in the traffic study are considered planning-level capacities that are useful in identifying potential LOS deficiencies within a circulation system. However, the actual performance of an arterial roadway segment is more accurately determined by analyzing the peak-hour traffic conditions at the intersections along the roadway since roadway congestion typically occurs at the intersections. As such, an arterial roadway segment where the existing or future ADT volume exceeds the theoretical maximum ADT capacity is not considered to be a deficiency if the intersections along that roadway segment operate at acceptable levels of service during the peak A.M. and P.M. time periods based on the intersection performance criteria described below.

The intersection performance criteria applied in the traffic study involve the use of peak hour intersection capacity utilization (ICU) values. The ICU calculation methodology adopted by the City of Costa Mesa applies a saturation flow rate of 1,700 vehicles per hour per intersection lane and a 0.05 clearance interval, which is consistent with the Orange County CMP. The ICU ranges that correspond to LOS "A" through "F" are the same as the V/C ranges shown in Table 4.16-1. LOS "D" (ICU not to exceed .90) is the performance standard for City of Costa Mesa intersections.

The performance criteria utilized in the traffic study satisfies the current requirements of CEQA, and provides a realistic measure of arterial system performance. It is also used as a circulation system performance measure by Caltrans and by all local jurisdictions in Orange County, since it is a requirement of both the countywide Growth Management Plan and the CMP.

Existing traffic conditions in the City were identified based on ADT counts collected for midblock arterial roadway segments and A.M. and P.M. peak-hour turn movement counts collected at intersections located in the City. The existing roadway circulation system in Costa Mesa is illustrated in Exhibit 4.16-1 (Existing Roadway System), together with existing midblock lanes and roadway designations on arterial roadways. The existing ADT volumes on the City's arterial roadway system are illustrated in Exhibit 4.16-2 (Existing ADT Volumes).



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Exhibit 4.16-1 Existing Roadway System

Costa Mesa General Plan Update Costa Mesa, California

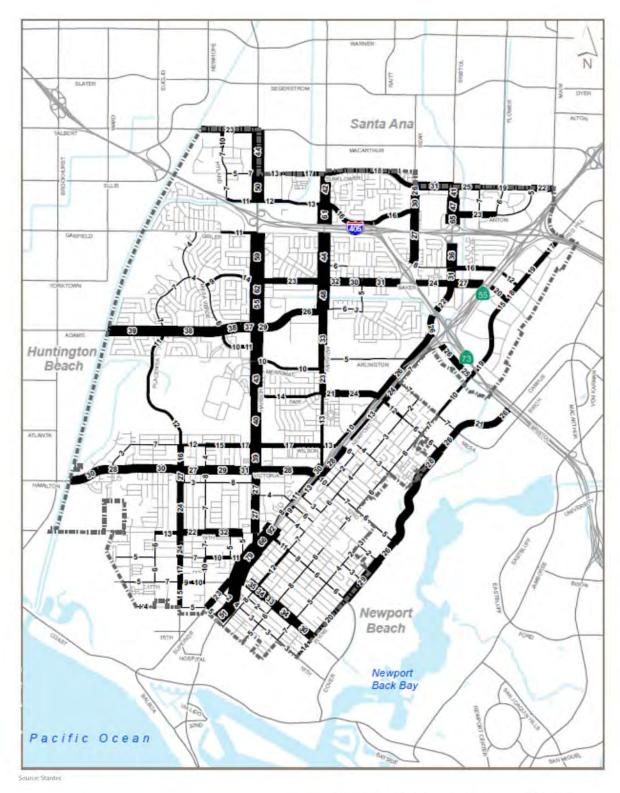


Exhibit 4.16-2 Existing ADT Volumes

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Costa Mesa General Plan Update Costa Mesa, California Existing ADT and V/C ratios on the City's arterial roadway system are summarized in Table 4.16-3 (Existing ADT Volumes and V/C Ratios). As Table 4.16-3 indicates, the existing ADT volumes on each of the roadway segments that were analyzed are within theoretical maximum ADT capacity of each segment, with the exception of Wilson Street west of Harbor Boulevard and West 19<sup>th</sup> Street west of Placentia Avenue. However, these two locations are not considered to be actually deficient because, as is demonstrated below, the intersections analyzed along those roadway segments currently operate at acceptable levels of service during the A.M. and P.M. peak hours.

Table 4.16-3 Existing ADT Volumes and V/C Ratios

Lanes and					
	Roadway	ADT			
Roadway	Туре	Capacity	ADT	ADT V/C	
Adams w/o Placentia	6M-A	68,000	39,000	.57	
Adams e/o Placentia	6M-A	68,000	38,000	.56	
Adams e/o Mesa Verde E.	6M-A	68,000	38,000	.56	
Adams w/o Harbor	6M-A	68,000	37,000	.54	
Adams e/o Harbor	6M-A	68,000	29,000	.43	
Adams w/o Fairview	5M-A	57,000	26,000	.46	
Anaheim s/o 19 <sup>th</sup>	2C	12,500	5,000	.40	
Anaheim n/o Superior	2C	12,500	6,000	.48	
Anton e/o Bristol	6M	56,000	23,000	.41	
Anton s/o Sunflower	6M	56,000	5,000	.09	
Arlington e/o Fairview	2S	12,500	5,000	.40	
Ave of the Arts n/o Anton	4S	25,000	7,000	.28	
Baker e/o Mesa Verde	2S	12,500	9,000	.72	
Baker w/o Harbor	4S	25,000	14,000	.56	
Baker e/o Harbor	4P-A	45,000	19,000	.42	
Baker w/o Fairview	4P-A	45,000	23,000	.51	
Baker e/o Fairview	4P-A	45,000	32,000	.71	
Baker e/o Coolidge	4P-A	45,000	30,000	.67	
Baker w/o Bear	4P-A	45,000	31,000	.69	
Baker w/o Randolph	4P-A	45,000	24,000	.53	
Baker w/o SR-55	4P-A	45,000	27,000	.60	
Baker w/o Pullman	4P-A	45,000	20,000	.44	
Baker e/o Pullman	5M-A	57,000	15,000	.26	
Bay e/o Harbor	2C	12,500	4,000	.32	
Bay e/o Newport	2C	12,500	6,000	.48	
Bear s/o Sunflower	6M	56,000	26,000	.46	
Bear n/o South Coast	6M	56,000	30,000	.54	
Bear n/o Paularino	4P	38,000	27,000	.71	
Bristol s/o Sunflower	6M-A	68,000	41,000	.60	
Bristol n/o Anton	8M-A	90,000	47,000	.52	
Bristol s/o Anton	10M-A	112,000	65,000	.58	
Bristol n/o Paularino	6M	56,000	36,000	.64	
Bristol n/o Baker	6M	56,000	31,000	.55	
Bristol n/o Bear	6M	56,000	22,000	30	
Bristol s/o Bear	6M	56,000	26,000	.46	
Bristol e/o Newport	6M	56,000	26,000	.46	
Bristol w/o Red Hill	6M	56,000	25,000	.45	
Canyon n/o Victoria	2C	12,500	3,000	.24	
Country Club n/o Mesa Verde	2C	12,500	4,000	.32	
Del Mar w/o Orange	4S	25,000	12,000	.48	
Del Mar w/o Santa Ana	2S	12,500	6,000	.48	

Table 4.16-3
Existing ADT Volumes and V/C Ratios

EXISTING.	ADT Volumes and V	C Ralius		
	Lanes and			
	Roadway	ADT	ADT	A DT MO
Roadway	Туре	Capacity	ADT	ADT V/C
Del Mar/University w/o Irvine	2S	12,500	6,000	.48
El Camino e/o Fairview	2S	12,500	6,000	.48
El Camino w/o Mendoza	2S	12,500	3,000	.24
Elden n/o 22 <sup>nd</sup>	2C	12,500	2,000	.16
Fair e/o Harbor	4P	38,000	14,000	.37
Fair e/o Fairview	4P	38,000	21,000	.55
Fair w/o Newport	4P	38,000	24,000	.63
Fairview n/o South Coast	6M-A	68,000	42,000	.62
Fairview s/o South Coast	6M-A	68,000	61,000	.90
Fairview s/o I-405	6M-A	68,000	44,000	.65
Fairview s/o Baker	6M-A	68,000	48,000	.71
Fairview s/o Adams	6M-A	68,000	33,000	.49
Fairview n/o Fair	6M-A	68,000	23,000	.34
Fairview n/o Wilson	6M-A	68,000	13,000	.19
Fairview s/o Wilson	4P-A	45,000	12,000	.27
Gisler w/o Harbor	2S	12,500	11,000	.88
Hamilton e/o Placentia	2C	12,500	3,000	.24
Hamilton w/o Harbor	2C	12,500	8,000	.64
Harbor n/o Sunflower	6M-A	68,000	44,000	.65
Harbor n/o South Coast	6M-A	68,000	50,000	.74
Harbor n/o Baker	8M-A	90,000	59,000	.66
Harbor n/o Village	7M-A	79,000	62,000	.78
Harbor n/o Adams	7M-A	79,000	55,000	.70
Harbor s/o Adams	6M-A	68,000	47,000	.69
Harbor n/o Fair	6M-A	68,000	43,000	.63
Harbor n/o Wilson	6M-A	68,000	40,000	.59
Harbor n/o Victoria	6M-A	68,000	39,000	.57
Harbor n/o Bay	6M-A	68,000	27,000	.40
Harbor n/o 19 <sup>th</sup>	6M-A	68,000	27,000	.40
Harbor s/o 19 <sup>th</sup>	6M-A	68,000	18,000	.26
Hyland s/o MacArthur	4P	38,000	10,000	.26
Hyland s/o Scenic	4P	38,000	7,000	.18
Hyland s/o Sunflower	4P	38,000	7,000	.18
Industrial w/o Newport	2C	12,500	5,000	.40
Irvine s/o Bristol	6M	56,000	26,000	.46
Irvine n/o Mesa	6M	56,000	21,000	.38
Irvine n/o University	4P	38,000	26,000	.68
Irvine n/o 22 <sup>nd</sup>	4P	38,000	28,000	.74
Irvine s/o 22 <sup>nd</sup>	4P	38,000	26,000	.68
Irvine n/o 19 <sup>th</sup>	4P	38,000	29,000	.76
Irvine n/o 17 <sup>th</sup>	4P 4P	38,000	29,000	.53
Irvine n/o 16 <sup>th</sup>	4P 4P	38,000	14,000	.37
MacArthur w/o Harbor	6M			.37
		56,000	23,000	
Merrimac e/o Harbor	4P	38,000	10,000	.26
Merrimac w/o Fairview	4P	38,000	10,000	.26
Mesa w/o Orange	2S	12,500	7,000	.56
Mesa e/o Santa Ana	2S	12,500	7,000	.56
Mesa Verde W. n/o Adams	4P	38,000	7,000	.18

Table 4.16-3
Existing ADT Volumes and V/C Ratios

Existing	g ADT Volumes and V/	C Ratios		
Roadway	Lanes and Roadway Type	ADT Capacity	ADT	ADT V/C
Mesa Verde W. w/o Country Club	4P	38,000	7,000	.18
Mesa Verde E. n/o Baker	4P	38,000	4,000	.11
Mesa Verde E. n/o Adams	4P	38,000	6,000	.16
Mesa Verde E. s/o Adams	4P	38,000	10,000	.26
Mesa Verde E. w/o Harbor	4P	38,000	11,000	.29
Monrovia s/o 19 <sup>th</sup>	2C	12,500	6,000	.48
Monrovia n/o 17 <sup>th</sup>	2C	12,500	6,000	.48
Newport SB n/o Mesa	3M-A	34,000	26,000	.76
Newport SB n/o Fair/Del Mar	4M-A	45,000	24,000	.53
Newport SB n/o Santa Isabel	3M-A	34,000	10,000	.29
Newport SB n/o Victoria	3M-A	34,000	30,000	.88
Newport SB s/o Victoria	2M-A	23,000	11,000	.48
Newport SB s/o Ford	2M-A	23,000	8,000	.35
Newport NB n/o Mesa	2M-A	23,000	7,000	.30
Newport NB n/o Fair/Del Mar	3M-A	34,000	24,000	.71
Newport NB n/o Santa Isabel	2M-A	23,000	13,000	.57
Newport NB n/o 22 <sup>nd</sup>	3M-A	34,000	28,000	.82
Newport NB s/o 22 <sup>nd</sup>	3M-A	34,000	13,000	.38
Newport NB s/o 20th	2M-A	23,000	9,000	.39
Newport s/o 19 <sup>th</sup>	7M-A	79,000	66,000	.84
Newport n/o 17 <sup>th</sup>	7M-A	79,000	79,000	1.00
Newport n/o Industrial	6M-A	68,000	51,000	.75
Ogle e/o Orange	2C	12,500	2,000	.16
Orange n/o Del Mar	2C	12,500	2,000	.16
Orange n/o Santa Isabel	2C	12,500	3,000	.24
Orange n/o 22 <sup>nd</sup>	2C	12,500	4,000	.32
Orange n/o 21st	2C	12,500	6,000	.48
Orange n/o 19 <sup>th</sup>	2C	12,500	7,000	.56
Orange n/o 17 <sup>th</sup>	2C	12,500	12,000	.96
Orange n/o 16 <sup>th</sup>	2C	12,500	8,000	.64
Orange n/o 15 <sup>th</sup>	2C	12,500	5,000	.40
Park s/o 19 <sup>th</sup>	2C	12,500	5,000	.40
Paularino e/o Fairview	2C	12,500	6,000	.48
Paularino e/o Bear	2C	12,500	8,000	.64
Paularino e/o Bristol	4P	38,000	16,000	.42
Paularino w/o Red Hill	4P	38,000	12,000	.32
Placentia s/o Adams	4P	38,000	11,000	.29
Placentia n/o Wilson	4P	38,000	12,000	.32
Placentia n/o Victoria	4P	38,000	16,000	.42
Placentia n/o Hamilton	4P	38,000	27,000	.71
Placentia s/o Hamilton	4P	38,000	24,000	.63
Placentia s/o 19 <sup>th</sup>	4P	38,000	24,000	.63
Placentia n/o 17 <sup>th</sup>	4P	38,000	17,000	.45
Placentia n/o 16 <sup>th</sup>	4P	38,000	15,000	.39
Pomona n/o Victoria	2C	12,500	4,000	.32
Pomona n/o Hamilton	2C	12,500	8,000	.64
Pomona n/o 19 <sup>th</sup>	2C	12,500	7,000	.56
Pomona n/o 18 <sup>th</sup>	2C	12,500	7,000	.56

Table 4.16-3
Existing ADT Volumes and V/C Ratios

Existing ADT Volumes and V/C Ratios					
Roadway	Lanes and Roadway Type	ADT Capacity	ADT	ADT V/C	
Pomona s/o 18 <sup>th</sup>	2C	12,500	10,000	.80	
Pomona n/o 17 <sup>th</sup>	2C 2C	12,500	5,000	.40	
Red Hill n/o Airport Loop	4P	38,000	17,000	.45	
Red Hill n/o Paularino	4F 4P	38,000	17,000	.50	
Red Hill n/o Baker	4P 4P	38,000	18,000	.30	
Red Hill n/o Kalmus	4P 4P	38,000	15,000	.39	
Red Hill n/o Bristol	4P 4P	38,000	19,000	.50	
Sakioka n/o Anton	4P 4P	38,000	6,000	.16	
	4P 4S		· · · · · · · · · · · · · · · · · · ·		
Santa Ana s/o Bristol		25,000	10,000	.40	
Santa Ana n/o Del Mar/University	4S	25,000	7,000	.28	
Santa Ana n/o Santa Isabel	2C	12,500	6,000	.48	
Santa Ana n/o 22nd	2C	12,500	6,000	.48	
Santa Ana n/o 21st	2C	12,500	5,000	.40	
Santa Ana n/o 19th	2C	12,500	6,000	.48	
Santa Ana n/o 17th	2C	12,500	8,000	.64	
Santa Ana n/o 16th	2C	12,500	6,000	.48	
Santa Ana n/o 15th	2C	12,500	5,000	.40	
Santa Isabel e/o Newport	2S	12,500	4,000	.32	
Santa Isabel e/o Orange	2S	12,500	3,000	.24	
South Coast w/o Harbor	4P	38,000	11,000	.29	
South Coast e/o Harbor	4P	38,000	12,000	.32	
South Coast w/o Fairview	4P	38,000	13,000	.34	
South Coast e/o Wimbledon	4P	38,000	16,000	.42	
South Coast w/o Bear	4P	38,000	16,000	.42	
Sunflower e/o Hyland	4P	38,000	5,000	.13	
Sunflower w/o Harbor	4P	38,000	7,000	.18	
Sunflower e/o Harbor	4P	38,000	13,000	.34	
Sunflower w/o Susan	4P	38,000	13,000	.34	
Sunflower w/o Fairview	4P	38,000	17,000	.45	
Sunflower w/o Fuschia/Raitt	4P	38,000	18,000	.47	
Sunflower w/o Bristol	6M-A	68,000	31,000	.46	
Sunflower e/o Bristol	6M-A	68,000	25,000	.37	
Sunflower w/o Anton	6M-A	68,000	19,000	.28	
Sunflower w/o Main	6M-A	68,000	22,000	.32	
Superior s/o Anaheim	4P	38,000	12,000	.32	
Superior n/o 16th/Industrial	4P	38,000	23,000	.61	
Tustin n/o 21st	2C	12,500	3,000	.24	
Tustin n/o 20th	2C	12,500	2,000	.16	
Tustin n/o 19 <sup>th</sup>	2C	12,500	4,000	.32	
Tustin n/o 17 <sup>th</sup>	2C	12,500	5,000	.40	
Tustin n/o 16 <sup>th</sup>	2C	12,500	7,000	.56	
Victoria w/o Pacific	4P-A	45,000	30,000	.67	
Victoria w/o National	4P-A	45,000	28,000	.62	
Victoria w/o Placentia	4P-A	45,000	30,000	.67	
Victoria e/o Placentia	4P-A	45,000	27,000	.60	
Victoria e/o Haderilla  Victoria e/o Harbor	4P-A	45,000	29,000	.64	
Victoria w/o Harbor	4P-A	45,000	31,000	.69	
Victoria e/o College	4P-A	45,000	28,000	.62	
victoria cro college	H -17	TJ,000	20,000	.02	

Table 4.16-3
Existing ADT Volumes and V/C Ratios

Existing ADT Volumes and V/C Ratios					
Lanes and					
	Roadway	ADT			
Roadway	Туре	Capacity	ADT	ADT V/C	
Wilson w/o Placentia	2S	12,500	7,000	.56	
Wilson e/o Placentia	2S-A	15,000	12,000	.80	
Wilson e/o Pomona	2S-A	15,000	15,000	1.00	
Wilson w/o Harbor	2S-A	15,000	17,000	1.13 (a)	
Wilson e/o Harbor	4S-A	30,000	17,000	.57	
Wilson e/o Fairview	2S-A	15,000	13,000	.87	
Wilson e/o Newport	2S	12,500	6,000	.48	
15th e/o Newport	2C	12,500	2,000	.16	
W. 16th e/o Monrovia	2C	12,500	4,000	.32	
W. 16th e/o Placentia	2C	12,500	5,000	.40	
16th w/o Newport	2C	12,500	2,000	.16	
16th e/o Newport	2C	12,500	4,000	.32	
16th e/o Orange	2C	12,500	3,000	.24	
16th e/o Santa Ana	2C	12,500	3,000	.24	
16th e/o Tustin	2C	12,500	3,000	.24	
W. 17th w/o Monrovia	2C	12,500	5,000	.40	
W. 17th w/o Placentia	2C	12,500	7,000	.56	
W. 17th e/o Placentia	2S	12,500	9,000	.72	
W. 17th w/o Pomona	2S	12,500	10,000	.80	
17th w/o Orange	6M-A	68,000	35,000	.51	
17th w/o Westminster	4P-A	45,000	34,000	.76	
17th w/o Santa Ana	4P-A	45,000	33,000	.73	
17th e/o Santa Ana	4P-A	45,000	34,000	.76	
17th w/o Irvine	4P	38,000	30,000	.79	
W. 18th e/o Monrovia	2C	12,500	5,000	.40	
W. 18th e/o Placentia	2C	12,500	7,000	.56	
W. 18th w/o Anaheim	2C	12,500	10,000	.80	
W. 18th w/o Park	2C	12,500	11,000	.88	
W. 19th w/o Placentia	2S	12,500	13,000	1.04 (a)	
W. 19th e/o Placentia	4S	25,000	22,000	.88	
W. 19th w/o Park	6M	56,000	32,000	.57	
W. 19th e/o Harbor	6M	56,000	32,000	.57	
19th e/o Newport	4S	25,000	12,000	.48	
19th w/o Orange	2C	12,500	11,000	.88	
19th e/o Orange	2C	12,500	8,000	.64	
19th e/o Santa Ana	2C	12,500	6,000	.48	
19th w/o Irvine	2C	12,500	6,000	.48	
20th e/o Newport	2C	12,500	4,000	.32	
20th e/o Tustin	2C	12,500	3,000	.24	
21st e/o Newport	2C 2C	12,500	3,000	.24	
21st e/o Newport 21st w/o Irvine	2C 2C	12,500	2,000	.16	
22nd e/o Newport	2C 2C	12,500	10,000	.80	
	2C 2C	12,500	7,000	.56	
22nd e/o Orange 22nd e/o Santa Ana	2C 2C		6,000		
	2C 2C	12,500		.48	
22nd/Santiago w/o Irvine	20	12,500	5,000	.40	

# Table 4.16-3 Existing ADT Volumes and V/C Ratios

	=				
		Lanes and			
		Roadway	ADT		
	Roadway	Type	Capacity	ADT	ADT V/C
Roadway Types:	M – Major Arterial (Standard)	M-A – Major Arterial (Augn	nented)		
	P – Primary Arterial (Standard)	P-A – Primary Arterial (Aug	gmented)		
	S – Secondary Arterial (Standard) S-A	Secondary Arterial (Augme	ented)	Denotes a p	eak hour deficiency.
	C – Collector Arterial	-			
(a) Although the th	neoretical maximum ADT capacity is exceede	ed at this location, this is not o	considered to be a defi	ciency because the in	ntersections analyzed
	along this roadway segment operate a	at acceptable levels of service	e during the AM and P	M peak hours.	_

Exhibit 4.16-3 (Intersection Location Map) illustrates the intersection locations in Costa Mesa that were analyzed under existing conditions. Existing ICU values were calculated using peak hour traffic count data in combination with the existing lane configuration of each location. Existing A.M. and P.M. peak hour ICU values are summarized in Table 4.16-4 (Existing Intersection LOS Summary). Based on the intersection LOS performance criteria outlined above, each of the intersection locations analyzed in the City currently operates at an acceptable LOS (LOS D or better), with the exception of the intersection of Hyland Avenue and MacArthur Boulevard during the P.M. peak hours.

## 4.16-2 Regulatory Framework

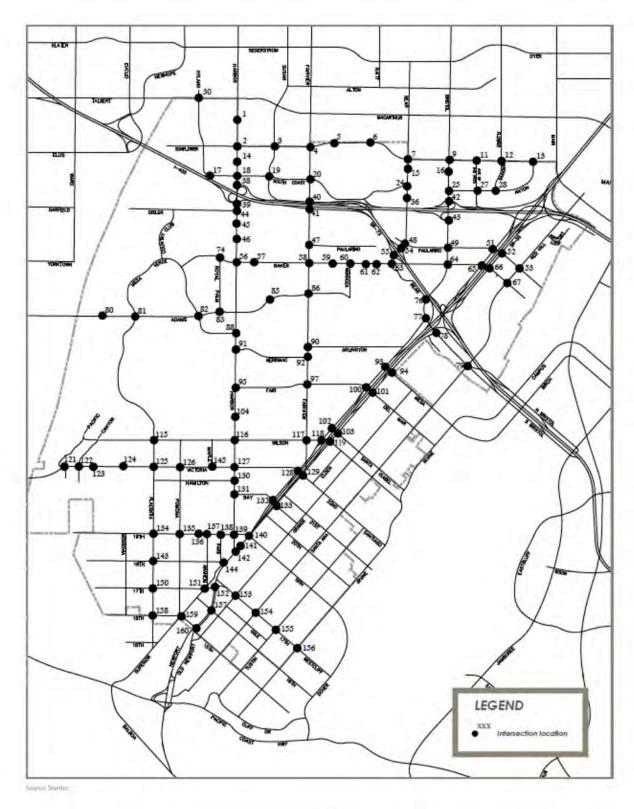
#### Orange County Congestion Management Plan (CMP)

The 2013 CMP for Orange County is a State-mandated program intended to address regional congestion by linking transportation, land use, and air quality decisions. The CMP includes a deficiency plan designed to implement strategies that either fully mitigate congestion or provide measurable improvement to congestion and air quality. The purpose of the CMP roadway network is to monitor system performance. The CMP designates a system of regionally significant roadways and establishes procedures to be used to calculate LOS. These CMP roadways are monitored to identify deficiencies in the system. The CMP includes Level of Service Standards for roadways, Standards and Policies for Transit Service, Land Use Impact Analysis, a Capital Improvement Program, Transportation Demand Management, and CMP Conformance.

The **System Level of Service Element** defines the CMP roadway system, establishes traffic LOS standards on the system, and prescribes procedures for computing traffic levels of service. The baseline LOS standard is LOS E or the LOS established in 1992 (whichever is furthest from LOS A) for any roadway segment or intersection. If a segment or intersection has been assigned a LOS F standard because the segment or intersection's LOS in 1992 was F, a 10 percent degradation in its V/C will cause the segment to be classified as deficient (see deficiency plans below).

The **Performance Element** provides a basis on which to objectively assess the relative merits among available modal alternatives and a framework for selecting appropriate alternatives.

The Land Use/Transportation Element addresses the impacts of land use decisions made by local jurisdictions on regional transportation systems, including the estimate of costs related to those impacts. The CMP defines roles for local jurisdictions to implement the goals and objectives of the plan. This element requires preparation of Traffic Impact Analysis (TIA) Reports for all development projects meeting the adopted trip generation thresholds (i.e., 2,400 or more daily trips for projects adjacent to the CMPHS, and 1,600 or more daily trips for projects that directly access the CMPHS). These reports are reviewed by Orange County Council of Governments and local jurisdictions. This element also requires development of fair-share mitigation programs to address impacts to CMP facilities. Local jurisdictions are also required to participate in the development of the CMP capital improvement program to address cumulative impacts to CMP facilities over the long term.



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Exhibit 4.16-3 Intersection Location Map

M G Hogle-Ireland

Costa Mesa General Plan Update Costa Mesa, California Table 4.16-4
Existing Intersection LOS Summary

Existing Intersection LOS Summary					
	AM Peak Hour PM Peak Hou				
Intersection	ICU	LOS	ICU	LOS	
1. Harbor & Scenic/Lake Center	.57	А	.60	Α	
2. Harbor & Sunflower	.50	А	.65	В	
3. Susan & Sunflower	.35	Α	.58	Α	
4. Fairview & Sunflower	.61	В	.58	Α	
5. Wimbledon & Sunflower	.28	Α	.47	Α	
6. Fuchsia/Raitt & Sunflower	.25	Α	.43	Α	
7. Bear & Sunflower	.36	Α	.37	Α	
9. Bristol & Sunflower	.58	Α	.76	С	
11. Ave of the Arts & Sunflower	.30	Α	.42	Α	
12. Sakioka & Sunflower	.29	Α	.41	Α	
13. Anton & Sunflower	.40	Α	.42	Α	
14. Harbor & Law Court	.55	Α	.69	В	
15. Bear & Crystal Court	.19	Α	.46	Α	
16. Bristol & Town Center	.38	Α	.39	Α	
17. Hyland & South Coast/I-405 NB On-Ramp	.23	Α	.60	Α	
18. Harbor & South Coast	.48	Α	.66	В	
19. Susan & South Coast	.26	Α	.45	Α	
20. Fairview & South Coast	.53	Α	.60	Α	
24. Bear & South Coast	.24	Α	.43	Α	
25. Bristol & Anton	.39	А	.63	В	
27. Ave of the Arts & Anton	.36	А	.42	Α	
28. Sakioka & Anton	.28	А	.39	Α	
30. Hyland & MacArthur	.52	А	.91	Е	
36. Bear & Metro Point	.24	А	.45	Α	
38. Harbor & I-405 NB Ramps	.68	В	.78	С	
39. Harbor & I-405 SB Ramps	.42	А	.59	Α	
40. Fairview & I-405 NB Ramps	.53	Α	.60	Α	
41. Fairview & I-405 SB Ramps	.58	Α	.57	Α	
42. Bristol & I-405 NB Ramps	.47	Α	.76	С	
43. Bristol & I-405 SB Ramps	.50	Α	.56	Α	
44. Harbor & Gisler	.57	Α	.74	С	
45. Harbor & Date	.44	Α	.50	Α	
46. Harbor & Nutmeg	.43	Α	.55	Α	
47. Fairview & Paularino	.47	Α	.49	Α	
48. Bear & Paularino	.36	Α	.65	В	
49. Bristol & Paularino	.46	Α	.64	В	
51. SR-55 SB Ramps & Paularino	.71	С	.64	В	
52. SR-55 NB Ramps & Paularino	.67	В	.71	С	
53. Red Hill & Paularino	.43	Α	.56	Α	
54. Bear & SR 73 NB Ramps	.31	Α	.56	Α	
55. Bear & SR-73 SB Ramps	.36	Α	.49	Α	
56. Harbor & Baker	.47	А	.64	В	
57. College & Baker	.34	Α	.52	Α	
58. Fairview & Baker	.62	В	.67	В	
59. Coolidge & Baker	.43	А	.65	В	
60. Mendoza & Baker	.48	А	.60	Α	
61. Babb & Baker	.55	А	.68	В	
62. Milbro & Baker	.52	А	.50	Α	
63. Bear & Baker	.49	А	.55	Α	
64. Bristol & Baker	.56	А	.74	С	
ı	L				

Table 4.16-4
Existing Intersection LOS Summary

Existing inter	rsection LOS Su			
	AM Peak Hour PM Peak Ho			
Intersection	ICU	LOS	ICU	LOS
65. SR-55 SB Ramps & Baker	.66	В	.69	В
66. SR-55 NB Ramps & Baker	.67	В	.75	С
67. Red Hill & Baker	.34	Α	.63	В
74. Royal Palm & Baker	.33	Α	.52	Α
76. Bristol & Bear	.34	Α	.44	Α
77. Bristol & Newport SB	.27	Α	.44	Α
78. Bristol & Newport NB	.29	Α	.41	Α
79. Bristol & Red Hill	.38	Α	.43	Α
80. Shantar & Adams	.47	Α	.60	Α
81. Placentia/Mesa Verde W & Adams	.75	С	.75	С
82. Mesa Verde E & Adams	.52	Α	.57	Α
83. Royal Palm & Adams	.49	Α	.66	В
84. Harbor & Adams	.66	В	.74	С
85. Pinecreek & Adams	.59	А	.62	В
86. Fairview & Adams	.62	В	.60	Α
88. Harbor & Mesa Verde	.41	Α	.60	Α
90. Fairview & Arlington	.28	Α	.42	Α
91. Harbor & Merrimac	.36	A	.56	A
92. Fairview & Merrimac	.24	A	.30	A
93. Newport SB & Mesa	.28	A	.53	A
94. Newport NB & Mesa	.27	A	.41	A
95. Harbor & Fair	.35	A	.53	A
97. Fairview & Fair	.41	A	.53	A
100. Newport SB & Fair	.32	A	.41	A
101. Newport NB & Del Mar	.75	C	.48	A
102. Newport SB & Vanguard	.23	Ä	.45	Ä
103. Newport NB & Santa Isabel	.41	Ä	.43	A
104. Harbor & Harbor Center	.39	Ä	.55	A
115. Placentia & Wilson	.43	A	.47	A
116. Harbor & Wilson	.43	Ä	.58	A
117. Fairview & Wilson	.48	A	.66	В
	.26	A	.39	
118. Newport NR & Wilson	.36	A	.39 .40	A
119. Newport NB & Wilson				A
121. Valley & Victoria	.54 .53	A A	.65	B B
122. Canyon & Victoria			.61 .59	
123. American & Victoria	.56	A		A
124. National & Victoria	.59	A	.63	В
125. Placentia & Victoria	.74	С	.77	С
126. Pomona & Victoria	.61	В	.63	В
127. Harbor & Victoria	.67	В	.78	C
128. Newport SB & Victoria	.49	A	.56	A
129. Newport NB & 22nd	.79	С	.60	A
130. Harbor & Hamilton	.41	A	.57	A
131. Harbor & Bay	.31	A	.47	A
132. Newport SB & Bay	.28	A	.50	A
133. Newport NB & Bay	.34	A	.45	A
134. Placentia & 19th	.43	A	.55	A
135. Pomona & 19th	.46	А	.62	В
136. Meyer & 19th	.26	Α	.34	Α
137. Anaheim & 19th	.61	В	.70	В
138. Park & 19th	.38	А	.51	Α

Table 4.16-4
Existing Intersection LOS Summary

	AM Peak Hour		PM Peak Hour	
Intersection	ICU	LOS	ICU	LOS
139. Harbor & 19th	.40	А	.57	А
140. Newport & 19th	.86	D	.83	D
141. Newport & Broadway	.63	В	.64	В
142. Newport & Harbor	.70	В	.78	С
143. Placentia & 18th	.56	Α	.69	В
144. Newport & 18th/Rochester	.74	С	.81	D
145. Maple & Victoria	.54	Α	.58	Α
150. Placentia & 17th	.40	Α	.54	Α
151. Superior & 17th	.67	В	.67	В
152. Newport & 17th	.73	С	.77	С
153. Orange & 17th	.51	Α	.62	В
154. Santa Ana & 17th	.52	Α	.62	В
155. Tustin & 17th	.49	Α	.57	Α
156. Irvine & 17th	.56	Α	.67	В
157. Newport & 16th	.53	Α	.60	Α
158. Placentia & 16th	.30	Α	.35	Α
159. Superior & 16th	.46	Α	.45	Α
160. Newport & Industrial	.48	А	.59	А
Abbreviations: ICU – intersection capacity utilization LOS – level of service NB – northbound				

The **Travel Demand Management Element** includes strategies that are consistent with achieving air quality goals, including reductions in trip making, trip length, and travel demand, as well as increasing the availability of modal alternatives.

The **Monitoring Program and Transportation Modeling Element** provides information on current levels of service, identifies system deficiencies, and determines local jurisdiction conformity with the CMP.

The **Capital Improvement Element** includes a seven-year plan using performance measures to improve the performance of the multimodal transportation system.

The **Deficiency Plan** identifies locations where LOS at intersections and on roadway segments (arterials and freeways) fail to attain the County's established LOS standards. Deficiency is based on the 1997 baseline established when the first CMP was adopted. The intersection of Harbor Boulevard and Adams Avenue and the intersection of I-405 northbound ramp and Harbor Boulevard are the only CMP facilities within the Costa Mesa planning area currently operating at LOS F.

#### **Development Impact Fees**

SB - southbound

Denotes a peak-hour deficiency.

Section 13-270 of the Municipal Code establishes the City's Development Impact Fee program. These fees are imposed on any project requiring a building permit or other land development permit that will result in the attraction or generation of traffic trips. Traffic attraction and generation are determined through a special study that also serves to apportion a project's "fair share" impact on existing or future infrastructure. These funds are permitted to be used for any traffic-related capital improvement project, meaning transportation planning, preliminary engineering, engineering

design studies, land surveys, right-of-way acquisition, engineering, permitting, construction and inspection of all the necessary features for any road construction project.

#### Costa Mesa General Plan

The current Costa Mesa General Plan includes extensive goals, objectives, and policies that address circulation within the Planning Area. The overarching goals and objectives are:

**GOAL CIR-1: TRANSPORTATION.** It is the goal of the City of Costa Mesa to provide for a balanced, uncongested, safe, and energy-efficient transportation system, incorporating all feasible modes of transportation.

<u>Objective CIR-1A.</u> To provide specific programs and policies that address multimodal transportation, multiagency coordination, mitigation of traffic impacts and the balancing of land uses with transportation systems.

**GOAL CIR-2: TRANSPORTATION SYSTEM MANAGEMENT.** It is the goal of the City of Costa Mesa to provide for standard service levels at signalized intersections by constructing capacity improvements for all various modes of circulation, adopting land use intensities commensurate with planned circulation improvements and implementing traffic demand reduction programs, thereby creating a more energy efficient transportation system.

- Objective CIR-2A. To coordinate efforts with other regional agencies and pursue operational improvements towards enhancing the capacity of the system of freeways and arterial highways in the City.
- Objective CIR-2B. To promote the use of high occupancy vehicular modes of transportation in and through the City.
- <u>Objective CIR-2C.</u> To invest capital via a rationally phased allocation process for implementing transportation projects and programs.
- Objective CIR-2D. To ensure that the transportation related impacts of development projects are mitigated to the fullest extent possible, in conformance with transportation related policies.

## 4.16-3 Thresholds of Significance

The General Plan Amendments could result in impacts associated with transportation and traffic if it:

- A. Causes an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., results in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).
- B. Exceeds, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.
- C. Results in a change in air traffic patterns, including an increase in traffic levels or a change in location that results in substantial safety risks.
- D. Substantially increases hazards due to design features or incompatible uses.
- E. Results in inadequate emergency access.
- F. Results in inadequate parking capacity.
- G. Conflicts with adopted policies, plans, or programs supporting alternative transportation.

## 4.16-4 Environmental Impacts

This section first examines the potential impacts on the roadway system associated with buildout of the proposed land use plan. That analysis is followed by examination of the proposed amendments to Circulation Element goals, objectives, policies, and recommendations.

#### **Future Traffic Demands**

The traffic impact analysis prepared for the proposed project analyzes future traffic demands on the City of Costa Mesa roadway circulation system. The traffic generation characteristics of existing and future land uses in the City are first described. This is followed by a description of future roadway improvements planned and/or proposed in the City and an analysis of future traffic volumes and levels of service on the local roadway system. Various issues pertaining to the Costa Mesa Master Plan of Streets and Highways (MPSH) are addressed as well.

As part of the analysis for alternatives to the project, the traffic analysis also presented potential impacts associated with the current General Plan. The analysis of current General Plan traffic conditions to the proposed amended General Plan conditions is included in Section 5.0 – Alternatives of this EIR.

#### Citywide Land Use and Trip Generation

As part of the Costa Mesa General Plan Amendment process, an inventory of existing land uses in the City was compiled, and future land uses associated with buildout of the proposed General Plan were determined. Morning and evening peak-hour and ADT trip generation estimates based were calculated for existing and future land uses using vehicle trip generation rates from various sources, primarily the Institute of Transportation Engineers Trip Generation Manual (9th Edition). The ADT trip generation rates are summarized in Table 4.16-5 (Average Daily Traffic Trip Generation Rates), and citywide existing and future (current and proposed General Plan) land use and ADT trip generation estimates are summarized in Table 4.16-6 (Citywide Land Use and ADT Trip Generation Summary). Of particular note is the condition that uses within the Home Ranch subarea, under the current General Plan, and the Sakioka Lot 2 area, under the current and proposed General Plan, are subject to trip generation caps established for those areas in the General Plan and land use regulations. Also, future trip generation growth assumed for Orange Coast College (OCC) is based on the recently adopted OCC Facilities Master Plan.

As indicated in Table 4.16-6, the ADT generated under the proposed General Plan scenario are estimated to increase by 22.1% relative to the existing ADT trip generation level.

The traffic model was also utilized to forecast future a.m. and p.m. peak-hour volumes at roadway intersection locations throughout Costa Mesa. Table 4.16-7 (Peak Hour Trip Generation Rates) summarizes the a.m. and p.m. peak-hour trip rates that were applied in the model for the existing and future land uses. These peak-hour trip rates were taken from the same sources as the ADT trip generation rates presented earlier. Citywide peak-hour and ADT trip generation estimates based on existing land uses; see Table 4.16-8 (Existing Citywide Land Use and Peak Hour Trip Generation). Buildout of the proposed General Plan land uses are summarized in Table 4.16-9 (Proposed General Plan Buildout Citywide Land Use and Peak Hour Trip Generation).

Table 4.16-5 **Average Daily Traffic Trip Generation Rates** 

	AV	erage Daily Trainc Trip Generation Rates	ADT Trip	
Land Has Catagory	Units	Course		
Land Use Category		Source	<b>Rate</b> 9.52	
Low Density Residential     Madisus Density Desidential	DU	ITE Category 210 Single Family Detached		
2. Medium Density Residential	DU	Average of ITE Category 210 Single Family Detached and ITE Category		
2 High Daneity Decidential	DII	220 Apartments	/ / Γ	
3. High Density Residential	DU	ITE Category 220 Apartments	6.65	
5. Age Qualified Housing	DU	ITE Category 252 Senior Adult Housing - Attached	3.44	
6. General Office	TSF	ITE Category 710 General Office Building	11.03	
7. Medical Office	TSF	ITE Category 720 Medical-Dental Office Building	36.13	
8. General Commercial	TSF	ITE Category 820 Shopping Center Equation for 200 TSF	53.28	
9. Regional Commercial	TSF	ITE Category 820 Shopping Center Equation for 2000 TSF	23.80	
10. Light Industrial	TSF	ITE Category 110 Light Industrial	6.97	
11. Golf Course	Acre	ITE Category 430 Golf Course	5.04	
12. Elementary/Middle School	Student	ITE Category 520 Elementary School	1.29	
13. High School	Student	ITE Category 530 High School	1.71	
14. College/University	Student	ITE Category 540 Junior/Community College	1.23	
15. Public Facility	Acre	ITE Category 411 City Park	1.89	
16. Fairgrounds	Acre	OC Fairgrounds (Special Use)	12.30	
17. Storage	TSF	ITE Category 151 Mini-Warehouse	2.50 27.92	
18. City Hall	TSF	ITE Category 733 Government Office Complex		
19. Performance Theater	TSF	Field Survey	1.23	
20. Convalescent Care	Bed	ITE Category 254 Assisted Living	2.66	
21. Hospital	Bed	ITE Category 610 Hospital	12.94	
22. Hotel	Room	ITE Category 310 Hotel	8.17	
23. Motel	Room	ITE Category 320 Motel	5.63	
24. Auto Dealership	TSF	ITE Category 841 New Car Sales	32.30	
25. Passive Park	Acre	ITE Category 411 City Park (ADT)	1.89	
26. Agriculture	Acre	Assumed to be negligible	.00	
27. Religious Facility	TSF	ITE Category 560 Church	9.11	
28. Vacant	Acre	Assumed to be negligible	.00	
29. Museum	TSF	ITE Category 590 Library	56.24	
30. Home Ranch	TCE	ITE Category 710 General Office Building adjusted based on the	11.00	
	TSF	established peak hour trip caps for Home Ranch	11.03	
31. Sakioka Lot 2	TCE	ITE Category 710 General Office Building adjusted based on the	11.00	
	TSF	established peak hour trip caps for Sakioka Lot 2	11.03	
32. OCC Master Plan	SG Unit	Special Generator (SG) rates based on trip generation estimates from the	1440/	
	SG UIIII	August 2015 Orange Coast College (OCC) Facilities Master Plan	144.96	

Abbreviations:

ADT – average daily traffic
DU – dwelling unit
ITE – Institute of Transportation Engineers Trip Generation Manual, 9th Edition
TSF – thousand square feet

Note: Land Use #4 in this table and subsequent tables was eliminated during the course of refining the traffic study model.

Table 4.16-6
Citywide Land Use and ADT Trip Generation Summary

Citywide Land Use and ADT Trip Generation Summary						
		Existing		Proposed General Plan Buildout		
Land Use Category	Units	Amount ADT		Amount ADT		
1. Low Density Residential	DU	14,210	135,290	14,791	140,817	
Medium Density Residential	DU	4,370	35,349	4,992	40,384	
3. High Density Residential	DU	23,593	156,896	31,661	210,548	
	DU	450	1,548	450		
5. Age Qualified Housing 6. General Office	TSF	7,112	78,442	10,675	1,548	
	TSF	112		10,673	117,743	
7. Medical Office			4,047		4,047	
8. General Commercial	TSF	5,601	298,423	7,299	388,892	
9. Regional Commercial	TSF	4,140	98,531	4,640	110,431	
10. Light Industrial	TSF	13,087	91,217	12,704	88,549	
11. Golf Course	Acre	535	2,696	535	2,696	
12. Elementary/Middle School	Student	7,385	9,526	8,067	10,406	
13. High School	Student	4,590	7,848	4,998	8,547	
14. College/University	Student	25,990	31,968	26,286	32,332	
15. Public Facility	Acre	176	336	228	434	
16. Fairgrounds	Acre	150	1,845	150	1,845	
17. Storage	TSF	1,171	2,931	530	1,328	
18. City Hall	TSF	133	3,713	133	3,713	
19. Performance Theater	TSF	585	720	691	850	
20. Convalescent Care	Bed	448	1,191	448	1,191	
21. Hospital	Bed	472	6,108	122	1,579	
22. Hotel	Room	1,877	15,335	2,077	16,969	
23. Motel	Room	2,272	12,793	946	5,327	
24. Auto Dealership	TSF	491	15,860	491	15,860	
25. Passive Park	Acre	592	1,122	618	1,171	
26. Agriculture	Acre	72	0			
27. Religious Facility	TSF	555	5,055	555	5,055	
28. Vacant	Acre	18	0	6	0	
29. Museum	TSF			140	7,874	
30. Home Ranch Trip Cap	TSF					
31. Sakioka Lot 2 Trip Cap	TSF	0	0	862	9,508	
32. OCC Master Plan	SG	0	0	100	14,496	
Total Trip Generation 1,018,790			1,244,140			
Total Trip Generation Difference (a)				225,350		
Total Trip Generation Percent Difference (a)			1	22.1%		

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Table 4.16-7
Peak Hour Trip Generation Rates

		, our	AM Peak Hour	oration reactor		PM Peak Hour		
Land Use	Units	In	Out	Total	ln	Out	Total	ADT
1. Low Density Residential	DU	.19	.56	.75	.63	.37	1.00	9.52
Medium Density Residential	DU	.15	.49	.64	.52	.30	.82	8.09
3. High Density Residential	DU	.10	.41	.51	.40	.22	.62	6.65
5. Age Qualified Housing	DU	.07	.13	.20	.14	.11	.25	3.44
6. General Office	TSF	1.37	.19	1.56	.25	1.24	1.49	11.03
7. Medical Office	TSF	1.89	.50	2.39	1.00	2.57	3.57	36.13
8. General Commercial	TSF	.73	.45	1.18	2.23	2.41	4.64	53.28
9. Regional Commercial	TSF	.33	.20	.53	.99	1.08	2.07	23.80
10. Light Industrial	TSF	.81	.11	.92	.12	.85	.97	6.97
11. Golf Course	Acre	.16	.05	.21	.10	.20	.30	5.04
12. Elementary/Middle School	Student	.25	.20	.45	.07	.08	.15	1.29
13. High School	Student	.29	.14	.43	.06	.07	.13	1.71
14. College/University	Student	.10	.02	.12	.08	.04	.12	1.23
15. Public Facility	Acre	.04	.04	.08	.08	.07	.15	1.89
16. Fairgrounds	Acre	.00	.00	.00	2.00	2.00	4.00	12.30
17. Storage	TSF	.08	.06	.14	.13	.13	.26	2.50
18. City Hall	TSF	1.97	.24	2.21	.88	1.97	2.85	27.92
19. Performance Theater	TSF	.01	.00	.01	.08	.02	.10	1.23
20. Convalescent Care	Bed	.09	.05	.14	.10	.12	.22	2.66
21. Hospital	Bed	.95	.37	1.32	.47	.95	1.42	12.94
22. Hotel	Room	.31	.22	.53	.31	.29	.60	8.17
23. Motel	Room	.16	.29	.45	.25	.22	.47	5.63
24. Auto Dealership	TSF	1.44	.48	1.92	1.05	1.57	2.62	32.30
25. Passive Park	Acre	.04	.04	.08	.08	.07	.15	1.89
26. Agriculture	Acre	.00	.00	.00	.00	.00	.00	.00
27. Religious Facility	TSF	.35	.21	.56	.26	.29	.55	9.11
28. Vacant	Acre	.00	.00	.00	.00	.00	.00	.00
29. Museum	TSF	.74	.30	1.04	3.50	3.80	7.30	56.24
30. Home Ranch Trip Cap	TSF	1.38	.20	1.58	.29	1.28	1.57	11.03

Table 4.16.8 Existing Citywide Land Use and Peak Hour Trip Generation

	oung only	wide Edila		/I Peak H			M Peak H	our	
Land Use	Units	Amount	ln	Out	Total	ln	Out	Total	ADT
1. Low Density Residential	DU	14,210	2,700	7,958	10,658	8,952	5,258	14,210	135,290
2. Medium Density Residential	DU	4,370	656	2,141	2,797	2,272	1,311	3,583	35,349
3. High Density Residential	DU	23,593	2,359	9,673	12,032	9,437	5,190	14,627	156,896
5. Age Qualified Housing	DU	450	32	59	91	63	50	113	1,548
6. General Office	TSF	7,112	9,743	1,351	11,094	1,778	8,819	10,597	78,442
7. Medical Office	TSF	112	212	56	268	112	288	400	4,047
8. General Commercial	TSF	5,601	4,089	2,520	6,609	12,490	13,498	25,988	298,423
9. Regional Commercial	TSF	4,140	1,366	828	2,194	4,099	4,471	8,570	98,531
10. Light Industrial	TSF	13,087	10,600	1,440	12,040	1,570	11,124	12,694	91,217
11. Golf Course	Acre	535	86	27	113	54	107	161	2,696
12. Elementary/Middle School	Student	7,385	1,846	1,477	3,323	517	591	1,108	9,526
13. High School	Student	4,590	1,331	643	1,974	275	321	596	7,848
14. College/University	Student	25,990	2,599	520	3,119	2,079	1,040	3,119	31,968
15. Public Facility	Acre	176	7	7	14	14	12	26	336
16. Fairgrounds	Acre	150	0	0	0	300	300	600	1,845
17. Storage	TSF	1,171	94	70	164	152	152	304	2,931
18. City Hall	TSF	133	262	32	294	117	262	379	3,713
19. Performance Theater	TSF	585	6	0	6	47	12	59	720
20. Convalescent Care	Bed	448	40	22	62	45	54	99	1,191
21. Hospital	Bed	472	448	175	623	222	448	670	6,108
22. Hotel	Room	1,877	582	413	995	582	544	1,126	15,335
23. Motel	Room	2,272	364	659	1,023	568	500	1,068	12,793
24. Auto Dealership	TSF	491	707	236	943	516	771	1,287	15,860
25. Passive Park	Acre	592	24	24	48	47	41	88	1,122
26. Agriculture	Acre	72	0	0	0	0	0	0	0
27. Religious Facility	TSF	555	194	117	311	144	161	305	5,055
28. Vacant	Acre	18	0	0	0	0	0	0	0
Total Trip Generation				30,448	70,795	46,452	55,325	101,777	1,018,790
Abbreviations: ADT – average	ge daily traffic	SG - 9	special ger	nerator					

ADT – average daily traffic DU – dwelling unit

SG – special generator TSF – thousand square feet

Table 4.16-9
Proposed General Plan Buildout Citywide Land Use and Peak Hour Trip Generation

Proposed Gene	rai Pian B	uildout Cit							
			A۱	/I Peak H	lour	P	M Peak H	our	
Land Use	Units	Amount	ln	Out	Total	ln	Out	Total	ADT
1. Low Density Residential	DU	14,791	2,810	8,283	11,093	9,318	5,473	14,791	140,817
2. Medium Density Residential	DU	4,992	749	2,446	3,195	2,596	1,498	4,094	40,384
3. High Density Residential	DU	31,661	3,166	12,981	16,147	12,664	6,965	19,629	210,548
5. Age Qualified Housing	DU	450	32	59	91	63	50	113	1,548
6. General Office	TSF	10,675	14,625	2,028	16,653	2,669	13,237	15,906	117,743
7. Medical Office	TSF	112	212	56	268	112	288	400	4,047
8. General Commercial	TSF	7,299	5,328	3,285	8,613	16,277	17,591	33,868	388,892
9. Regional Commercial	TSF	4,640	1,531	928	2,459	4,594	5,011	9,605	110,431
10. Light Industrial	TSF	12,704	10,290	1,397	11,687	1,524	10,798	12,322	88,549
11. Golf Course	Acre	535	86	27	113	54	107	161	2,696
12. Elementary/Middle School	Student	8,067	2,017	1,613	3,630	565	645	1,210	10,406
13. High School	Student	4,998	1,449	700	2,149	300	350	650	8,547
14. College/University	Student	26,286	2,629	526	3,155	2,103	1,051	3,154	32,332
15. Public Facility	Acre	228	9	9	18	18	16	34	434
16. Fairgrounds	Acre	150	0	0	0	300	300	600	1,845
17. Storage	TSF	530	42	32	74	69	69	138	1,328
18. City Hall	TSF	133	262	32	294	117	262	379	3,713
19. Performance Theater	TSF	691	7	0	7	55	14	69	850
20. Convalescent Care	Bed	448	40	22	62	45	54	99	1,191
21. Hospital	Bed	122	116	45	161	57	116	173	1,579
22. Hotel	Room	2,077	644	457	1,101	644	602	1,246	16,969
23. Motel	Room	946	151	274	425	237	208	445	5,327
24. Auto Dealership	TSF	491	707	236	943	516	771	1,287	15,860
25. Passive Park	Acre	618	25	25	50	49	43	92	1,171
26. Agriculture	Acre	0	0	0	0	0	0	0	0
27. Religious Facility	TSF	555	194	117	311	144	161	305	5,055
28. Vacant	Acre	6	0	0	0	0	0	0	0
29. Museum	TSF	140	104	42	146	490	532	1,022	7,874
30. Home Ranch Trip Cap	TSF	0	0	0	0	0	0	0	0
31. Sakioka Lot 2 Trip Cap	TSF	862	586	474	1,060	603	802	1,405	9,508
32. OCC Master Plan	SG	100	936	195	1,131	731	772	1,503	14,496
Total Trip Generation			48,747	36,289	85,036	56,914	67,786	124,700	1,244,140
Abbreviations: ADT – averaç			special ge						_
DU – dwelling	g unit	TSF –	thousand	square fe	et				

# **Future Roadway Circulation System**

Year 2035 future traffic conditions that assume buildout of the proposed General Plan land uses in Costa Mesa were analyzed in the traffic study for the following two future circulation system scenarios:

- Year 2035 Constrained Highway Network
- Year 2035 Buildout Highway Network

The year 2035 constrained highway network scenario assumes only improvements that are committed for construction, such as those contained in Costa Mesa's CIP and associated traffic impact fee program and the OCTA Measure M2 Program. The year 2035 buildout highway network scenario assumes non-committed future improvements that are included in the City of Costa Mesa Master Plan of Streets and Highways (MPSH). The freeway and arterial roadway improvements assumed in year 2035 constrained and buildout highway networks in

Costa Mesa and the immediate vicinity are listed in Table 4.16-10 (Future Roadway Improvements). The year 2035 roadway circulation system is illustrated in Exhibits 4.16-4 (Year 2035 Constrained Roadway System) and 4.16-5 (Year 2035 Buildout Roadway System) for the constrained highway network and the buildout highway network, respectively. Future intersection improvements assumed for year 2035 constrained and buildout highway network scenarios are summarized in Table 4.16-11 (Future Intersection Improvements).

Table 4.16-10
Future Roadway Improvements

	Future Roadway Improvements	
	Year 2035 Constrained Highway Netwo	ork
Location	Improvement	Source
Harbor Boulevard (Sunflower Avenue to Whittier Law School driveway)	Widen northbound from three lanes to four lanes.	Costa Mesa CIP
Newport Boulevard (19th Street to 17th Street)	Widen southbound from three lanes to four lanes.	Costa Mesa CIP
I-405 Freeway (SR-73 to I-605)	Add one general purpose lane in each direction between Euclid Street and I-605, and add one tolled Express Lane in each direction between SR-73 and SR-22.	Orange County Transportation Authority Measure M2 Program
I-405 Freeway (SR-55 to SR-133)	Add one general purpose lane in each direction.	Orange County Transportation Authority Measure M2 Program
SR-55 Freeway (I-405 to I-5)	Add one general purpose lane in each direction.	Orange County Transportation Authority Measure M2 Program
Location	Year 2035 Buildout Highway Network ( Improvement	a) Source
17 <sup>th</sup> Street (Orange Avenue to Tustin Avenue)	Widen from four lanes to six lanes.	Costa Mesa Master Plan of Streets and Highways
17 <sup>th</sup> Street (Pomona Avenue to Bluff Road)	Widen from two lanes to four lanes.	Costa Mesa Master Plan of Streets and Highways
Baker Street (Bear Street to Red Hill Avenue)	Widen from four lanes to six lanes.	Costa Mesa Master Plan of Streets and Highways
Bear Street (I-405 overcrossing)	Widen from four lanes to six lanes.	Costa Mesa Master Plan of Streets and Highways
Del Mar Avenue/University Drive (Newport Boulevard to Irvine Avenue)	Widen from two lanes to four lanes.	Costa Mesa Master Plan of Streets and Highways
SR-55 Freeway (19 <sup>th</sup> Street to Industrial Way)	Construct four-lane freeway extension (cut and cover).	Costa Mesa Master Plan of Streets and Highways
Wilson Street (Newport Boulevard to College Avenue)	Widen from two lanes to four lanes.	Costa Mesa Master Plan of Streets and Highways
Wilson Street (Harbor Boulevard to Placentia Avenue)	Widen from two lanes to four lanes.	Costa Mesa Master Plan of Streets and Highways
(a) The year 2035 buildout highway network	also includes the improvements assumed in the year	ear 2035 constrained highway network.

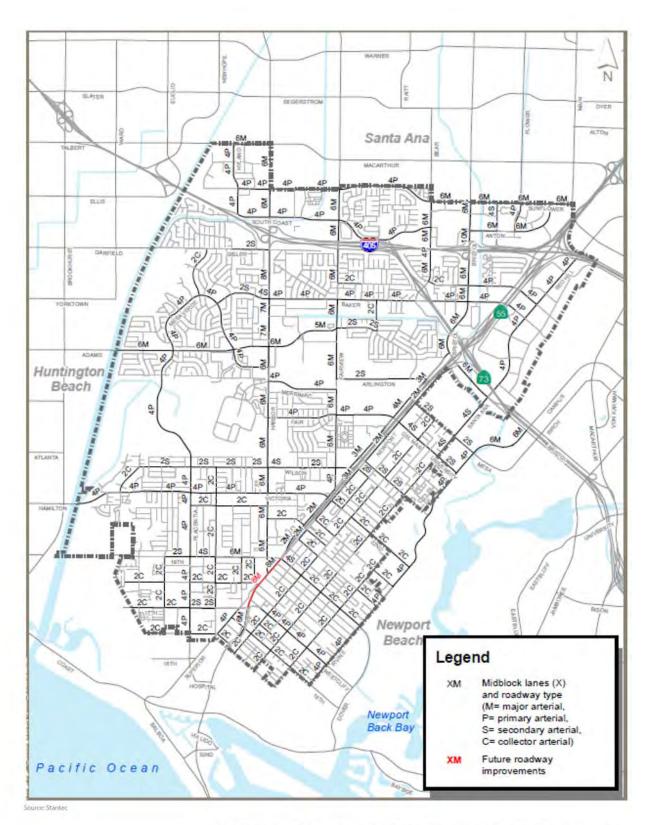
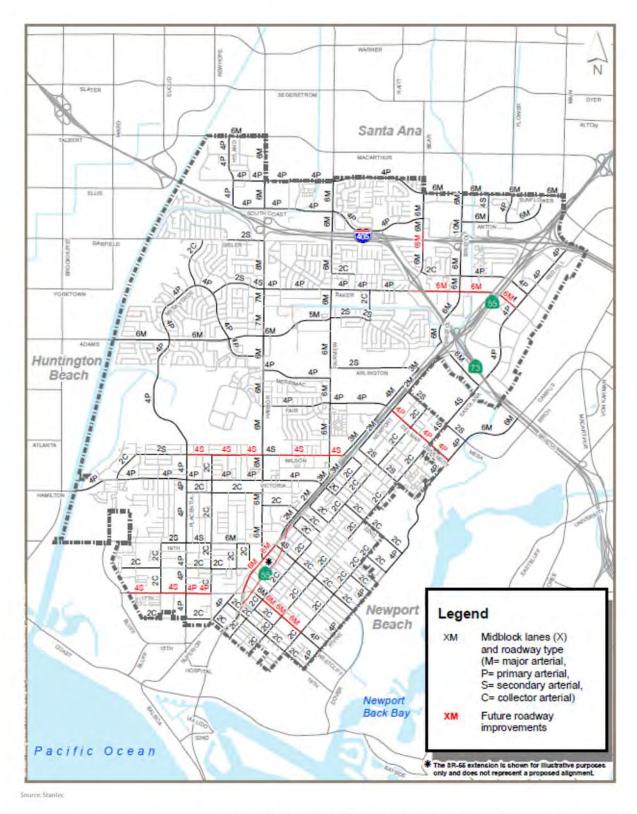


Exhibit 4.16-4 Year 2035 Constrained Roadway System

M G Hogle-Ireland

Costa Mesa General Plan Update Costa Mesa, California



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Exhibit 4.16-5 Year 2035 Buildout Roadway System



Costa Mesa General Plan Update Costa Mesa, California

Table 4.16-11 Future Intersection Improvements

		FU	ature int	tersection	on impr								
							ection Ap						
		S	outhbou	nd		/estbou			orthbou			astbour	
Loc. #	Intersection (NS & EW)	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2	Harbor Boulevard & Sunflower Ave	enue											
	Existing Conditions	2	3	1	1.5	1.5	0	2	3	1	1	2	0
	Improvements (2035 Constrained)						1						1
9	Bristol Street & Sunflower Avenue												
	Existing Conditions	2	3	1	2	3	1	2	2.5	1.5	2	2.5	1.5
	Improvements (2035 Constrained)							3					
17	Hyland Avenue & South Coast Driv	/e/I-405 N	lorthbou	nd Ramp	)								
	Existing Conditions	1	0	f	0	1	1	0	0	0	0	0	0
	Improvements (2035 Constrained)					2							
18	Harbor Boulevard & South Coast D	rive				•	•	,	•		•	•	
	Existing Conditions	2	4	1	2	2	1	2	3.5	1.5	1	0.5	1.5
	Improvements (2035 Constrained)											1	2
30	Hyland Avenue & MacArthur Boule	vard		ı		1		ı			1		
	Existing Conditions	1	1	1	1	3	1	2	1	0	1	3	1
	Improvements (2035 Constrained)	'			<u> </u>	Ü	•	2.5	0.5	1		J	'
42	Bristol Street & I-405 Northbound F	?amns				1	1	2.0	0.0			1	
12	Existing Conditions	0	5	0	1.5	1.5	2	0	4	f	0	0	2
	Improvements (2035 Constrained)	0		0	1.5	1.0	2.5	0	7	'	-	0	
44	Harbor Boulevard & Gisler Avenue				1.5	' '	2.0		l			1	
	Existing Conditions	1	4	0	1	1	1	1	5	0	2	1	0
	Improvements (2035 Constrained)	ı	4	1	<u> </u>	'	'	1	3	U	3	- '	U
49	Bristol Street & Paularino Avenue			' '		1	1				3	1	
47	Existing Conditions	2	3	0	1	1	1	1	3	0	1	1	0
	Improvements (2035 Constrained)		3	U	2		'	1	3	U	1	'	U
E1	` '	rino Avo	nuo.		Z	1	<u> </u>					1	
51	SR-55 Southbound Ramps & Paula		1	0	1	2		0	0	0	0	۱ ၁	0
	Existing Conditions	0	2	1	1	2	0	0	0	0	0	2	0
F2	Improvements (2035 Constrained)			I									
52	SR-55 Northbound Ramps & Paula	I	1	_		1 2	1 0	1 o r	1	0	1	1 2	
	Existing Conditions	0	0	0	0	2	0	0.5	1.5	0	1	2	0
	Improvements (2035 Constrained)						I						
63	Bear Street & Baker Street						-	4	-				
	Existing Conditions	2	1	2	I	3	1	1	1	1	2	2	0
	Improvements (2035 Buildout)											3	
64	Bristol Street & Baker Street			1 - 1									
	Existing Conditions	2	3	1	2	2	1	2	3	1	2	2	0
	Improvements (2035 Buildout)					3						3	
65	SR-55 Southbound Ramps & Baker			1			1	ı	ı		ı	1	ı
	Existing Conditions	0.5	1.5	0	11	2	0	0	0	0	0	2	1
	Improvements (2035 Constrained)			1									
	Improvements (2035 Buildout)					3						3	
66	SR-55 Northbound Ramps & Baker	Street		,			,		ı				
	Existing Conditions	0	0	0	0	2	1	0.5	1.5	0	1	2	0
	Improvements (2035 Constrained)							1.5			2		
	Improvements (2035 Buildout)					3						3	
67	Red Hill Avenue & Baker Street												
	Existing Conditions	1	2	0	1	2	0	1	2	0	1.5	1.5	1

Table 4.16-11 Future Intersection Improvements

Imp   Exi   Imp   100   Net   Exi   101   Net   Exi   Imp   115   Pla   Exi   Imp   129   Net   Exi   Imp   134   Pla   Exi   Imp   134   Pla   Exi   Imp   134   Pla   Exi   Imp   140   Net   Exi   Imp   Imp   Exi   Imp   Imp	tersection (NS & EW) hprovements (2035 Buildout) arbor Boulevard & Adams Avenu kisting Conditions hprovements (2035 Constrained) ewport Boulevard Southbound & kisting Conditions ewport Boulevard Northbound & kisting Conditions hprovements (2035 Constrained) lacentia Avenue & Wilson Street kisting Conditions hprovements (2035 Buildout)	Left e 2 Fair Driv	3	Right 2		/estbou	ction Ap nd Right	No	orthbou Thru	ind Right	E Left	astboun Thru	nd Right
Imp   Exi   Imp   100   Nev   Exi   101   Nev   Exi   Imp   115   Pla   Exi   Imp   129   Nev   Exi   Imp   134   Pla   Exi   Imp   134   Pla   Exi   Imp   140   Nev   Exi   Imp   140   Nev   Exi   Imp   Imp   140   Nev   Exi   Imp   Imp	arbor Boulevard & Adams Avenus	e 2 Fair Driv	Thru  4  /e  3  Avenue	Right	Left	Thru 3		Left	Thru				
Imp   Exi   Imp   100   Nev   Exi   101   Nev   Exi   Imp   115   Pla   Exi   Imp   129   Nev   Exi   Imp   134   Pla   Exi   Imp   134   Pla   Exi   Imp   140   Nev   Exi   Imp   140   Nev   Exi   Imp   Imp   140   Nev   Exi   Imp   Imp	arbor Boulevard & Adams Avenus	e 2 Fair Driv 1 Del Mar	4 /e 3 Avenue			3	Right 1			Right	Left	Thru	Right
84	arbor Boulevard & Adams Avenus	Fair Driv 1 Del Mar	ve 3 Avenue	2 f	2		1	2					
Exi   Imp	xisting Conditions reprovements (2035 Constrained) ewport Boulevard Southbound & xisting Conditions ewport Boulevard Northbound & xisting Conditions reprovements (2035 Constrained) lacentia Avenue & Wilson Street xisting Conditions reprovements (2035 Buildout)	Fair Driv 1 Del Mar	ve 3 Avenue	2 f	2	3	1	2					
Imp   100   Ne   Exi   101   Ne   Exi   Imp   115   Pla   Exi   Imp   129   Ne   Exi   Imp   134   Pla   Exi   Imp   134   Pla   Exi   Imp   140   Ne   Exi   Imp   140   Ne   Exi   Imp   Imp	provements (2035 Constrained) ewport Boulevard Southbound &  xisting Conditions ewport Boulevard Northbound &  xisting Conditions provements (2035 Constrained) lacentia Avenue & Wilson Street  xisting Conditions provements (2035 Buildout)	Fair Driv 1 Del Mar	ve 3 Avenue	2 f	2	3	1	2					
100 Ne	ewport Boulevard Southbound & xisting Conditions ewport Boulevard Northbound & xisting Conditions approvements (2035 Constrained) lacentia Avenue & Wilson Street xisting Conditions approvements (2035 Buildout)	1 Del Mar	3 Avenue	f	1			. ~	3	0	3	3	1
Exi   Imp	xisting Conditions ewport Boulevard Northbound & xisting Conditions approvements (2035 Constrained) lacentia Avenue & Wilson Street xisting Conditions approvements (2035 Buildout)	1 Del Mar	3 Avenue	f	1	•	1	3		1			
101 Ne	ewport Boulevard Northbound & xisting Conditions approvements (2035 Constrained) accentia Avenue & Wilson Street xisting Conditions approvements (2035 Buildout)		Avenue	f	1								
Exi   Imp	xisting Conditions reprovements (2035 Constrained) lacentia Avenue & Wilson Street xisting Conditions reprovements (2035 Buildout)		1			2	0	0	0	0	0	4	0
Imp   Exi   Imp   117	nprovements (2035 Constrained) lacentia Avenue & Wilson Street xisting Conditions nprovements (2035 Buildout)	0	0										
115 Pia Exi Imp 117 Fai Exi Imp 129 Ne Exi Imp 134 Pia Exi Imp 140 Ne Exi Imp Imp Imp	lacentia Avenue & Wilson Street xisting Conditions approvements (2035 Buildout)			0	0	2	1	0.5	2.5	0	2	2	0
Exi   Imp     Imp     Imp	xisting Conditions nprovements (2035 Buildout)					1.5	1.5						
117 Fai Exi Imp 129 Nee Exi Imp 134 Pla Exi Imp 140 Nee Exi Imp Imp	nprovements (2035 Buildout)						•						
117 Fai Exi Imp 129 Ne Exi Imp 134 Pla Exi Imp 140 Ne Exi Imp Imp Imp		1	2	0	1	2	0	1	2	0	1	1	1
129 Nee Exi Imp 134 Pla Exi Imp 140 Nee Exi Imp Imp Imp												2	0
129	airview Street & Wilson Street						•						
129	xisting Conditions	1	2	1	1	1	0	1	2	0	1	1	0
129 Ne	provements (2035 Buildout)					2						2	
134 Pla	ewport Boulevard Northbound &	22nd Str	eet			•	•						
134 Pla	xisting Conditions	0	0	0	0	1	1	0.5	2.5	1	2	2	0
Exi Imp 140 Ne Exi Imp Imp	provements (2035 Constrained)					1.5	1.5	1	3				
140 Net Exi	lacentia Avenue & 19th Street			1			ı						
140 Net Exi	xisting Conditions	1	2	0	2	2	1	1	2	1	2	2	0
140 Net Exi Imp	nprovements (2035 Constrained)			1									
Exi Imp Imp	ewport Boulevard & 19th Street	l.	l	I.		l.	I	I	<u> </u>	<u>                                     </u>	-	]	
Imp Imp	xisting Conditions	1	3.5	1.5	1	2.5	1.5	1	4	0	2.5	1.5	1
Imp	nprovements (2035 Constrained)							0	5				
	pprovements (2035 Buildout)		2.5					1	3				
	ewport Boulevard & Broadway	l.		I.		l.	I	I	<u> </u>	<u>                                     </u>	-	]	
	xisting Conditions	1	3	1	1	1	0	1	4	d	1	1	0
	provements (2035 Constrained)		4	d	-		-						
	provements (2035 Buildout)		3	-					3				
	ewport Boulevard & Harbor Boule	evard		I		1	I	I				1	1
	xisting Conditions	0	3	0	0	0	0	2	4	0	1	0	2
	provements (2035 Constrained)		4				-						
	provements (2035 Buildout)		3						3				
	ewport Boulevard & 18th Street/F	Rocheste	r Street	I		1	I	I				1	1
	xisting Conditions	1	3	1	1	1	0	1	4	0	2	1	1
	pprovements (2035 Constrained)		4	0									
	pprovements (2035 Buildout)		3	1					3				
	acentia Avenue & 17th Street	1		I		1	I	I				1	1
	xisting Conditions	1	2	0	1	1	0	1	2	0	1	1	0
	provements (2035 Buildout)				-		1						1
	uperior Avenue & 17th Street	1	1	I		1		I				1	1
	xisting Conditions	1	2	0	1	2	0	1	0.5	1.5	1	2	1
	provements (2035 Constrained)	<u> </u>	<del>-</del> -		1.5	1.5		<u> </u>	1	2	· ·		<u> </u>
	ewport Boulevard & 17th Street	1	1	1			1	1	<u> </u>			<u>.                                    </u>	1
	xisting Conditions	2	3	1	2	3	1	1	4	0	3	2	0
	J.							·	<u> </u>	1			
	idrovements (2035 Constrainem	<u> </u>	2			<del>                                     </del>			3	<u> </u>			
153 Ora	nprovements (2035 Constrained) nprovements (2035 Buildout)												1

Table 4.16-11
Future Intersection Improvements

		1 (	iture int	.01300110	лт шпрі								
						Interse	ction Ap	proach	Lanes				
		Sc	outhbour	nd	W	/estbou	nd	No	orthbou	nd	E	astbour	nd
Loc. #	Intersection (NS & EW)	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	Existing Conditions	1	1	1	1	2	1	1	1	1	1	2	1
	Improvements (2035 Buildout)					3						3	
154	Santa Ana Avenue & 17th Street												
	Existing Conditions	1	1	1	1	2	1	1	1	1	1	2	1
	Improvements (2035 Buildout)					3						3	
155	Tustin Avenue & 17th Street												
	Existing Conditions	1	1	1	1	2	0	1	1	1	1	2	1
	Improvements (2035 Buildout)					3						3	0
156	Irvine Avenue & 17th Street												
	Existing Conditions	2	2	0	1	2	0	2	2	0	2	2	0
	Improvements (2035 Constrained)			1									1
157	Newport Boulevard & 16th Street												
	Existing Conditions	1	3	1	0	1	0	1	3	0	0	1	0
	Improvements (2035 Buildout)		2						2				
Lancont	ry notations: d = de-facto right-turn la	ano (curh	Jano 10	foot or wi	dor)								
Lane em	9	•	Idile 19	ieel oi wi	uer)								
	f = free right-turn lane	9											

#### **Future Traffic Conditions**

Year 2035 ADT V/C ratios on the City's arterial roadway system based on proposed General Plan were projected for both the Constrained Highway Network and Buildout Highway Network Scenarios. The data are presented Table 4.16-12 (2035 Constrained Highway Network and Buildout Highway Network ADT Volumes and V/C Ratios). As Table 4.16-12 indicates, various roadways throughout the City are forecast to exceed their theoretical maximum ADT capacities under year 2035 traffic conditions. However, none of those locations are considered to be actual future deficiencies because, as is demonstrated below, the intersections analyzed along those roadway segments are forecast to operate at acceptable levels of service during the A.M. and P.M. peak hours with the future intersection improvements summarized in Table 4.16-11. Also note that Table 4.16-12 indicates that the following locations exceed their theoretical maximum ADT capacities under 2035 conditions based on the constrained highway network:

- Wilson Street (Pomona Avenue to Harbor Boulevard)
- Wilson Street (Fairview Road to Newport Boulevard)
- 17<sup>th</sup> Street (Monrovia Avenue to Placentia Avenue)

As indicated in Table 4.16-12, each of these roadways is forecast to operate within its theoretical maximum ADT capacity under year 2035 conditions with the future Wilson Street and 17<sup>th</sup> Street roadway widening improvements that are planned as part of buildout of the City of Costa Mesa MPSH.

Year 2035 AM and PM peak hour ICU values for study intersections for the proposed General Plan are summarized in Table 4.16-13 (2035 Constrained Highway Network and Buildout Highway Network Intersection LOS Summary). Actual turn volumes and ICU calculation worksheets are included in Appendix A of the traffic study. Based on the intersection LOS performance criteria outlined in the traffic study, each of the intersection locations analyzed in the City is forecast to operate at an acceptable LOS (i.e., LOS "D" or better) under year 2035 conditions with the future intersection improvements summarized earlier in Table 4.16-11.

Table 4.16-12 2035 Constrained Highway Network and Buildout Highway Network ADT Volumes and V/C Ratios

		J	j			5 Proposed				5 Proposed	General F	Plan
		Existing C	onditions		(Con:	strained Hig	ghway Net	work)	(Bu	ildout High	way Netwo	ork)
	Lanes &				Lanes &				Lanes &			
	Roadway	ADT			Roadway	ADT			Roadway	ADT		
Roadway	Туре	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C
Adams w/o Placentia	6M-A	68,000	39,000	.57	6M-A	68,000	46,000	.68	6M-A	68,000	46,000	.68
Adams e/o Placentia	6M-A	68,000	38,000	.56	6M-A	68,000	44,000	.65	6M-A	68,000	43,000	.63
Adams e/o Mesa Verde E.	6M-A	68,000	38,000	.56	6M-A	68,000	43,000	.63	6M-A	68,000	43,000	.63
Adams w/o Harbor	6M-A	68,000	37,000	.54	6M-A	68,000	42,000	.62	6M-A	68,000	41,000	.60
Adams e/o Harbor	6M-A	68,000	29,000	.43	6M-A	68,000	35,000	.51	6M-A	68,000	34,000	.50
Adams w/o Fairview	5M-A	57,000	26,000	.46	5M-A	57,000	30,000	.53	5M-A	57,000	29,000	.51
Anaheim s/o 19th	2C	12,500	5,000	.40	2C	12,500	8,000	.64	2C	12,500	7,000	.56
Anaheim n/o Superior	2C	12,500	6,000	.48	2C	12,500	7,000	.56	2C	12,500	6,000	.48
Anton e/o Bristol	6M	56,000	23,000	.41	6M	56,000	36,000	.64	6M	56,000	36,000	.64
Anton s/o Sunflower	6M	56,000	5,000	.09	6M	56,000	7,000	.13	6M	56,000	6,000	.11
Arlington e/o Fairview	2S	12,500	5,000	.40	2S	12,500	7,000	.56	2S	12,500	7,000	.56
Ave of the Arts n/o Anton	4S	25,000	7,000	.28	4S	25,000	9,000	.36	4S	25,000	9,000	.36
Baker e/o Mesa Verde	2S	12,500	9,000	.72	2S	12,500	11,000	.88	4S	25,000	10,000	.40
Baker w/o Harbor	4S	25,000	14,000	.56	4S	25,000	16,000	.64	4S	25,000	16,000	.64
Baker e/o Harbor	4P-A	45,000	19,000	.42	4P-A	45,000	23,000	.51	4P-A	45,000	23,000	.51
Baker w/o Fairview	4P-A	45,000	23,000	.51	4P-A	45,000	28,000	.62	4P-A	45,000	28,000	.62
Baker e/o Fairview	4P-A	45,000	32,000	.71	4P-A	45,000	37,000	.82	4P-A	45,000	38,000	.84
Baker e/o Coolidge	4P-A	45,000	30,000	.67	4P-A	45,000	37,000	.82	4P-A	45,000	38,000	.84
Baker w/o Bear	4P-A	45,000	31,000	.69	4P-A	45,000	38,000	.84	4P-A	45,000	40,000	.89
Baker w/o Randolph	4P-A	45,000	24,000	.53	4P-A	45,000	30,000	.67	6M-A	68,000	36,000	.53
Baker w/o SR-55	4P-A	45,000	27,000	.60	4P-A	45,000	33,000	.73	6M-A	68,000	39,000	.57
Baker w/o Pullman	4P-A	45,000	20,000	.44	4P-A	45,000	23,000	.51	6M-A	68,000	26,000	.38
Baker e/o Pullman	5M-A	57,000	15,000	.26	5M-A	57,000	17,000	.30	6M-A	68,000	20,000	.29
Bay e/o Harbor	2C	12,500	4,000	.32	2C	12,500	6,000	.48	2C	12,500	5,000	.40
Bay e/o Newport	2C	12,500	6,000	.48	2C	12,500	6,000	.48	2C	12,500	6,000	.48
Bear s/o Sunflower	6M	56,000	26,000	.46	6M	56,000	29,000	.52	6M	56,000	31,000	.55
Bear n/o South Coast	6M	56,000	30,000	.54	6M	56,000	34,000	.61	6M	56,000	35,000	.63
Bear n/o Paularino	4P	38,000	27,000	.71	4P	38,000	30,000	.79	6M	56,000	32,000	.57
Bristol s/o Sunflower	6M-A	68,000	41,000	.60	6M-A	68,000	49,000	.72	6M-A	68,000	48,000	.71
Bristol n/o Anton	8M-A	90,000	47,000	.52	8M-A	90,000	56,000	.62	8M-A	90,000	55,000	.61
Bristol s/o Anton	10M-A	112,000	65,000	.58	10M-A	112,000	82,000	.73	10M-A	112,000	82,000	.73
Bristol n/o Paularino	6M	56,000	36,000	.64	6M	56,000	46,000	.82	6M	56,000	44,000	.79

Table 4.16-12 2035 Constrained Highway Network and Buildout Highway Network ADT Volumes and V/C Ratios

	oo oononan					5 Proposec				5 Proposed	General I	Plan
		Existing C	onditions			strained Hig				ildout High		
	Lanes &				Lanes &				Lanes &			
	Roadway	ADT			Roadway	ADT			Roadway	ADT		
Roadway	Туре	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C
Bristol n/o Baker	6M	56,000	31,000	.55	6M	56,000	41,000	.73	6M	56,000	40,000	.71
Bristol n/o Bear	6M	56,000	22,000	.39	6M	56,000	30,000	.54	6M	56,000	30,000	.54
Bristol s/o Bear	6M	56,000	26,000	.46	6M	56,000	36,000	.64	6M	56,000	35,000	.63
Bristol e/o Newport	6M	56,000	26,000	.46	6M	56,000	33,000	.59	6M	56,000	32,000	.57
Bristol w/o Redhill	6M	56,000	25,000	.45	6M	56,000	32,000	.57	6M	56,000	30,000	.54
Canyon n/o Victoria	2C	12,500	3,000	.24	2C	12,500	3,000	.24	2C	12,500	4,000	.32
Country Club n/o Mesa Verde	2C	12,500	4,000	.32	2C	12,500	4,000	.32	2C	12,500	4,000	.32
Del Mar w/o Orange	4S	25,000	12,000	.48	4S	25,000	12,000	.48	4P	38,000	18,000	.47
Del Mar w/o Santa Ana	2S	12,500	6,000	.48	2S	12,500	7,000	.56	4P	38,000	12,000	.32
Del Mar/University w/o Irvine	2S	12,500	6,000	.48	2S	12,500	7,000	.56	4P	38,000	10,000	.26
El Camino e/o Fairview	2S	12,500	6,000	.48	2S	12,500	7,000	.56	2S	12,500	7,000	.56
El Camino w/o Mendoza	2S	12,500	3,000	.24	2S	12,500	4,000	.32	2S	12,500	4,000	.32
Elden n/o 22nd	2C	12,500	2,000	.16	2C	12,500	2,000	.16	2C	12,500	2,000	.16
Fair e/o Harbor	4P	38,000	14,000	.37	4P	38,000	16,000	.42	4P	38,000	15,000	.39
Fair e/o Fairview	4P	38,000	21,000	.55	4P	38,000	26,000	.68	4P	38,000	25,000	.66
Fair w/o Newport	4P	38,000	24,000	.63	4P	38,000	28,000	.74	4P	38,000	27,000	.71
Fairview n/o South Coast	6M-A	68,000	42,000	.62	6M-A	68,000	47,000	.69	6M-A	68,000	47,000	.69
Fairview s/o South Coast	6M-A	68,000	61,000	.90	6M-A	68,000	70,000	1.03 (a)	6M-A	68,000	69,000	1.01 (a)
Fairview s/o I-405	6M-A	68,000	44,000	.65	6M-A	68,000	54,000	.79	6M-A	68,000	53,000	.78
Fairview s/o Baker	6M-A	68,000	48,000	.71	6M-A	68,000	59,000	.87	6M-A	68,000	60,000	.88
Fairview s/o Adams	6M-A	68,000	33,000	.49	6M-A	68,000	42,000	.62	6M-A	68,000	42,000	.62
Fairview n/o Fair	6M-A	68,000	23,000	.34	6M-A	68,000	32,000	.47	6M-A	68,000	33,000	.49
Fairview n/o Wilson	6M-A	68,000	13,000	.19	6M-A	68,000	18,000	.26	6M-A	68,000	19,000	.28
Fairview s/o Wilson	4P-A	45,000	12,000	.27	4P-A	45,000	17,000	.38	4P-A	45,000	18,000	.40
Gisler w/o Harbor	2S	12,500	11,000	.88	2S	12,500	12,000	.96	2S	12,500	12,000	.96
Hamilton e/o Placentia	2C	12,500	3,000	.24	2C	12,500	4,000	.32	2C	12,500	3,000	.24
Hamilton w/o Harbor	2C	12,500	8,000	.64	2C	12,500	11,000	.88	2C	12,500	9,000	.72
Harbor n/o Sunflower	6M-A	68,000	44,000	.65	6M-A	68,000	50,000	.74	6M-A	68,000	50,000	.74
Harbor n/o South Coast	6M-A	68,000	50,000	.74	6M-A	68,000	57,000	.84	6M-A	68,000	57,000	.84
Harbor n/o Baker	8M-A	90,000	59,000	.66	8M-A	90,000	71,000	.79	8M-A	90,000	69,000	.77
Harbor n/o Village	7M-A	79,000	62,000	.78	7M-A	79,000	75,000	.95	7M-A	79,000	73,000	.92
Harbor n/o Adams	7M-A	79,000	55,000	.70	7M-A	79,000	67,000	.85	7M-A	79,000	66,000	.84

Table 4.16-12 2035 Constrained Highway Network and Buildout Highway Network ADT Volumes and V/C Ratios

		J	- J			5 Proposec				5 Proposed	General I	Plan
		Existing C	onditions		(Con	strained Hig	ghway Net	work)	(Bu	ildout High	way Netwo	ork)
	Lanes &				Lanes &				Lanes &			
	Roadway	ADT			Roadway	ADT			Roadway	ADT		
Roadway	Туре	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C
Harbor s/o Adams	6M-A	68,000	47,000	.69	6M-A	68,000	58,000	.85	6M-A	68,000	56,000	.82
Harbor n/o Fair	6M-A	68,000	43,000	.63	6M-A	68,000	54,000	.79	6M-A	68,000	51,000	.75
Harbor n/o Wilson	6M-A	68,000	40,000	.59	6M-A	68,000	52,000	.76	6M-A	68,000	48,000	.71
Harbor n/o Victoria	6M-A	68,000	39,000	.57	6M-A	68,000	50,000	.74	6M-A	68,000	44,000	.65
Harbor n/o Bay	6M-A	68,000	27,000	.40	6M-A	68,000	35,000	.51	6M-A	68,000	32,000	.47
Harbor n/o 19th	6M-A	68,000	27,000	.40	6M-A	68,000	38,000	.56	6M-A	68,000	34,000	.50
Harbor s/o 19th	6M-A	68,000	18,000	.26	6M-A	68,000	23,000	.34	6M-A	68,000	21,000	.31
Hyland s/o MacArthur	4P	38,000	10,000	.26	4P	38,000	11,000	.29	4P	38,000	11,000	.29
Hyland s/o Scenic	4P	38,000	7,000	.18	4P	38,000	8,000	.21	4P	38,000	8,000	.21
Hyland s/o Sunflower	4P	38,000	7,000	.18	4P	38,000	9,000	.24	4P	38,000	9,000	.24
Industrial w/o Newport	2C	12,500	5,000	.40	2C	12,500	5,000	.40	2C	12,500	6,000	.48
Irvine s/o Bristol	6M	56,000	26,000	.46	6M	56,000	30,000	.54	6M	56,000	29,000	.52
Irvine n/o Mesa	6M	56,000	21,000	.38	6M	56,000	24,000	.43	6M	56,000	23,000	.41
Irvine n/o University	4P	38,000	26,000	.68	4P	38,000	30,000	.79	4P	38,000	30,000	.79
Irvine n/o 22nd	4P	38,000	28,000	.74	4P	38,000	32,000	.84	4P	38,000	29,000	.76
Irvine s/o 22nd	4P	38,000	26,000	.68	4P	38,000	30,000	.79	4P	38,000	26,000	.68
Irvine n/o 19th	4P	38,000	29,000	.76	4P	38,000	33,000	.87	4P	38,000	28,000	.74
Irvine n/o 17th	4P	38,000	20,000	.53	4P	38,000	23,000	.61	4P	38,000	18,000	.47
Irvine n/o 16th	4P	38,000	14,000	.37	4P	38,000	15,000	.39	4P	38,000	15,000	.39
MacArthur w/o Harbor	6M	56,000	23,000	.41	6M	56,000	25,000	.45	6M	56,000	25,000	.45
Merrimac e/o Harbor	4P	38,000	10,000	.26	4P	38,000	13,000	.34	4P	38,000	12,000	.32
Merrimac w/o Fairview	4P	38,000	10,000	.26	4P	38,000	11,000	.29	4P	38,000	11,000	.29
Mesa w/o Orange	2S	12,500	7,000	.56	2S	12,500	7,000	.56	2S	12,500	7,000	.56
Mesa e/o Santa Ana	2S	12,500	7,000	.56	2S	12,500	8,000	.64	2S	12,500	8,000	.64
Mesa Verde W. n/o Adams	4P	38,000	7,000	.18	4P	38,000	8,000	.21	4P	38,000	8,000	.21
Mesa Verde W. w/o Country Club	4P	38,000	7,000	.18	4P	38,000	8,000	.21	4P	38,000	8,000	.21
Mesa Verde E. n/o Baker	4P	38,000	4,000	.11	4P	38,000	5,000	.13	4P	38,000	5,000	.13
Mesa Verde E. n/o Adams	4P	38,000	6,000	.16	4P	38,000	7,000	.18	4P	38,000	7,000	.18
Mesa Verde E. s/o Adams	4P	38,000	10,000	.26	4P	38,000	11,000	.29	4P	38,000	11,000	.29
Mesa Verde E. w/o Harbor	4P	38,000	11,000	.29	4P	38,000	13,000	.34	4P	38,000	13,000	.34
Monrovia s/o 19th	2C	12,500	6,000	.48	2C	12,500	6,000	.48	2C	12,500	6,000	.48
Monrovia n/o 17th	2C	12,500	6,000	.48	2C	12,500	6,000	.48	2C	12,500	6,000	.48
Newport SB n/o Mesa	3M-A	34,000	26,000	.76	3M-A	34,000	30,000	.88	3M-A	34,000	31,000	.91

Table 4.16-12 2035 Constrained Highway Network and Buildout Highway Network ADT Volumes and V/C Ratios

		J	<i></i>		203	5 Proposed	General F	Plan	203	5 Proposed	General	Plan
		Existing C	onditions		(Con:	strained Hig	ghway Net	work)	(Bu	ildout High	way Netw	ork)
	Lanes &				Lanes &				Lanes &			
	Roadway	ADT			Roadway	ADT			Roadway	ADT		
Roadway	Type	Capacity	ADT	ADT V/C	Type	Capacity	ADT	ADT V/C	Type	Capacity	ADT	ADT V/C
Newport SB n/o Fair/Del Mar	4M-A	45,000	24,000	.53	4M-A	45,000	28,000	.62	4M-A	45,000	28,000	.62
Newport SB n/o Santa Isabel	3M-A	34,000	10,000	.29	3M-A	34,000	12,000	.35	3M-A	34,000	14,000	.41
Newport SB n/o Victoria	3M-A	34,000	30,000	.88	3M-A	34,000	38,000	1.12 (a)	3M-A	34,000	37,000	1.09 (a)
Newport SB s/o Victoria	2M-A	23,000	11,000	.48	2M-A	23,000	17,000	.74	2M-A	23,000	18,000	.78
Newport SB s/o Ford	2M-A	23,000	8,000	.35	2M-A	23,000	12,000	.52	2M-A	23,000	12,000	.52
Newport NB n/o Mesa	2M-A	23,000	7,000	.30	2M-A	23,000	10,000	.43	2M-A	23,000	10,000	.43
Newport NB n/o Fair/Del Mar	3M-A	34,000	24,000	.71	3M-A	34,000	27,000	.79	3M-A	34,000	27,000	.79
Newport NB n/o Santa Isabel	2M-A	23,000	13,000	.57	2M-A	23,000	15,000	.65	2M-A	23,000	16,000	.70
Newport NB n/o 22nd	3M-A	34,000	28,000	.82	3M-A	34,000	32,000	.94	3M-A	34,000	30,000	.88
Newport NB s/o 22nd	3M-A	34,000	13,000	.38	3M-A	34,000	15,000	.44	3M-A	34,000	15,000	.44
Newport NB s/o 20th	2M-A	23,000	9,000	.39	2M-A	23,000	10,000	.43	2M-A	23,000	10,000	.43
Newport s/o 19th	7M-A	79,000	66,000	.84	8M-A	90,000	79,000	.88	6M-A	68,000	31,000	.46
Newport n/o 17th	7M-A	79,000	79,000	1.00	8M-A	90,000	94,000	1.04 (a)	6M-A	68,000	44,000	.65
Newport n/o Industrial	6M-A	68,000	51,000	.75	6M-A	68,000	57,000	.84	6M-A	68,000	16,000	.24
Ogle e/o Orange	2C	12,500	2,000	.16	2C	12,500	2,000	.16	2C	12,500	2,000	.16
Orange n/o Del Mar	2C	12,500	2,000	.16	2C	12,500	3,000	.24	2C	12,500	2,000	.16
Orange n/o Santa Isabel	2C	12,500	3,000	.24	2C	12,500	4,000	.32	2C	12,500	4,000	.32
Orange n/o 22nd	2C	12,500	4,000	.32	2C	12,500	5,000	.40	2C	12,500	5,000	.40
Orange n/o 21st	2C	12,500	6,000	.48	2C	12,500	7,000	.56	2C	12,500	6,000	.48
Orange n/o 19th	2C	12,500	7,000	.56	2C	12,500	8,000	.64	2C	12,500	6,000	.48
Orange n/o 17th	2C	12,500	12,000	.96	2C	12,500	13,000	1.04 (a)	2C	12,500	12,000	.96
Orange n/o 16th	2C	12,500	8,000	.64	2C	12,500	9,000	.72	2C	12,500	6,000	.48
Orange n/o 15th	2C	12,500	5,000	.40	2C	12,500	5,000	.40	2C	12,500	5,000	.40
Park s/o 19th	2C	12,500	5,000	.40	2C	12,500	6,000	.48	2C	12,500	6,000	.48
Paularino e/o Fairview	2C	12,500	6,000	.48	2C	12,500	6,000	.48	2C	12,500	7,000	.56
Paularino e/o Bear	2C	12,500	8,000	.64	2C	12,500	9,000	.72	2C	12,500	9,000	.72
Paularino e/o Bristol	4P	38,000	16,000	.42	4P	38,000	19,000	.50	4P	38,000	15,000	.39
Paularino w/o Redhill	4P	38,000	12,000	.32	4P	38,000	14,000	.37	4P	38,000	13,000	.34
Placentia s/o Adams	4P	38,000	11,000	.29	4P	38,000	13,000	.34	4P	38,000	13,000	.34
Placentia n/o Wilson	4P	38,000	12,000	.32	4P	38,000	15,000	.39	4P	38,000	14,000	.37
Placentia n/o Victoria	4P	38,000	16,000	.42	4P	38,000	19,000	.50	4P	38,000	22,000	.58
Placentia n/o Hamilton	4P	38,000	27,000	.71	4P	38,000	31,000	.82	4P	38,000	30,000	.79

Table 4.16-12 2035 Constrained Highway Network and Buildout Highway Network ADT Volumes and V/C Ratios

	33 001131141	3	. j			5 Proposed				5 Proposed	General I	Plan
		Existing C	onditions		(Con	strained Hig	ghway Net	work)	(Bu	ildout High	way Netwo	ork)
	Lanes &				Lanes &				Lanes &			
	Roadway	ADT			Roadway	ADT			Roadway	ADT		
Roadway	Туре	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C
Placentia s/o Hamilton	4P	38,000	24,000	.63	4P	38,000	27,000	.71	4P	38,000	26,000	.68
Placentia s/o 19th	4P	38,000	24,000	.63	4P	38,000	29,000	.76	4P	38,000	25,000	.66
Placentia n/o 17th	4P	38,000	17,000	.45	4P	38,000	21,000	.55	4P	38,000	18,000	.47
Placentia n/o 16th	4P	38,000	15,000	.39	4P	38,000	17,000	.45	4P	38,000	15,000	.39
Pomona n/o Victoria	2C	12,500	4,000	.32	2C	12,500	4,000	.32	2C	12,500	5,000	.40
Pomona n/o Hamilton	2C	12,500	8,000	.64	2C	12,500	10,000	.80	2C	12,500	9,000	.72
Pomona n/o 19th	2C	12,500	7,000	.56	2C	12,500	9,000	.72	2C	12,500	9,000	.72
Pomona n/o 18th	2C	12,500	7,000	.56	2C	12,500	8,000	.64	2C	12,500	8,000	.64
Pomona s/o 18th	2C	12,500	10,000	.80	2C	12,500	12,000	.96	2C	12,500	11,000	.88
Pomona n/o 17th	2C	12,500	5,000	.40	2C	12,500	6,000	.48	2C	12,500	5,000	.40
Red Hill n/o Airport Loop	4P	38,000	17,000	.45	4P	38,000	21,000	.55	4P	38,000	21,000	.55
Red Hill n/o Paularino	4P	38,000	19,000	.50	4P	38,000	23,000	.61	4P	38,000	23,000	.61
Red Hill n/o Baker	4P	38,000	18,000	.47	4P	38,000	22,000	.58	4P	38,000	23,000	.61
Redhill n/o Kalmus	4P	38,000	15,000	.39	4P	38,000	18,000	.47	4P	38,000	17,000	.45
Red Hill n/o Bristol	4P	38,000	19,000	.50	4P	38,000	22,000	.58	4P	38,000	21,000	.55
Sakioka n/o Anton	4P	38,000	6,000	.16	4P	38,000	8,000	.21	4P	38,000	8,000	.21
Santa Ana s/o Bristol	4S	25,000	10,000	.40	4S	25,000	12,000	.48	4S	25,000	12,000	.48
Santa Ana n/o Del Mar/University	4S	25,000	7,000	.28	4S	25,000	9,000	.36	4S	25,000	9,000	.36
Santa Ana n/o Santa Isabel	2C	12,500	6,000	.48	2C	12,500	7,000	.56	2C	12,500	7,000	.56
Santa Ana n/o 22nd	2C	12,500	6,000	.48	2C	12,500	7,000	.56	2C	12,500	6,000	.48
Santa Ana n/o 21st	2C	12,500	5,000	.40	2C	12,500	6,000	.48	2C	12,500	5,000	.40
Santa Ana n/o 19th	2C	12,500	6,000	.48	2C	12,500	7,000	.56	2C	12,500	6,000	.48
Santa Ana n/o 17th	2C	12,500	8,000	.64	2C	12,500	9,000	.72	2C	12,500	7,000	.56
Santa Ana n/o 16th	2C	12,500	6,000	.48	2C	12,500	7,000	.56	2C	12,500	5,000	.40
Santa Ana n/o 15th	2C	12,500	5,000	.40	2C	12,500	5,000	.40	2C	12,500	4,000	.32
Santa Isabel e/o Newport	2S	12,500	4,000	.32	2S	12,500	4,000	.32	2S	12,500	4,000	.32
Santa Isabel e/o Orange	2S	12,500	3,000	.24	2S	12,500	3,000	.24	2S	12,500	3,000	.24
South Coast w/o Harbor	4P	38,000	11,000	.29	4P	38,000	15,000	.39	4P	38,000	15,000	.39
South Coast e/o Harbor	4P	38,000	12,000	.32	4P	38,000	20,000	.53	4P	38,000	20,000	.53
South Coast w/o Fairview	4P	38,000	13,000	.34	4P	38,000	21,000	.55	4P	38,000	21,000	.55
South Coast e/o Wimbledon	4P	38,000	16,000	.42	4P	38,000	19,000	.50	4P	38,000	19,000	.50
South Coast w/o Bear	4P	38,000	16,000	.42	4P	38,000	18,000	.47	4P	38,000	18,000	.47
Sunflower e/o Hyland	4P	38,000	5,000	.13	4P	38,000	7,000	.18	4P	38,000	7,000	.18

Table 4.16-12 2035 Constrained Highway Network and Buildout Highway Network ADT Volumes and V/C Ratios

	2000 001131141			Carra Barra	203	5 Proposed	General I	Plan	2035 Proposed General Plan				
		Existing C	onditions		(Con	strained Hig	ghway Net	work)		ildout High	way Netwo	ork)	
	Lanes &				Lanes &				Lanes &				
	Roadway	ADT			Roadway				Roadway				
Roadway	Туре	Capacity	ADT	ADT V/C	Type	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C	
Sunflower w/o Harbor	4P	38,000	7,000	.18	4P	38,000	10,000	.26	4P	38,000	10,000	.26	
Sunflower e/o Harbor	4P	38,000	13,000	.34	4P	38,000	17,000	.45	4P	38,000	17,000	.45	
Sunflower w/o Susan	4P	38,000	13,000	.34	4P	38,000	17,000	.45	4P	38,000	17,000	.45	
Sunflower w/o Fairview	4P	38,000	17,000	.45	4P	38,000	21,000	.55	4P	38,000	21,000	.55	
Sunflower w/o Fuschia/Raitt	4P	38,000	18,000	.47	4P	38,000	23,000	.61	4P	38,000	23,000	.61	
Sunflower w/o Bristol	6M-A	68,000	31,000	.46	6M-A	68,000	40,000	.59	6M-A	68,000	39,000	.57	
Sunflower e/o Bristol	6M-A	68,000	25,000	.37	6M-A	68,000	33,000	.49	6M-A	68,000	33,000	.49	
Sunflower w/o Anton	6M-A	68,000	19,000	.28	6M-A	68,000	25,000	.37	6M-A	68,000	25,000	.37	
Sunflower w/o Main	6M-A	68,000	22,000	.32	6M-A	68,000	31,000	.46	6M-A	68,000	31,000	.46	
Superior s/o Anaheim	4P	38,000	12,000	.32	4P	38,000	13,000	.34	4P	38,000	11,000	.29	
Superior n/o 16th/Industrial	4P	38,000	23,000	.61	4P	38,000	29,000	.76	4P	38,000	27,000	.71	
Tustin n/o 21st	2C	12,500	3,000	.24	2C	12,500	3,000	.24	2C	12,500	3,000	.24	
Tustin n/o 20th	2C	12,500	2,000	.16	2C	12,500	3,000	.24	2C	12,500	2,000	.16	
Tustin n/o 19th	2C	12,500	4,000	.32	2C	12,500	5,000	.40	2C	12,500	4,000	.32	
Tustin n/o 17th	2C	12,500	5,000	.40	2C	12,500	6,000	.48	2C	12,500	4,000	.32	
Tustin n/o 16th	2C	12,500	7,000	.56	2C	12,500	7,000	.56	2C	12,500	7,000	.56	
Victoria w/o Pacific	4P-A	45,000	30,000	.67	4P-A	45,000	34,000	.76	4P-A	45,000	34,000	.76	
Victoria w/o National	4P-A	45,000	28,000	.62	4P-A	45,000	32,000	.71	4P-A	45,000	31,000	.69	
Victoria w/o Placentia	4P-A	45,000	30,000	.67	4P-A	45,000	33,000	.73	4P-A	45,000	33,000	.73	
Victoria e/o Placentia	4P-A	45,000	27,000	.60	4P-A	45,000	31,000	.69	4P-A	45,000	27,000	.60	
Victoria e/o Harbor	4P-A	45,000	29,000	.64	4P-A	45,000	33,000	.73	4P-A	45,000	32,000	.71	
Victoria w/o Harbor	4P-A	45,000	31,000	.69	4P-A	45,000	39,000	.87	4P-A	45,000	33,000	.73	
Victoria e/o College	4P-A	45,000	28,000	.62	4P-A	45,000	33,000	.73	4P-A	45,000	32,000	.71	
Wilson w/o Placentia	2S	12,500	7,000	.56	2S	12,500	8,000	.64	2S	12,500	8,000	.64	
Wilson e/o Placentia	2S-A	15,000	12,000	.80	2S-A	15,000	14,000	.93	4S-A	30,000	21,000	.70	
Wilson e/o Pomona	2S-A	15,000	15,000	1.00	2S-A	15,000	17,000	1.13 (a)	4S-A	30,000	26,000	.87	
Wilson w/o Harbor	2S-A	15,000	17,000	1.13 (a)	2S-A	15,000	20,000	1.33 (a)	4S-A	30,000	29,000	.97	
Wilson e/o Harbor	4S-A	30,000	17,000	.57	4S-A	30,000	19,000	.63	4S-A	30,000	24,000	.80	
Wilson e/o Fairview	2S-A	15,000	13,000	.87	2S-A	15,000	16,000	1.07 (a)	4S-A	30,000	20,000	.67	
Wilson e/o Newport	2S	12,500	6,000	.48	2S	12,500	7,000	.56	2S	12,500	6,000	.48	
15th e/o Newport	2C	12,500	2,000	.16	2C	12,500	2,000	.16	2C	12,500	3,000	.24	
W. 16th e/o Monrovia	2C	12,500	4,000	.32	2C	12,500	5,000	.40	2C	12,500	5,000	.40	

Table 4.16-12 2035 Constrained Highway Network and Buildout Highway Network ADT Volumes and V/C Ratios

		2035 Proposed General Plan							2035 Proposed General Plan					
		Existing C	onditions		(Con	strained Hig	ghway Net	work)	(Bu	ildout High	way Netwo	ork)		
	Lanes &				Lanes &				Lanes &					
	Roadway	ADT			Roadway	ADT			Roadway	ADT				
Roadway	Туре	Capacity	ADT	ADT V/C	Type	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C		
W. 16th e/o Placentia	2C	12,500	5,000	.40	2C	12,500	6,000	.48	2C	12,500	6,000	.48		
16th w/o Newport	2C	12,500	2,000	.16	2C	12,500	3,000	.24	2C	12,500	4,000	.32		
16th e/o Newport	2C	12,500	4,000	.32	2C	12,500	5,000	.40	2C	12,500	5,000	.40		
16th e/o Orange	2C	12,500	3,000	.24	2C	12,500	3,000	.24	2C	12,500	3,000	.24		
16th e/o Santa Ana	2C	12,500	3,000	.24	2C	12,500	3,000	.24	2C	12,500	3,000	.24		
16th e/o Tustin	2C	12,500	3,000	.24	2C	12,500	3,000	.24	2C	12,500	3,000	.24		
W. 17th w/o Monrovia	2C	12,500	5,000	.40	2C	12,500	11,000	.88	4S	25,000	9,000	.36		
W. 17th w/o Placentia	2C	12,500	7,000	.56	2C	12,500	13,000	1.04 (a)	4S	25,000	11,000	.44		
W. 17th e/o Placentia	2S	12,500	9,000	.72	2S	12,500	12,000	.96	4P	38,000	14,000	.37		
W. 17th w/o Pomona	2S	12,500	10,000	.80	2S	12,500	12,000	.96	4P	38,000	15,000	.39		
17th w/o Orange	6M-A	68,000	35,000	.51	6M-A	68,000	44,000	.65	6M-A	68,000	53,000	.78		
17th w/o Westminster	4P-A	45,000	34,000	.76	4P-A	45,000	41,000	.91	6M-A	68,000	47,000	.69		
17th w/o Santa Ana	4P-A	45,000	33,000	.73	4P-A	45,000	40,000	.89	6M-A	68,000	45,000	.66		
17th e/o Santa Ana	4P-A	45,000	34,000	.76	4P-A	45,000	41,000	.91	6M-A	68,000	46,000	.68		
17th w/o Irvine	4P	38,000	30,000	.79	4P	38,000	37,000	.97	4P	38,000	39,000	1.03 (a)		
W. 18th e/o Monrovia	2C	12,500	5,000	.40	2C	12,500	6,000	.48	2C	12,500	6,000	.48		
W. 18th e/o Placentia	2C	12,500	7,000	.56	2C	12,500	8,000	.64	2C	12,500	7,000	.56		
W. 18th w/o Anaheim	2C	12,500	10,000	.80	2C	12,500	12,000	.96	2C	12,500	12,000	.96		
W. 18th w/o Park	2C	12,500	11,000	.88	2C	12,500	13,000	1.04 (a)	2C	12,500	13,000	1.04 (a)		
W. 19th w/o Placentia	2S	12,500	13,000	1.04 (a)	2S	12,500	14,000	1.12 (a)	4S	25,000	13,000	.52		
W. 19th e/o Placentia	4S	25,000	22,000	.88	4S	25,000	29,000	1.16 (a)	4S	25,000	26,000	1.04 (a)		
W. 19th w/o Park	6M	56,000	32,000	.57	6M	56,000	43,000	.77	6M	56,000	39,000	.70		
W. 19th e/o Harbor	6M	56,000	32,000	.57	6M	56,000	38,000	.68	6M	56,000	35,000	.63		
19th e/o Newport	4S	25,000	12,000	.48	4S	25,000	13,000	.52	4S	25,000	9,000	.36		
19th w/o Orange	2C	12,500	11,000	.88	2C	12,500	11,000	.88	2C	12,500	8,000	.64		
19th e/o Orange	2C	12,500	8,000	.64	2C	12,500	9,000	.72	2C	12,500	7,000	.56		
19th e/o Santa Ana	2C	12,500	6,000	.48	2C	12,500	6,000	.48	2C	12,500	6,000	.48		
19th w/o Irvine	2C	12,500	6,000	.48	2C	12,500	6,000	.48	2C	12,500	6,000	.48		
20th e/o Newport	2C	12,500	4,000	.32	2C	12,500	4,000	.32	2C	12,500	3,000	.24		
20th e/o Tustin	2C	12,500	3,000	.24	2C	12,500	3,000	.24	2C	12,500	3,000	.24		
21st e/o Newport	2C	12,500	3,000	.24	2C	12,500	3,000	.24	2C	12,500	3,000	.24		
21st w/o Irvine	2C	12,500	2,000	.16	2C	12,500	2,000	.16	2C	12,500	2,000	.16		
22nd e/o Newport	2C	12,500	10,000	.80	2C	12,500	11,000	.88	4S	25,000	10,000	.40		

Table 4.16-12 2035 Constrained Highway Network and Buildout Highway Network ADT Volumes and V/C Ratios

		Existing C	onditions			2035 Proposed General Plan (Constrained Highway Network)				2035 Proposed General Plan (Buildout Highway Network)			
	Lanes & Roadway	ADT			Lanes & Roadway	ADT			Lanes & Roadway	ADT			
Roadway	Туре	Capacity	ADT	ADT V/C	Туре	Capacity	ADT	ADT V/C	Type	Capacity	ADT	ADT V/C	
22nd e/o Orange	2C	12,500	7,000	.56	2C	12,500	7,000	.56	2C	12,500	6,000	.48	
22nd e/o Santa Ana	2C	12,500	6,000	.48	2C	12,500	7,000	.56	2C	12,500	5,000	.40	
22nd/Santiago w/o Irvine	2C	12,500	5,000	.40	2C	12,500	5,000	.40	2C	12,500	4,000	.32	

Abbreviations: ADT - Average Daily Traffic

V/C - Volume/Capacity Ratio

Roadway Types: M – Major Arterial (Standard) M-A – Major Arterial (Augmented)

P – Primary Arterial (Standard)
S – Secondary Arterial (Standard)
P-A – Primary Arterial (Augmented)
S-A – Secondary Arterial (Augmented)

C - Collector Arterial

(a) Although the theoretical maximum ADT capacity is exceeded at this location, this is not considered to be a deficiency because the intersections analyzed along this roadway segment are forecast to operate at acceptable levels of service during the AM and PM peak hours.

Table 4.16-13
2035 Constrained Highway Network and Buildout Highway Network Intersection LOS Summary

2000 00/15/10	Existing Conditions				2035	5 Proposed	d General ghway Ne	Plan	203	5 Proposed Idout High		
	AM Pe	ak Hour		ak Hour		ak Hour		ak Hour		ak Hour		ak Hour
Intersection	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
1. Harbor & Scenic/Lake Center	.57	А	.60	А	.64	В	.69	В	.65	В	.68	В
2. Harbor & Sunflower	.50	А	.65	В	.61	В	.72	С	.60	А	.72	С
3. Susan & Sunflower	.35	А	.58	А	.49	А	.64	В	.48	А	.67	В
4. Fairview & Sunflower	.61	В	.58	А	.73	С	.70	В	.73	С	.70	В
5. Wimbledon & Sunflower	.28	А	.47	Α	.37	А	.55	Α	.38	А	.55	А
6. Fuchsia/Raitt & Sunflower	.25	А	.43	Α	.37	А	.52	Α	.37	А	.52	А
7. Bear & Sunflower	.36	А	.37	Α	.43	А	.46	Α	.44	А	.47	А
9. Bristol & Sunflower	.58	А	.76	С	.69	В	.89	D	.68	В	.88	D
11. Ave of the Arts & Sunflower	.30	Α	.42	Α	.45	Α	.57	Α	.45	Α	.57	А
12. Sakioka & Sunflower	.29	Α	.41	А	.38	Α	.52	Α	.37	Α	.52	А
13. Anton & Sunflower	.40	Α	.42	А	.44	Α	.55	Α	.43	Α	.53	А
14. Harbor & Law Court	.55	А	.69	В	.66	В	.80	С	.65	В	.78	С
15. Bear & Crystal Court	.19	Α	.46	А	.19	А	.53	А	.20	А	.57	А
16. Bristol & Town Center	.38	Α	.39	А	.44	Α	.55	Α	.44	Α	.54	А
17. Hyland & South Coast/I-405 NB On-Ramp	.23	А	.60	А	.26	А	.56	А	.26	А	.58	А
18. Harbor & South Coast	.48	А	.66	В	.56	А	.84	D	.57	А	.85	D
19. Susan & South Coast	.26	А	.45	А	.46	А	.68	В	.46	А	.67	В
20. Fairview & South Coast	.53	А	.60	А	.69	В	.79	С	.69	В	.79	С
24. Bear & South Coast	.24	А	.43	А	.26	А	.54	А	.27	А	.55	А
25. Bristol & Anton	.39	А	.63	В	.45	А	.84	D	.45	А	.83	D
27. Ave of the Arts & Anton	.36	А	.42	А	.48	А	.71	С	.48	А	.73	С
28. Sakioka & Anton	.28	А	.39	А	.40	Α	.55	А	.40	А	.54	А
30. Hyland & MacArthur	.52	А	.91	E	.67	В	.87	D	.67	В	.88	D
36. Bear & Metro Point	.24	А	.45	А	.24	А	.49	А	.25	А	.52	А
38. Harbor & I-405 NB Ramps	.68	В	.78	С	.81	D	.89	D	.84	D	.83	D
39. Harbor & I-405 SB Ramps	.42	А	.59	Α	.62	В	.73	С	.62	В	.71	С
40. Fairview & I-405 NB Ramps	.53	А	.60	Α	.68	В	.75	С	.68	В	.71	С
41. Fairview & I-405 SB Ramps	.58	А	.57	Α	.65	В	.70	В	.62	В	.69	В
42. Bristol & I-405 NB Ramps	.47	А	.76	С	.53	А	.84	D	.53	А	.84	D
43. Bristol & I-405 SB Ramps	.50	А	.56	А	.54	А	.69	В	.52	А	.68	В
44. Harbor & Gisler	.57	А	.74	С	.58	Α	.78	С	.58	Α	.77	С
45. Harbor & Date	.44	А	.50	Α	.49	Α	.60	А	.50	Α	.59	А
46. Harbor & Nutmeg	.43	А	.55	А	.48	А	.67	В	.48	А	.66	В

Table 4.16-13
2035 Constrained Highway Network and Buildout Highway Network Intersection LOS Summary

2000 001131	irumca riigi	iway new	ork and b	anaoat m	2035 Proposed General Plan				5 Proposed	General	Plan	
		Existing C	Conditions			trained Hi				ldout High		
	AM Pe	ak Hour		ak Hour		ak Hour		ak Hour		ak Hour		ak Hour
Intersection	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
47. Fairview & Paularino	.47	А	.49	Α	.58	Α	.57	А	.56	А	.55	Α
48. Bear & Paularino	.36	Α	.65	В	.40	Α	.76	С	.41	А	.75	С
49. Bristol & Paularino	.46	Α	.64	В	.58	А	.79	С	.54	А	.79	С
51. SR-55 SB Ramps & Paularino	.71	С	.64	В	.71	С	.64	В	.70	В	.62	В
52. SR-55 NB Ramps & Paularino	.67	В	.71	С	.77	С	.75	С	.78	С	.70	В
53. Redhill & Paularino	.43	Α	.56	Α	.56	Α	.68	В	.56	А	.71	С
54. Bear & SR 73 NB Ramps	.31	Α	.56	Α	.38	Α	.63	В	.34	А	.69	В
55. Bear & SR-73 SB Ramps	.36	А	.49	А	.42	А	.57	А	.40	А	.68	В
56. Harbor & Baker	.47	А	.64	В	.55	А	.79	С	.55	А	.80	С
57. College & Baker	.34	А	.52	А	.43	А	.65	В	.43	А	.67	В
58. Fairview & Baker	.62	В	.67	В	.77	С	.81	D	.84	D	.82	D
59. Coolidge & Baker	.43	А	.65	В	.52	А	.71	С	.55	А	.76	С
60. Mendoza & Baker	.48	А	.60	А	.57	А	.69	В	.60	А	.73	С
61. Babb & Baker	.55	А	.68	В	.65	В	.77	С	.67	В	.82	D
62. Milbro & Baker	.52	А	.50	А	.62	В	.57	А	.65	В	.61	В
63. Bear & Baker	.49	А	.55	А	.63	В	.67	В	.53	А	.69	В
64. Bristol & Baker	.56	А	.74	С	.72	С	.85	D	.69	В	.89	D
65. SR-55 SB Ramps & Baker	.66	В	.69	В	.73	С	.79	С	.68	В	.87	D
66. SR-55 NB Ramps & Baker	.67	В	.75	С	.63	В	.66	В	.58	А	.65	В
67. Red Hill & Baker	.34	А	.63	В	.43	А	.72	С	.46	А	.80	С
74. Royal Palm & Baker	.33	А	.52	А	.35	А	.66	В	.35	А	.66	В
76. Bristol & Bear	.34	А	.44	А	.39	А	.65	В	.40	А	.55	Α
77. Bristol & Newport SB	.27	А	.44	Α	.32	Α	.67	В	.31	А	.64	В
78. Bristol & Newport NB	.29	Α	.41	Α	.41	Α	.52	А	.38	Α	.48	Α
79. Bristol & Red Hill	.38	Α	.43	Α	.51	Α	.52	Α	.48	Α	.51	Α
80. Shantar & Adams	.47	Α	.60	Α	.56	Α	.69	В	.56	Α	.68	В
81. Placentia/Mesa Verde W & Adams	.75	С	.75	С	.85	D	.89	D	.86	D	.90	D
82. Mesa Verde E & Adams	.52	Α	.57	А	.61	В	.66	В	.60	А	.63	В
83. Royal Palm & Adams	.49	Α	.66	В	.57	А	.76	С	.57	А	.72	С
84. Harbor & Adams	.66	В	.74	С	.86	D	.84	D	.87	D	.82	D
85. Pinecreek & Adams	.59	Α	.62	В	.71	С	.73	С	.72	С	.72	С
86. Fairview & Adams	.62	В	.60	А	.78	С	.75	С	.78	С	.72	С
88. Harbor & Mesa Verde	.41	Α	.60	Α	.51	Α	.75	С	.51	Α	.75	С

Table 4.16-13
2035 Constrained Highway Network and Buildout Highway Network Intersection LOS Summary

2000 30110	2035 Proposed General Existing Conditions (Constrained Highway Ne						Plan	203	Proposed			
	AMDa									ldout High		
Intersection	ICU	ak Hour LOS	ICU	ak Hour LOS	ICU	ak Hour LOS	ICU	ak Hour LOS	ICU	ak Hour LOS	ICU	ak Hour LOS
90. Fairview & Arlington	.28	A	.42	A	.36	A	.47	A	.35	A	.46	A
91. Harbor & Merrimac	.36	A	.56	A	.49	A	.67	В	.48	A	.65	В
92. Fairview & Merrimac	.24	A	.30	A	.36	A	.43	A	.35	A	.45	A
93. Newport SB & Mesa	.28	A	.53	A	.32	A	.65	В	.32	A	.61	В
94. Newport NB & Mesa	.27	A	.41	A	.40	A	.52	A	.38	A	.46	А
95. Harbor & Fair	.35	A	.53	A	.45	A	.63	В	.45	A	.60	A
97. Fairview & Fair	.41	A	.53	A	.57	A	.68	В	.56	A	.65	В
100. Newport SB & Fair	.32	A	.41	A	.35	A	.54	A	.40	A	.78	С
101. Newport NB & Del Mar	.75	C	.48	A	.79	C	.54	A	.81	D	.70	В
102. Newport SB & Vanguard	.23	A	.45	A	.27	A	.63	В	.30	A	.76	С
103. Newport NB & Santa Isabel	.41	A	.43	A	.50	A	.45	A	.58	A	.47	A
104. Harbor & Harbor Center	.39	Α	.55	A	.52	A	.64	В	.53	A	.60	Α
115. Placentia & Wilson	.43	Α	.47	A	.48	A	.50	A	.57	A	.61	В
116. Harbor & Wilson	.41	А	.58	А	.57	А	.69	В	.64	В	.86	D
117. Fairview & Wilson	.48	А	.66	В	.62	В	.86	D	.55	A	.86	D
118. Newport SB & Wilson	.26	А	.39	А	.34	Α	.48	А	.44	А	.74	С
119. Newport NB & Wilson	.36	Α	.40	А	.46	Α	.45	А	.55	А	.50	А
121. Valley & Victoria	.54	Α	.65	В	.59	Α	.74	С	.59	А	.75	С
122. Canyon & Victoria	.53	Α	.61	В	.57	Α	.72	С	.57	А	.72	С
123. American & Victoria	.56	Α	.59	Α	.61	В	.66	В	.59	Α	.66	В
124. National & Victoria	.59	Α	.63	В	.63	В	.72	С	.62	В	.70	В
125. Placentia & Victoria	.74	С	.77	С	.79	С	.88	D	.77	С	.88	D
126. Pomona & Victoria	.61	В	.63	В	.71	С	.75	С	.61	В	.71	С
127. Harbor & Victoria	.67	В	.78	С	.76	С	.87	D	.73	С	.81	D
128. Newport SB & Victoria	.49	А	.56	А	.54	Α	.74	С	.54	А	.72	С
129. Newport NB & 22nd	.79	С	.60	Α	.81	D	.57	Α	.76	С	.52	А
130. Harbor & Hamilton	.41	Α	.57	Α	.49	Α	.69	В	.49	Α	.70	В
131. Harbor & Bay	.31	Α	.47	Α	.45	Α	.61	В	.36	Α	.59	Α
132. Newport SB & Bay	.28	Α	.50	А	.39	А	.64	В	.34	А	.70	В
133. Newport NB & Bay	.34	Α	.45	А	.54	А	.50	А	.46	А	.45	Α
134. Placentia & 19th	.43	Α	.55	А	.49	А	.61	В	.46	А	.58	Α
135. Pomona & 19th	.46	А	.62	В	.60	А	.71	С	.54	А	.67	В
136. Meyer & 19th	.26	А	.34	А	.27	Α	.37	А	.26	А	.34	А
137. Anaheim & 19th	.61	В	.70	В	.82	D	.83	D	.77	С	.74	С

Table 4.16-13
2035 Constrained Highway Network and Buildout Highway Network Intersection LOS Summary

				2035 Proposed General Plan					2035 Proposed General Plan			
		Existing C	Conditions			trained Hi	ghway Ne	twork)	(Bui	ldout High	way Netw	ork)
	AM Pea	ak Hour	PM Pea	ak Hour	AM Pea	ak Hour	PM Pea	ak Hour	AM Pea	ak Hour	PM Pea	ak Hour
Intersection	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
138. Park & 19th	.38	Α	.51	А	.56	Α	.56	А	.47	А	.46	Α
139. Harbor & 19th	.40	А	.57	А	.49	Α	.77	С	.47	А	.73	С
140. Newport & 19th	.86	D	.83	D	.83	D	.76	С	.85	D	.70	В
141. Newport & Broadway	.63	В	.64	В	.74	С	.75	С	.76	С	.44	Α
142. Newport & Harbor	.70	В	.78	С	.67	В	.83	D	.76	С	.63	В
143. Placentia & 18th	.56	А	.69	В	.59	А	.74	С	.54	А	.68	В
144. Newport & 18th/Rochester	.74	С	.81	D	.78	С	.89	D	.73	С	.70	В
145. Maple & Victoria	.54	А	.58	А	.69	В	.66	В	.65	В	.62	В
150. Placentia & 17th	.40	А	.54	А	.42	А	.65	В	.36	А	.63	В
151. Superior & 17th	.67	В	.67	В	.61	В	.73	С	.52	А	.62	В
152. Newport & 17th	.73	С	.77	С	.86	D	.89	D	.83	D	.78	С
153. Orange & 17th	.51	А	.62	В	.67	В	.77	С	.50	А	.68	В
154. Santa Ana & 17th	.52	А	.62	В	.65	В	.73	С	.48	А	.60	Α
155. Tustin & 17th	.49	А	.57	А	.57	А	.71	С	.46	А	.56	А
156. Irvine & 17th	.56	А	.67	В	.52	А	.69	В	.49	А	.64	В
157. Newport & 16th	.53	А	.60	А	.63	В	.66	В	.66	В	.44	А
158. Placentia & 16th	.30	А	.35	А	.34	А	.48	А	.31	А	.43	А
159. Superior & 16th	.46	А	.45	А	.58	А	.59	А	.56	А	.56	А
160. Newport & Industrial	.48	А	.59	А	.54	А	.64	В	.61	В	.90	D

Abbreviations: ICU - intersection capacity utilization

LOS – level of service

NB – northbound

SB – southbound

### Costa Mesa Master Plan of Streets and Highways (MPSH)

The following sub-sections discuss various issues pertaining to the Costa Mesa MPSH.

Santa Ana River Crossings - Several studies have been conducted by the cities of Costa Mesa, Newport Beach, Fountain Valley, and Huntington Beach and OCTA to analyze the deletion of two unbuilt roadway crossings of the Santa Ana River. The main study, titled the Santa Ana River Crossings Study (SARX), provided the technical analysis to support the OCTA's amendment to the Orange County Master Plan of Arterial Highways (MPAH) to downgrade the Gisler Avenue/Garfield Avenue crossing to a "Right-of-Way Reserve" status and delete the West 19th Street crossing from the MPAH. To maintain consistency with the amended MPAH, Costa Mesa, Fountain Valley, and Huntington Beach have subsequently changed the designation of the Gisler Avenue/Garfield Avenue crossing to "Right-of-Way Reserve" status in their respective General Plan Circulation Element roadway systems. Huntington Beach has deleted the West 19th Street crossing from its General Plan circulation system. With this deletion, there is no possible connection for a vehicular bridge from Costa Mesa to Huntington Beach. The long-range (2035) traffic forecasts analyzed in the traffic study do not include a West 19th Street crossing of the Santa Ana River, and the results of the analysis indicate that the future traffic demand in Costa Mesa can be adequately served without the crossing. Therefore, this analysis can serve as the technical support for deletion from the Costa Mesa MPSH of the West 19th Street crossing of the Santa Ana River.

West 19<sup>th</sup> Street Downgrade - In the current Costa Mesa MPSH, West 19<sup>th</sup> Street west of Placentia Avenue is designated as a primary arterial. However, the long-range traffic forecasts presented in the traffic study, which do not assume a West 19<sup>th</sup> Street crossing of the Santa Ana River, support the downgrade of West 19<sup>th</sup> Street west of Placentia Avenue from a primary arterial to a divided collector arterial on the Costa Mesa MPSH. Table 4.16-14 (ADT Volumes and V/C Ratios: West 19<sup>th</sup> Street) summarizes the ADT volumes and ADT and V/C ratios on West 19<sup>th</sup> Street based on the long-range buildout highway network traffic forecasts presented in the traffic study.

Table 4.16-14
ADT Volumes and V/C Ratios: West 19th Street

	ADT		General and Use		d General and Use
Roadway	Capacity	ADT	ADT V/C	ADT	ADT V/C
Primary Arterial Designation					
West 19th Street west of Placentia Avenue	38,000	13,000	.34	13,000	.34
Divided Collector Arterial Designation					
West 19th Street west of Placentia Avenue	22,000	13,000	.59	13,000	.59
Source: Stantec, 2016	_				

As Table 4.16-14 indicates, downgrading West 19th Street from a primary arterial to a divided collector arterial would provide adequate capacity for the long-range traffic forecasts on West 19th Street. Because the forecasted long-range traffic volumes on West 19th Street are relatively low, the downgrade to a divided collector arterial classification would provide the opportunity to implement special design features such as protected bikeways along with the two existing travel lanes (one lane in each direction) while still providing adequate capacity for the future traffic demand on West 19th Street. Thus, impacts of the downgrade would be less than significant.

West 17<sup>th</sup> Street Downgrade - West 17<sup>th</sup> Street west of Placentia Avenue is currently constructed as a collector arterial with one travel lane in each direction and with on-street parking allowed. In the current Costa Mesa MPSH, it is designated as a four-lane secondary arterial roadway. Table 4.16-15 (ADT Volumes and V/C Ratios: West 17<sup>th</sup> Street) summarizes the ADT volumes and ADT and V/C ratios on West 17<sup>th</sup> Street based on the long-range buildout highway network traffic forecasts presented in the traffic study. As Table 4.16-15 indicates, downgrading West 17th Street from a secondary arterial to a divided collector arterial on the Costa Mesa MPSH would provide adequate

capacity for the long-range traffic forecasts on West 17th Street. Impact of the downgrade would be less than significant.

Table 4.16-15
ADT Volumes and V/C Ratios: West 17th Street

	ADT		General and Use		d General and Use
Roadway	Capacity	ADT	ADT V/C	ADT	ADT V/C
Secondary Arterial Designation					
West 17th Street west of Monrovia Avenue	25,000	9,000	.36	9,000	.36
West 17th Street west of Placentia Avenue	25,000	11,000	.44	11,000	.44
Divided Collector Arterial Designation					
West 17th Street west of Monrovia Avenue	22,000	9,000	.41	9,000	.41
West 17th Street west of Placentia Avenue	22,000	11,000	.50	11,000	.50
Source: Stantec, 2016					

East 22nd Street Downgrade - East 22nd Street between northbound Newport Boulevard and Orange Avenue is currently constructed as a collector arterial with one travel lane in each direction. In the current Costa Mesa MPSH, it is designated as a four-lane secondary arterial roadway. Table 4.16-16 (ADT Volumes and V/C Ratios: East 22nd Street) summarizes the ADT volumes and ADT and V/C ratios on East 22nd Street based on the long-range buildout highway network traffic forecasts presented in the traffic study. As Table 4.16-16 indicates, downgrading East 22nd Street from a secondary arterial to a collector arterial on the Costa Mesa MPSH would provide adequate capacity for the long-range traffic forecasts on East 22nd Street. Therefore, impact of the downgrade would be less than significant.

Table 4.16-16
ADT Volumes and V/C Ratios: East 22nd Street

	ADT		t General and Use		d General and Use
Roadway	Capacity	ADT	ADT V/C	ADT	ADT V/C
Secondary Arterial Designation					
East 22nd Street east of Newport Boulevard	25,000	9,000	.36	10,000	.40
Collector Arterial Designation					
East 22nd Street east of Newport Boulevard	12,500	9,000	.72	10,000	.80
Source: Stantec, 2016					

Baker Street Downgrade - Baker Street between Mesa Verde Drive and Royal Palm Drive is currently constructed as a collector arterial with one travel lane in each direction. In the current Costa Mesa MPSH, it is designated as a four-lane secondary arterial roadway. Table 4.16-17 (ADT Volumes and V/C Ratios: Baker Street) summarizes the ADT volumes and ADT V/C ratios on Baker Street based on the long-range buildout highway network traffic forecasts presented in the traffic study. As Table 4.16-17 indicates, downgrading Baker Street from a secondary arterial to a collector arterial on the Costa Mesa MPSH would provide adequate capacity for the long-range traffic forecasts on Baker Street. Impact of the downgrade would therefore be less than significant.

Table 4.16-17
ADT Volumes and V/C Ratios: Baker Street

	ADT		t General and Use		d General and Use
Roadway	Capacity	ADT	ADT V/C	ADT	ADT V/C
Secondary Arterial Designation					
Baker Street west of Royal Palm Drive	25,000	10,000	.40	10,000	.40
Collector Arterial Designation					
Baker Street west of Royal Palm Drive	12,500	10,000	.80	10,000	.80
Source: Stantec, 2016	_				

**Bluff Road Deletion** - Bluff Road between Victoria Street and West 19<sup>th</sup> Street is shown as a future six-lane major arterial on the Costa Mesa MPSH and the Orange County MPAH, and the alignment of the roadway would traverse the Talbert Nature Preserve, which is an Orange County Park that has been designated and used for open space purposes. The long-range (2035) traffic forecasts analyzed in the traffic study do not include Bluff Road between Victoria Street and West 19<sup>th</sup> Street, and the results of the analysis indicate that the future traffic demand in Costa Mesa can be adequately served without this future roadway. Thus, impact associated with this deletion would be less than significant.

Under the buildout highway network scenario, long-range (2035) traffic forecasts were developed for conditions both with and without Bluff Road. The segment of Bluff Road between Victoria Street and West 19th Street is forecast to carry 16,000 ADT in the long-range buildout scenario that includes Bluff Road. In the buildout scenario without Bluff Road, this volume of traffic can be accommodated by the network of adjacent roadways. Table 4.16-21 (2035 Buildout Highway Network ADT Volumes and V/C Ratios with Bluff Road) summarizes the ADT volumes and ADT V/C ratios for the roadways in southwest Costa Mesa that are affected by Bluff Road based on a comparison 2035 buildout traffic conditions with and without Bluff Road. As Table 4.16-18 indicates, all of the Costa Mesa roadways in the vicinity of Bluff Road are forecast to provide adequate capacity with or without this segment of Bluff Road.

Table 4.16-18 2035 Buildout Highway Network ADT Volumes and V/C Ratios with Bluff Road

2000 Banaoat High	Lanes and			rent		osed
	Roadway	ADT	Gener	al Plan	Gener	al Plan
Roadway	Type	Capacity	ADT	ADT V/C	ADT	ADT V/C
Without Bluff Road						
Placentia Ave s/o Victoria St	4P	38,000	30,000	.79	30,000	.79
Placentia Ave n/o West 19th St	4P	38,000	26,000	.68	26,000	.68
Placentia Ave s/o West 19th St	4P	38,000	25,000	.66	25,000	.66
Placentia Ave n/o West 17th St	4P	38,000	18,000	.47	18,000	.47
Placentia Ave n/o 16th St	4P	38,000	15,000	.39	15,000	.39
Victoria St w/o Pacific Ave	4P-A	45,000	34,000	.76	34,000	.76
Victoria St w/o National Ave	4P-A	45,000	31,000	.69	31,000	.69
Victoria St w/o Placentia Ave	4P-A	45,000	33,000	.73	33,000	.73
West 17th St w/o Placentia Ave	2C	12,500	11,000	.88	11,000	.88
West 19th St w/o Placentia Ave	4S	25,000	13,000	.52	13,000	.52
With Bluff Road						
Placentia Ave s/o Victoria St	4P	38,000	22,000	.58	22,000	.58
Placentia Ave n/o West 19th St	4P	38,000	19,000	.50	19,000	.50
Placentia Ave s/o West 19th St	4P	38,000	21,000	.55	21,000	.55
Placentia Ave n/o West 17th St	4P	38,000	15,000	.39	15,000	.39
Placentia Ave n/o 16th St	4P	38,000	14,000	.37	14,000	.37

Table 4.16-18 2035 Buildout Highway Network ADT Volumes and V/C Ratios with Bluff Road

		Lanes and Roadway ADT		Current General Plan		Proposed General Plan	
Roadway		Type	Capacity	ADT	ADT V/C	ADT	ADT V/C
Victoria St w/o Bluff Rd		4P-A	45,000	42,000	.93	42,000	.93
Victoria St w/o Pacific Ave		4P-A	45,000	27,000	.60	27,000	.60
Victoria St w/o National Ave		4P-A	45,000	26,000	.58	26,000	.58
Victoria St w/o Placentia Ave		4P-A	45,000	29,000	.64	29,000	.64
West 17th St e/o Bluff Rd		2C	12,500	6,000	.48	6,000	.48
West 17th St w/o Placentia Ave		2C	12,500	12,000	.96	12,000	.96
West 19th St e/o Bluff Rd		4S	25,000	9,000	.36	9,000	.36
West 19th St w/o Placentia Ave		4S	25,000	15,000	.60	15,000	.60
Abbreviations: Roadway Types:	ADT – Average Daily Traffic P – Primary Arterial (Standard) S – Secondary Arterial (Standard)		//C – Volume/Capa -A – Primary Arteri – Collector Arteria	ial (Augmented)			

Fairview Road and Bristol Street Road Diets - Costa Mesa plans for implementation of "road diets" on several existing roadways to make use of excess right-of-way (beyond that required to accommodate projected traffic volumes). The road diet concept involves reducing the number of existing vehicle travel lanes on a roadway in order to accommodate multi-modal opportunities such as protected bikeways, pedestrian corridors, and transit corridors. In the traffic study, two roadway segments, Fairview Road between Fair Drive and Newport Boulevard and Bristol Street between Randolph Avenue and Red Hill Avenue, were evaluated for the potential implementation of road diets. Table 4.16-22 (2035 Buildout Highway Network ADT Volumes and V/C Ratios with Bluff Road) summarizes the long-range ADT volumes and ADT V/C ratios on Fairview Road and Bristol Street with the application of road diets. As Table 4.16-19 indicates, the reduction of the existing travel lanes on these roadways would still provide adequate capacity for the long-range traffic volumes that are forecast on each of the two roadways. Impact of implementing road diets would be less than significant.

Table 4.16-19 2035 Buildout Highway Network ADT Volumes and V/C Ratios with Road Diets

	Lanes and Roadway			Current General Plan		Proposed General Plan	
Roadway	Type	Capacity	ADT	ADT V/C	ADT	ADT V/C	
Bristol Street	2.	,					
Without Road Diet							
Randolph Avenue to Bear Street	6M	56,000	30,000	.54	30,000	.54	
Bear Street to Newport Boulevard	6M	56,000	35,000	.63	35,000	.63	
East of Newport Boulevard	6M	56,000	32,000	.57	32,000	.57	
West of Red Hill Avenue	6M	56,000	30,000	.54	30,000	.54	
With Road Diet							
Randolph Avenue to Bear Street	4M-A	45,000	30,000	.67	30,000	.67	
Bear Street to Newport Boulevard	4M-A	45,000	35,000	.78	35,000	.78	
East of Newport Boulevard	4M-A	45,000	32,000	.71	32,000	.71	
West of Red Hill Avenue	4M-A	45,000	30,000	.67	30,000	.67	
Fairview Road							
Without Road Diet							
Fair Drive to Wilson Street	6M-A	68,000	18,000	.26	19,000	.28	
Wilson Street to Newport Boulevard	4P-A	45,000	17,000	.38	18,000	.40	
With Road Diet					·		
Fair Drive to Wilson Street	4M-A	45,000	18,000	.40	19,000	.42	

Table 4.16-19 2035 Buildout Highway Network ADT Volumes and V/C Ratios with Road Diets

Roadway		Lanes and Roadway ADT		Current General Plan		Proposed General Plan	
		Type	Capacity	ADT	ADT V/C	ADT	ADT V/C
Wilson Street to Newport Boulevard		2P-A	22,500	17,000	.76	18,000	.80
Abbreviations:	ADT – Average Daily Traffic V/C – Volume/Capacity Ratio						
Roadway Types:	M – Major Arterial (Standard) P – Primary Arterial (Standard)		M-A – Major Arterial (Augmented) P-A – Primary Arterial (Augmented)				

### **Proposed Circulation Policy Framework**

The proposed Circulation Element includes goals to: (1) implement Complete Streets; (2) effectively manage and improve the roadway system; (3) promote a friendly active transportation system; (4) create a safer place to walk and ride a bicycle; (5) integrate active transportation elements into circulation system and land use planning; (6) promote an active transportation culture; (7) promote positive air quality, health, and economic benefits of active transportation; (8) monitor, evaluate and pursue funding for implementation of the Bicycle and Pedestrian Master Plan; (9) enhance regional mobility and coordination; (10) promote transportation demand management, transit, and efficiency; (11) ensure coordination between land use and circulation systems; and (12) evaluate and fund the City's transportation network. The policies and recommendations in the element provide the details as to how the City will implement that support these goals. Central to the element are the Circulation Plan and Conceptual Bicycle Master Plan. Exhibit 4.16-6 (Proposed Circulation Plan) illustrates the proposed roadway network, and Exhibit 4.16-7 (Conceptual Bicycle Master Plan) indicates the plan to better accommodate bicyclists.

# IMPACTS 4.16.A and B

Long-term implementation of land use policy, in combination with regional contributions to traffic on the local road network, would not cause an increase in traffic that will result in intersections and/or roadway segments to operate at inadequate levels of service. Impact would be less than significant.

A level of service analysis was conducted based on the addition of the proposed General Plan land use data. The analysis scenarios include this land use growth, as well as programmed roadway improvements that include intersection and roadway segment capacity enhancements (funded future conditions).

The analysis results above indicate that various roadways throughout the City are forecast to exceed their theoretical maximum ADT capacities under year 2035 traffic conditions. However, none of those locations are considered to be actual future deficiencies because all the intersections analyzed along those roadway segments are forecast to operate at acceptable levels of service during the A.M. and P.M. peak hours with future intersection improvements.

Furthermore, based on the intersection LOS analysis summarized above, each of the study intersection locations analyzed is forecast to operate at an acceptable LOS (i.e., LOS "D" or better) under year 2035 conditions with the future intersection improvements. As such, it has been determined that the proposed General Plan Amendments would not result in an increase in traffic in the planning area that would result in intersections and/or roadway segments to operate at inadequate levels of service with implementation of planned intersection and roadway improvements that are part of adopted City of Costa Mesa MPSH.

Future street improvements that are programmed to implement the updated circulation network plan will be designed in accordance with all applicable standards relating to vehicle traffic, bicycles, and pedestrian safety. Impacts would be less than significant.

IMPACT 4.16.E

### Impact with respect to emergency access would be less than significant.

Inadequate emergency access can delay or prevent responders from arriving at an emergency location, thereby exacerbating an emergency situation leading to an increased potential loss of life and property. Future development will be subject to the provisions of the City's Fire Code with regard to providing adequate emergency access. The General Plan update does not include policies that would change standards related to emergency access, nor would it interfere with policy implementation. No impact would occur.

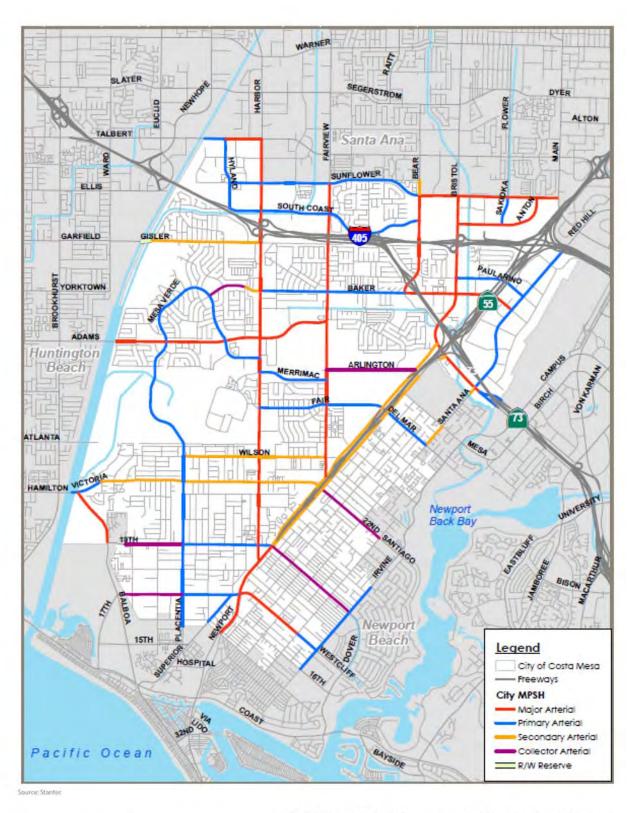


Exhibit 4.16-6 Proposed Circulation System

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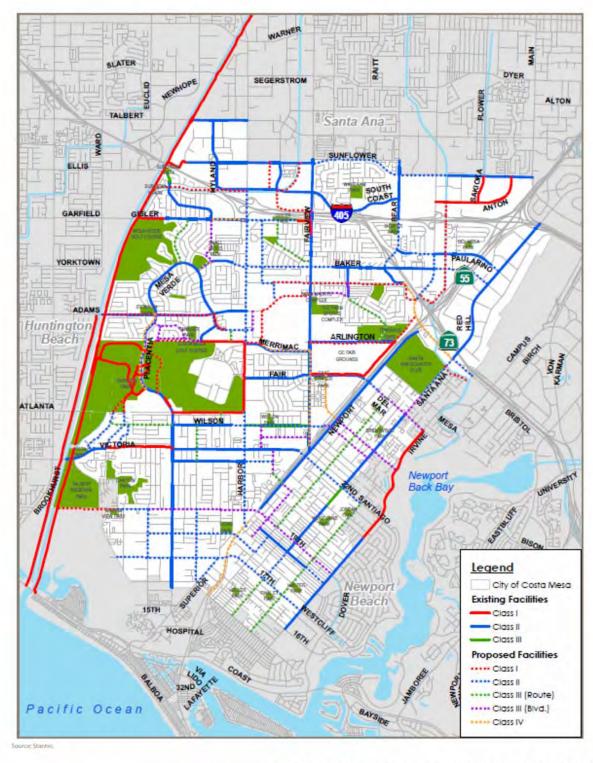


Exhibit 4.16-7 Conceptual Bicycle Master Plan

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Costa Mesa General Plan Update Costa Mesa, California

### IMPACT 4.16.F

#### Impact with respect to parking capacity would be less than significant.

Insufficient parking capacity can inhibit economic growth and result in overreliance on street parking, which can lead to increased traffic congestion and conflicts between adjacent properties. The Circulation Element supports provision of adequate parking in future developments via these policies:

**Policy C-4.A.3:** Consider implementing park-once approaches for multiuse districts and regional destinations areas.

**Policy C-4.A.4:** Embrace innovative parking solutions that reduce the required spaced needed for parking, such as automated parking lifts and elevators.

**Policy C-4.A.5:** Encourage and provide incentives for commercial, office, and industrial development to provide preferred parking for carpools, vanpools, electric vehicles, and flex cars.

**Policy C-4.A.6:** Encourage and support programs that increase vehicle occupancy, including the provision of traveler information, shuttles, preferential parking for carpools/vanpools, transit pass subsidies, and other methods.

These policies, in conjunction with the parking supply and design standards requirements of the City's Zoning Code, would ensure that adequate parking is provided on a project-by-project basis. Impacts would be less than significant.

### IMPACT 4.16.G

### No adverse impact would result with respect to alternative transportation.

Alternative transportation includes travel modes that can move people to their destinations through means other than a private automobile or light duty truck. Bus transit and rail service, for example, provide an important travel alternative for those who cannot rely on the use of private automobiles, such as the elderly and the disabled. The General Plan would not interfere with any adopted plan or policy related to alternative transportation. In fact, the General Plan Amendments includes the following specific alternative transportation policies:

**Policy C-1.A.1:** Update the City's engineering standards for public and private streets to provide for safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages, abilities, and travel mode preferences.

**Policy C-4.A.1:** Support South Coast Air Quality Management District (SCAQMD) trip reduction programs, including such options as park and ride lots, transit subsidies, carpool and vanpool programs, flexible working hours, bicycle facilities, and other traffic reduction strategies.

**Policy C-4.A.6:** Encourage and support programs that increase vehicle occupancy, including the provision of traveler information, shuttles, preferential parking for carpools/vanpools, transit pass subsidies, and other methods.

**Policy C-4.B.1:** Ensure that roadways designated as transit routes can accommodate transit vehicle circulation and convenient pedestrian access to and from transit stops.

- **Policy C-4.B.2:** Review all capital improvement projects to ensure improvements located on existing and planned transit routes include modification of street, curb, and sidewalk configurations to allow for easier and more efficient transit operations and improved passenger access.
- **Policy C-4.B.3:** Provide transit stop amenities that facilitate access to and from transit stops and transfer locations. These may include pedestrian pathways approaching stops, high quality benches and shelters, traveler information systems (real-time transit arrival information), and bike storage and bicycle connections. Bus stops should accommodate timed transfers between buses and other transit services where necessary.
- **Policy C-4.B.4:** Encourage new development along major transit corridors to provide efficient and safe access to transit stops and public sidewalks.
- **Policy C-4.B.5**: Support and participate with Orange County Transportation Authority (OCTA) ACCESS Service in providing transportation assistance to senior citizens and the handicapped.
- **Policy C-4.B.6:** Consult with OCTA for transit services, such as changes to bus routes, bus stops, and hours of operation. Additionally, coordinate with OCTA for changes to transit services provided for seniors, the disabled, and transit dependent populations.
- **Policy C-4.B.7:** Consult with Newport-Mesa Unified School District to maintain school bus services provided for local schoolchildren.
- **Policy C-4.B.8**: Coordinate with OCTA to improve transit services in the City including strategies such as bus rapid transit, express services, community circulators and other schemes.
- **Policy C-4.B.9:** Encourage new local transit programs in coordination with OCTA, consisting of shuttle services to local and regional destinations.
- **Policy C-4.B.10:** Coordinate with OCTA to construct bus turnouts at appropriate locations with attractive shelters designed for safe and comfortable use.
- **Policy C-4.B.11**: Require discussion of transit service needs and site design amenities for transit ridership in EIR's for major projects.

Policies also support the use of public transit and promote bicycling and walking. The Complete Streets plan shown on Exhibit 4.16-9 highlights the City's commitment to provide for street design that can accommodate diverse travel modes. No adverse impact to alternative transportation plans, programs, or facilities would occur as a result of the project.

# 4.16-5 Mitigation Measures

No mitigation measures are required since no impacts would result.

# References

California Department of Transportation. 2014 Traffic Volumes on the California State Highway System. 2014.

John Wayne Airport Orange County. <a href="http://www.ocair.com/aboutjwa/">http://www.ocair.com/aboutjwa/</a> [Accessed March 2, 2016].

Orange County Transportation Authority. Annual Traffic Volume Maps. <a href="http://www.octa.net/Freeways-and-streets/Streets/Master-Road-Plan/Annual-Traffic-Volume-Maps/?terms=traffic%20counts">http://www.octa.net/Freeways-and-streets/Streets/Master-Road-Plan/Annual-Traffic-Volume-Maps/?terms=traffic%20counts</a> [Accessed February 12, 2016].

Stantec Consulting Services, Inc. City of Costa Mesa General Plan Update Traffic Analysis. February 12, 2016.

This section examines the potential impacts involving expansions of utilities and service systems resulting from adoption and long-term implementation of the General Plan Amendments. It examines the following systems:

- Water Supply
- Wastewater Collection and Treatment
- Storm Drainage
- Solid Waste Disposal and Diversion

Various sources of information were utilized in preparation of this section, including adopted plans and standards and personal communication with utilities and services providers. Key plans include the:

- Mesa Consolidated Water District Urban Water Management Plans (UWMP),
- Costa Mesa Capital Improvement Program
- California Department of Resources Recycling and Recovery (CalRecycle) waste stream profiles
- Irvine Ranch Water District Sewer System Management Plan
- Orange County Sanitation District Five Year Strategic Plan
- Orange County Sanitation District Sewer System Management Plan

Comments related to utilities and service systems were submitted by the Orange County Sanitation District, the County of Orange Public Works Department, Mesa Water District, and several members of the public during circulation of the Notice Preparation. These comments are addressed herein.

## Existing Conditions

# Water Supply

Costa Mesa is served by two water supply agencies: Mesa Consolidated Water District (MCWD) and Irvine Ranch Water District (IRWD). A majority (85%) of the City lies within the boundaries of the MCWD, which also serves unincorporated areas of the County and portions of Newport Beach. Properties to the southeast of Newport Boulevard, between 23rd and Bristol Streets, are served by the IRWD. Both MCWD and IRWD are affiliated with the Coastal Municipal Water District (Coastal) and the Municipal Water District of Orange County (MWDOC). In turn, Coastal and MWDOC are member agencies in the Metropolitan Water District of Southern California (MWD), the agency that supplies Southern California with the majority of its imported water. In 2001, MWDOC consolidated with Coastal, which provided wholesale imported water supplies to water agencies and cities serving the coastal areas of Orange County from Newport Beach south to San Clemente.

MWDOC is the second largest member agency of the MWD. Imported water comes to Orange County from Northern California and from the Colorado River. MWDOC's primary responsibility is to ensure that the present and future water needs of its members are met through system and supply reliability. MWDOC represents its members at regional, State, and federal levels by advocating for development and protection of water supplies and planning and coordinating the water needs for its service area. The District also maintains a water use efficiency program and coordinates countywide water/wastewater emergency preparedness and response efforts. MWDOC serves imported water to approximately 2.3 million residents.

Natural water supplies in Orange County are limited to three sources: 1) groundwater, 2) surface flows in the Santa Ana River originating in Riverside and San Bernardino Counties, and 3) local precipitation and runoff in Santiago Creek and other streams. Because the demand for water greatly exceeds the rate of replenishment of natural water sources, the majority of the urban and rural communities in Orange County are wholly or in part dependent upon water imported through the facilities of the MWD.

#### Mesa Consolidated Water District

MCWD encompasses approximately 18 square miles. MCWD serves Costa Mesa, part of Newport Beach, and John Wayne Airport. MCWD serves a population of 110,000 residents and provides domestic and irrigation water services to 23,000 metered connections. On an annual basis, MCWD delivers 21,000 acre-feet per year (6.6 billion gallons) of water to the various users (MCWD 2015).

#### Irvine Ranch Water District

IRWD encompasses approximately 78,000 acres, or 123 square miles in south-central Orange County. IRWD serves all of the City of Irvine and the unincorporated areas of Foothill Ranch and Newport Coast. In addition, IRWD serves portions of Tustin, Santa Ana, Newport Beach, Costa Mesa, Orange, and Portola Hills. In 1997, IRWD began providing water service to the Santa Ana Heights community.

IRWD serves a population of 340,000 and provides water to approximately 103,000 domestic connections, which includes residential, commercial, industrial, fire protection, public authorities, construction, landscape irrigation, and agricultural users (IRWD 2015a). For fiscal year 2012/2013, IRWD delivered 60,759 acre-feet of treated (potable) water, 2,491 acre-feet of untreated (non-potable) water, and 29,852 acre-feet of reclaimed water for a total of 93,037 acre-feet (IRWD 2015b).

#### Water Sources

Water is imported into Orange County via two extensive systems of aqueducts operated by MWD. At present, the primary source of supply is the Colorado River Aqueduct system. This aqueduct transports water from Lake Havasu on the Colorado River to Lake Mathews, a MWD storage reservoir in Riverside County. From this point, water is carried to East Orange County Feeder No. 2, the main distribution line serving the County.

The second source of supply of imported water is the State Water Project (SWP). This system brings water from the Upper Feather River in north-central California via the California Aqueduct to Lake Castaic north of Los Angeles. From Castaic, the Foothill Feeder transports water to the Weymouth Filtration facility in La Verne. From this point, the Yorba Linda Feeder carries water to the Diemer Filtration Plant for distribution in Orange County.

Currently, MCWD and IRWD rely on both groundwater and imported water. At present, 83 percent of MCWD's water supply is derived from groundwater from seven wells. OCWD manages the local area groundwater basin and utilizes advanced techniques for recharging the groundwater basin. This additional water source provides customers with water that is of higher quality and lower cost than water imported from MWD. MCWD's 2010 Master Plan called for capital improvements, including a deep water aquifer treatment facility that would increase groundwater production to 95 percent of the total water supply by 2000-2001, decreasing the dependence on higher cost import water.

Since Costa Mesa depends upon imported water for a portion of its water supply, the potential impacts of water supply and demand extend beyond the boundaries of the City and its two serving agencies. The availability of imported water is directly related to the water supply conditions in the source watersheds, as well as demand for water throughout the State. Recurring dry years can affect Southern California's water allotment. All of Southern California is more reliant on water from the north since the MWD allotment of Colorado River water was reduced from 1.2 million to 0.55 million acre-feet per year at the completion of the Central Arizona project in 1985.

#### Mesa Consolidated Water District

Approximately 75 percent of MCWD's water supply is pumped from natural underground water aquifers which are located in the Orange County Groundwater Basin. OCWD manages this groundwater basin, supplying water to many

areas in Orange County. The OCWD supplements nature by artificially replenishing the groundwater basin with imported and natural water supplies (MCWD 2015).

The remaining 25 percent of MCWD's water supply is imported from the MWD via two wholesale water agencies: MWDOC and Coastal. Imported supplies are transported through aqueducts from the Colorado River and Northern California. Imported water is more expensive than groundwater due to transportation and treatment costs.

In an effort to decrease dependence on expensive imported water supplies, MCWD is continuing to build local water wells and reservoirs to store groundwater for use during peak demand periods. Currently, MCWD owns and operates two reservoirs which have the combined capacity to store more than 28 million gallons of water. MCWD is anticipating that smaller amounts of imported water will need to be purchased due to the increased use of so-called colored water.

Colored water is an additional water resource, supplementing clear water. Colored water is pumped from deep aquifers in the Orange County Groundwater Basin. Colored water is the color of weak tea and has a sulfur smell. The color and odor are believed to originate from ancient redwood forests and peat. Colored water is treated using ozone and biofiltration to eliminate the color and odor, and chloramines for disinfection. Colored water is a high-quality resource that meets and exceeds all State and federal water quality standards. MCWD is at the forefront of colored water treatment and is the first water purveyor in the United States to practice ozone treatment at the wellhead.

#### Irvine Ranch Water District

Approximately 50 percent of IRWD's water is purchased from MWD. This imported water comes from the Colorado River via the Colorado River Aqueduct and from Northern California via the State Water Project. The remaining 50 percent of the supply comes from local groundwater wells (IRWD 2015b).

To alleviate its dependency on imported water, in 1979 IRWD began to develop a series of local wells called the Dyer Road Well Field Project. These wells, ranging from 400 to 1,200 feet in depth, extract high quality water from the Orange County Groundwater Basin. This groundwater now accounts for 50 percent of IRWD's total potable water supply.

#### Water Resources Master Plan

The IRWD drafted a Water Resources Master Plan (WRMP) at the beginning of 2010. The Executive Summary chapter of the WRMP discusses IRWD's recommendations regarding changes in the water resource mix.

The WRMP recommends that IRWD move from a heavy reliance on imported water to a greater utilization of local groundwater for cost, water quality, and reliability reasons. New potable groundwater supplies would greatly reduce the reliance on imported water under normal operating conditions and under most emergency outage scenarios. An expansion of the Michelson Water Reclamation Plant treatment capacity and the inclusion of the San Joaquin Reservoir as a reclaimed water seasonal storage reservoir are recommended to meet projected demand increases in the reclaimed water system. The resource mix for the year 2025 could potentially consist of nearly 70 percent clear and treated groundwater, with only five percent of untreated imported water required for the nonpotable system.

Existing potable system sources are imported treated water purchased from MWD and local groundwater developed through the Dyer Road Well Field. IRWD plans to develop additional potable groundwater to meet its future demand. These projects would ultimately increase supply reliability and water quality, and may reduce overall supply costs.

Existing nonpotable system sources are treated wastewater from the reclamation plant, untreated water from Irvine Lake through the Irvine Lake Pipeline, and some local groundwater. The untreated source consists of untreated water purchased from the MWD and/or local runoff, depending on winter rainfall. To meet increasing demands for reclaimed water, the WRMP concludes that existing sources must be expanded or new sources developed. An expansion of

reclamation treatment capacity and reclaimed water seasonal storage from the conversion of the San Joaquin Reservoir from potable use would minimize the amount of imported treated water used in the reclamation water system. This would also reduce the amount of wastewater sent to the Orange County Sanitation District for treatment and disposal, and allow groundwater production to be concentrated in the potable water system.

### **Water Conservation**

The importance of water conservation programs was brought into focus during several recent droughts in California. In response to the most recent drought, MWD implemented a mandatory water-rationing plan for its customers. Both Mesa and IRWD have adopted water conservation policies. The City of Costa Mesa also encourages water conservation in all new developments. In particular, the General Plan Conservation Element includes policies that address green building sustainable development practices and water conservation. Through development review the City ensures new development incorporates all interior and exterior water conservation measures required by State law and by the affected water agencies.

In cooperation with the OCWD, Mesa uses the OCWD's "Green Acres" reclaimed wastewater use program. Green Acres program water is highly treated and purified reclaimed wastewater, pumped in a separate distribution pipeline system, for use by selected users for non-potable (nondrinking) purposes, including production processes and the irrigation of greenbelts, golf courses, parks, and other similar facilities. Areas that are within a five-mile radius of the OCWD "Water Factory 21" facility (near the Santa Ana River/I-405 overpass, just outside of Costa Mesa's borders) will have the opportunity to utilize this lower-cost alternative water source in place of more scarce and more expensive groundwater and imported water.

#### Wastewater Treatment and Reclamation

The Costa Mesa Sanitary District (CMSD) is the local sewer agency for the majority of the City. The remaining portions of the City are served directly by the County Sanitation District of Orange County (CSDOC), which also treat the wastewater. Both CMSD and CSDOC maintain master plans based on anticipated land use intensities in order to estimate and plan for future needs. CSDOC's Master Plan guides wastewater collection, treatment, and disposal activities through the year 2020.

Wastewater collected by the Costa Mesa and County districts is processed at CSDOC's treatment plants located in Fountain Valley and Huntington Beach. CSDOC operates under a five-year National Pollution Discharge Elimination System (NPDES) ocean discharge permit issued by the California Regional Water Quality Control Board and the EPA. This permit has a set discharge limit for biochemical oxygen demand (BOD) and suspended solids. Currently, CSDOC's discharge is close to the BOD limit.

In 1985, MWD, the agency that supplies MCWD and IRWD with imported water, switched from free chlorine to chloramine. Chloramine is a combination of chlorine and ammonia used as a disinfectant to prevent waterborne diseases such as cholera and typhoid. MCWD uses a mix of chloramines and ozone to improve the water quality and reduce the byproducts of disinfection.

The switch to chloramines reduces the formation of disinfection-by-products such as trihalomethanes (THM). THMs are suspected carcinogens. Changes in federal and State drinking water standards prompted this change.

For most people chloraminated water is safe for drinking, cooking, bathing, and all everyday water uses. However, two groups of people need to take special care with chloraminated water: kidney dialysis patients and fish owners. Medical centers that perform dialysis are responsible for purifying the water that enters dialysis machines. All hospitals and medical centers using dialysis are aware of the change. Commercial products are available at pet supply stores to remove chloramines in fish tanks.

## Water Quality

The quality of water delivered to Costa Mesa is the result of blending water from three separate sources (groundwater, Colorado River and State Water Project) with varying degrees of contamination. Based on a comparison of a primary indicator of water quality, the concentration of total dissolved solids (TDS), the groundwater produced by the MCWD is of relatively high quality. Total dissolved solid concentrations in extracted water within the Lower Santa Ana Basin ranges from 200 parts per million (ppm) to 980 ppm, while the TDS levels from Mesa wells average 277 ppm. The U.S. Public Health Service recommends a standard of 1,000 ppm Minimum Contaminant Level of TDS for drinking water.

With respect to imported water, Colorado River water is poor in TDS (750 to 800 ppm) and hardness quality (280 ppm), but excellent with respect to turbidity (2 ppm or less). In contrast, SWP water is relatively low in TDS (226 ppm) and hardness (97 ppm) but high in turbidity (3.6 ppm). The combined sources result in quality indicators of 447 ppm TDS and 239 ppm hardness of water supplied by MWD. In contrast, MCWD's well produces water that only has 166.8 ppm hardness of water. MCWD 2010 Water Quality Report indicates that its drinking water is of a higher quality than required by the State and federal standards. California water quality standards are more restrictive than federal standards. The California Department of Health Services enforces State drinking water standards. MCWD monitors its water supplies on an ongoing basis, and measures approximately 200 substances.

Primary water quality and pollution control responsibilities are held by various federal, State, and regional agencies. The Federal Environmental Protection Agency (EPA) develops national programs and regulations for water pollution control and water supply with full enforcement powers given to the State Water Resources Control Board. The State is divided into nine regions, each governed by a Regional Water Quality Control Board responsible for preparing and adopting regional water quality control plans, enforcing waste discharge requirements and performing other functions concerning water quality control. Actions of these Boards are subject to review by the State Department of Water Resources and Health. SCAG has been appointed by the EPA as the agency to coordinate water quality management planning in the South Coast area and is responsible for the development of a regional program for the control of nonpoint sources of water pollution (208 Program). Additionally, Costa Mesa is a member of the Newport-Irvine Waste Management Planning Agency (NIWA), a joint powers authority established to conduct water quality studies in the Newport Bay Drainage Area. The City's participation in regional water quality planning efforts and support of other pollution control agencies should ensure the maintenance of acceptable levels of water quality in the future.

#### Solid Waste

Landfill sites throughout the State are nearing capacity. In Southern California, this is especially a problem because new landfill sites are hard to locate due to limited land resources. In 1989, the State legislature passed AB 939, the California Integrated Waste Management Act. AB 939 requires all cities and counties to prepare integrated waste management plans to attain solid waste reduction goals of 25 percent reduction by 1995 and 50 percent reduction by 2000. These plans were to include components for source reduction, recycling, and composting.

In April 1992, Costa Mesa prepared and adopted a source reduction and recycling element (SRRE). A description of the programs the City adopted in the final SRRE are provided below.

- Source reduction is any action that avoids the creation of waste by reducing waste as its source, including reducing packaging, reducing the use of non-recyclable materials, replacing disposable materials and products with reusable materials and products, reducing the amount of yard wastes generated and increasing the efficiency of the use of paper, cardboard, glass, metal, plastic, and other materials. It requires manufacturers and consumers to take an active role in reducing the amount of waste that is produced through changes in production methods and consumption patterns.
- Recycling is any action that avoids the creation of waste through the reuse or reprocessing of material.
   Recycling requires active participation by the community and can take any number of forms. Recycling can

be stimulated at all levels of government and the private sector through education, regulation and legislation. The three areas recycling focuses on within Costa Mesa are: 1) single-family residential; 2) multi-family residential, commercial, industrial and institutional uses; and 3) buy-back and drop-off recycling programs.

- Composting is a controlled biological decomposition of organic waste to a relatively stable humus-like material.
   As a waste diversion method composting provides an opportunity to substantially reduce the volume of yard waste and other organic material that is presently landfilled.
- Special wastes are relatively large, identifiable waste streams from the general municipal solid waste stream that have the potential to be segregated, reused, recycled, or disposed in a manner uniquely suited to that waste. Examples of special waste can include, but are not limited to ash, sewage sludge, industrial sludge, asbestos, auto shredder waste, and auto bodies. The management of these special wastes is primarily the responsibility of the County of Orange. The City of Costa Mesa supports the County of Orange in its efforts.
- Education and public awareness in the area of recycling is important to increase the amount of refuse diverted
  from the waste stream. The City of Costa Mesa and the Costa Mesa Sanitary District (CMSD) are actively
  involved in educating the public and support of the goals and objectives of the County of Orange, as well as
  the intent of AB 939.

The City of Costa Mesa encourages residents to use their own containers to separate waste from recyclable materials. The County of Orange has four landfill facilities that serve the cities within the County. These landfills are located in Brea, Santiago Canyon, Irvine, and San Juan Capistrano (this facility is both a landfill and a Household Hazardous Waste Collection Center). However, the Santiago Canyon Landfill had been operating at a reduced level since 1993 with the closure of this facility occurring 2002.

#### **Storm Water Control**

Drainage and flood control within the planning area are addressed by a system of County- and City-maintained facilities. The Costa Mesa Engineering Department is responsible for the maintenance and operation of most of the storm drains within its jurisdictional boundaries. The County is responsible for regional facilities designed to control urban stormwater runoff and natural drainage from the Santa Ana River and other waterbodies within the planning area. The County provides capital improvement funding for these facilities. Additional funding for storm drainage facilities and flood control improvement projects include development impact fees and other federal and State grants (CM 2013).

## Orange County Flood Division

The Orange County Flood Control District (OCFCD) provides regional drainage and flood control infrastructure and maintenance to the planning area. The planning area is located within three separate watersheds within the District. The majority of the planning area is located within the Talbert/Greenville Banning Channel watershed (Watershed D), with the eastern and southeastern portions of the planning area located within the San Diego Creek (Watershed F) and East Costa Mesa/Newport Beach (Watershed G) watersheds, respectively. The Talbert/Greenville Banning Channel watershed is approximately 25.9 square miles in area and includes portions of the cities of Huntington Beach, Fountain Valley, Santa Ana, Tustin, Irvine, and Newport Beach. The San Diego Creek watershed is approximately 135.8 square miles and includes portions of the cities of Costa Mesa, Irvine, Tustin, Laguna Woods, Santa Ana, and Lake Forest. The East Costa Mesa/Newport Beach watershed is approximately 16.1 square miles and includes portions of the cities of Costa Mesa and Newport Beach. The OCFCD has developed flood control and drainage design manuals to guide the development and maintenance of the County's flood control and drainage systems (OCFCD 2015a and 2015b).

OCFCD maintains a variety of interim and fully improved channels, storm drains, levees, basins, and check dams within the planning area. Levees are discussed in Section 4.9 (Hydrology and Water Quality). The County operates the following channels within the planning area: the Santa Ana Creek Channel, the East Costa Mesa Channel, the Santa

Isabel Channel, the Fairview Channel, the Greenville Banning Channel, the Santa Ana Gardens Channel, the Baker Storm Channel, and the Paularino Channel. Drainage is also controlled through the County-maintained Costa Mesa Storm Darin, Mesa Verde Storm Drain, Times Storm Drain, Gisler Storm Drain, Hyland Storm Drain, Fairview Road Storm Drain, Baker Storm Drain, 22<sup>nd</sup> Street Storm Drain, and High Grove Storm Drain (OCFCD 2016a, 2016b and 2016c).

The City of Costa Mesa has prepared a *Master Plan of Drainage* that identifies needed improvements to the local drainage system to ensure protection against 10-year storm events. These improvements have been identified for the purpose of allocating funding in the 10-year and 20-year Capital Improvement Programs (CIP) for targeted storm drain enhancements. The *Master Plan of Drainage* identifies the following 20-year CIP priority list:

- Walnut Street system from Walnut to Irvine and Costa Mesa
- Mesa Verde system from Ceylon Drive to Carri Lane
- Fairview Road system from Belfast/Warren to Fairview/McCormack
- Walson Road system from College to Dulblin
- Van Buren Street system from Atlanta to Charlston
- Fordham system from Fair to Hanover
- Anaheim/Superior system from Plummer to 18<sup>th</sup>/Crestmont
- Anaheim/Superior system from 18<sup>th</sup>/Crestmont to Park
- Anaheim/Superior system from Park to 17<sup>th</sup>/Pomona
- Anaheim/Superior system from 17<sup>th</sup>/Pomona to Ohms/Farad

- Anaheim/Superior system from Ohms/Farad to 16<sup>th</sup>/Superior
- Brentwood/Santa Ana system from Brentwood to Rue de Cannes
- Cherry Lake system from Westminster/Sherwood to 21<sup>st</sup>/Santa Ana
- Cherry Lake system from 21<sup>st</sup>/Santa Ana to 22<sup>nd</sup>/Santa Ana
- Cherry Lake system from 22<sup>nd</sup>/Santa Ana to Vista Baya/Santa Ana
- Cherry Lake system from Vista Baya/Santa Ana to Waterman
- Cherry Lake system from Waterman to Cherry Lake
- West 18<sup>th</sup> system from Monrovia to west City limits
- West 19<sup>th</sup> system from Monrovia to west City limits
- East 17<sup>th</sup> system from Tustin to Irvine

Approximately one-third of the programmed storm drain improvements citywide consist of installing minor systems comprising of pipes and reinforce box culverts where none exist. Approximately one-quarter of the improvements will involve installing larger pipes (54 inches or larger) or reinforced box culverts to provide the degree of stormwater control desired (Costa Mesa MPD).

# Regulatory Framework

A variety of national, State, and regional regulations govern planning requirements for water and wastewater facilities, as well as solid waste disposal. Key provisions are summarized below.

## Safe Drinking Water Act (SDWA)

The Safe Drinking Water Act (SDWA), originally passed by Congress in 1974, protects public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources, including rivers, lakes, reservoirs, springs, and ground water wells. SDWA authorizes the U.S. EPA to set national health-based standards for drinking water to protect against both naturally occurring and human-made contaminants that may be found in drinking water. The U.S. EPA, states, and water systems then work together to make sure that these standards are met. There are a number of threats to drinking water. Improperly disposed of chemicals, animal wastes, pesticides, human wastes, wastes injected deep underground, and naturally

occurring substances can all contaminate drinking water. Likewise, drinking water that is not properly treated or disinfected, or which travels through an improperly maintained distribution system, may also pose a health risk. Originally, SDWA focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments recognize source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water.

#### SB 610 and State CEQA Guidelines Section 15155

SB 610 enacted Sections 10910-10915 of the State Water Code to require a local land use authority to consult with the local water purveyor to prepare or obtain a water supply assessment, prior to completing an environmental impact assessment for a specified "water demand" project, defined below. Section 15155 of the State CEQA Guidelines was added to directly incorporate these water code provisions into the CEQA process.

- A proposed residential development of more than 500 dwelling units.
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- A proposed hotel or motel, or both, having more than 500 rooms.
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- A mixed-use project that includes one or more of the projects specified in this subdivision.
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

Key provisions required to be addressed in a water supply assessment include a description of past and existing water supplies and rights and groundwater extraction information including identification of basins, adjudication rights, and overdrafting status. Should the water assessment determine that insufficient supplies would be available to serve the project the water purveyor must indicate how it will meet the demand of the new project. Should additional supplies be unavailable to meet project demand, then the approving agency must include that determination in its project findings.

#### SB 221

Similar to SB 610, SB 221 prohibits approval of subdivisions consisting of more than 500 dwelling units unless there is verification of sufficient water supplies for the project from the applicable water supplier(s). This requirement also applies to increases of 10 percent or more of service connections for public water systems with less than 500 service connections. The law defines criteria for determining "sufficient water supply" such as using normal, single-dry, and multiple-dry year hydrology and identifying the amount of water that the supplier can reasonably rely on to meet existing and future planned uses.

## Water Conservation in Landscaping Act

Section 65591 et seq. of the Government Code requires all local jurisdictions to adopt a water efficient landscape ordinance. The ordinance is to address water conservation through appropriate use and grouping of plants based on environmental conditions, water budgeting to maximize irrigation efficiency, storm water retention, and automatic irrigation systems. Failure to adopt a water efficiency ordinance requires a local jurisdiction to enforce the provisions of the State's model water efficiency ordinance. In 2009, the Department of Water Resources (DWR) updated the Model Water Efficient Landscape Ordinance pursuant to amendments to the 1991 Act. These amendments and the new model ordinance went into effect on January 1, 2010. The City of Costa Mesa adopted a water efficient landscape ordinance and guidelines in January of 2010. The primary purpose of the guidelines is to provide procedural and design guidance for project applicants proposing landscape installation or rehabilitation projects that are subject to the requirements of Title 13, Chapter VII, Landscape Standards of the Costa Mesa Municipal Code (CMPD 2012).

## **Urban Water Management Plans**

Pursuant to Section 10610 et al. of the California Water Code (Urban Water Management Planning Act), any water district servicing 3,000 or more customers or provides over 3,000 acre-feet of water per year is required to prepare an Urban Water Management Plan (UWMP). The analysis contained in a UWMP is designed to ensure the appropriate level of reliability in its service to meet the needs of its customers in normal, dry, and multiple-dry years. Normal and dry years refer to categories of projected water supply in times of regular rainfall and in times of drought. UWMPs must be updated every five years on years ending with zero and five. The Act describes the contents of a UWMP as follows:

- Description of service area including current climate and population and project populations estimates in fiveyear increments over 20 years
- Description of existing and planned water supply over the same five-year increments including groundwater and surface water resources
- Water supply reliability and methods to compensate for shortages during dry years
- Opportunities for long-term and short-term water exchange or transfer
- Description of water use and demand estimates based on land use for past, current, and projected quantities
- Description of current and planned projects and programs designed to meet the service needs of the customer base
- Description of opportunities for use of desalinated water
- Preparation of a staged water shortage contingency plan for up to a 50 percent shortage over three years
- Information on use and opportunities for use of recycled water

Mesa Consolidated Water District's 2010 UWMP applies to the City of Costa Mesa. The UWMP provides a summary of anticipated supplies and demands for the years 2010 to 2035.

## **Wastewater Discharge Requirements**

Wastewater Discharge Requirements (WDRs) are issued to facilities discharging wastewater directly into receiving surface waters. Such facilities are required to be permitted whether individually or under a general permit. WDRs also establish wastewater treatment requirements. Treatment requirement orders regulate operations of the facility by limiting constituents in wastewater effluent, setting prohibitions on certain operations and activities, establishing specifications for facility design and maintenance, and provisions for reporting and monitoring. Wastewater, collected by the Mesa and County districts, is processed at CSDOC's treatment plants located in Fountain Valley and Huntington Beach. CSDOC operates under a five-year National Pollution Discharge Elimination System (NPDES) ocean discharge permit issued by the California Regional Water Quality Control Board and the EPA. This permit has a set discharge limit for BOD and suspended solids. Currently, CSDOC's discharge is close to the BOD limit.

## Connections to Local Wastewater and Storm Drain Systems

Connections to the City's water and sewer system are generally regulated by Section 13-71 (Utility Requirements) of the Municipal Code. Section 19-326 (Fees and Taxes) establishes the right of the City to require users of revenue-producing services to pay a utility users' tax ("utility tax") to the City. Section 13-180 (Application Requirements) establishes limits and prohibitions on discharges to the City's sewer system and establishes a permitting process for connection to the sewer system. Section 15-67 (Required Construction) establishes in-lieu fees to support the operation, maintenance, expansion, and upgrade of the City's wastewater collection and treatment system.

Section 8-35 (Permits) regulates permitted and illicit connections to the City's storm drain system as part of the implementation of the City's NPDES permit. Additional information regarding water quality standards can be found in the Hydrology and Water Quality section of this EIR.

#### **AB 939**

The California Integrated Waste Management Act of 1989 regulates solid waste management and implements priorities in source reduction, recycling and composting, and environmentally safe transformation and land disposal. The primary provisions of AB 939 required all cities and counties to divert a minimum of 50 percent of their solid waste from landfills and to adopt Integrated Waste Management Plans (IWMP). The Act also established permitting and enforcement provisions for the California Integrated Waste Management Board (CIWMB). Costa Mesa Sanitary District currently has a diversion rate of 61 percent (CMSD 2015). Primary diversion measures include providing residential and commercial recycling services.

## Costa Mesa Source Reduction and Recycling Element

The SRRE, adopted in January 1992, is the City's primary planning mechanism for solid waste diversion. This document was prepared in accordance with AB 939 to identify strategies for meeting the mandated 50 percent diversion rate. The source reduction component of the plan identifies methods such as use of reusable items as opposed to disposable items to remove products from the waste stream. The four categories of source reduction activities are education/technical assistance, rate structure modifications, economic incentives, and regulatory measures. The recycling component of the plan identifies existing and proposed programs to increase recycling efforts. Additional items addressed in the plan include composting and special wastes.

## **Development Fee Program**

The City of Costa Mesa collects development fees pursuant to California Government Code for the expansion of utilities and service systems facilities. The City's development fee program includes drainage and curb and gutter fees. The program also establishes a methodology for determining appropriate impact fees to fund such improvements.

# Thresholds of Significance

A significant impact would occur if the General Plan Amendments would:

- A. Exceed wastewater treatment requirements adopted by the Santa Ana Regional Water Quality Control Board.
- B. Require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities that the construction of could cause significant environmental effects.
- C. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities that the construction of could cause significant environmental effects.
- D. Require new or expanded water supply entitlements due to lack of existing entitlements or resources.

- E. Result in the determination by the wastewater treatment provider that it will have inadequate capacity to serve the planning area based on projected demand and the provider's existing commitments.
- F. Be served by landfills without sufficient capacity to accommodate the project's disposal needs.
- G. Fail to comply with federal, state, or local statues and regulations related to solid waste.

## Environmental Impacts

IMPACT 4.17.A Impacts related to the exceedance of wastewater treatment requirements would be less than significant with implementation of existing codes, policies and regulations.

Future development within the planning area guided by the policies of the General Plan could affect RWQCB treatment standards by increasing wastewater production. Orange County Sanitation District Reclamation Plant Number 1 in Fountain Valley has a total rated primary capacity of 108 mgd and secondary treatment capacity of 80 mgd. Treatment Plant No. 2 in Huntington Beach has a rated primary capacity of 168 mgd and secondary treatment capacity of 90 mgd. The Costa Mesa Sanitary District Sewer System Management Plan (SSMP) is currently designed to accommodate a service population of approximately 116,700 that includes the planning area and the City of Costa Mesa. The most recent population projections compiled by SCAG estimate a total population of 114,000 for the service population in the year 2035.

The proposed General Plan Amendments project a build-out population of 131,690, which is greater than that projected by SCAG. Without expansion, the wastewater conveyance and treatment system could be insufficient to provide for the projected population growth. However, the City's Municipal Code requires incremental expansion of wastewater treatment facilities based on new development through the collection of development fees. This ensures that adequate funding would be available to meet future facility needs, should expansion be necessary. Furthermore, the OCSD will be required to comply with the RWQCB wastewater discharge requirements to ensure that effluent discharges are within acceptable water quality parameters. The requirement for the collection of development fees on new development which pay for facility upgrades, reduces impacts associated with wastewater treatment requirements to less than significant.

IMPACT 4.17.B Impacts related to the potential future construction of water and wastewater infrastructure would be less than significant with implementation of existing City standards and regulations.

Future development within the planning area could require expanded water and wastewater facilities to meet the demand from anticipated population growth, including mainline or backbone elements and local connections. At this time, no immediate changes to the system are needed to meet the demands of immediate growth, as the master plans anticipate growth consistent with prior land use policy. To accommodate the level of long-term development allowed by the General Plan, the City will continue to assess demand and to update water and wastewater master plans as needed. As part of the update, the City would consider establishing service fees and assessment charges for new development projects. Also, as part of the development review process, the City will place the burden of any site-specific improvement requirements on the developer.

Expansion of water and wastewater facilities would be contingent upon the rate of growth and deterioration of aging facilities. Thus, identifying the specific location of and timing for new facilities is speculative at this time. Construction of new or expanded water and wastewater treatment facilities could result in environmental impacts. Any future expansion of existing facilities or construction of new facilities would be required to undergo environmental review pursuant to CEQA. The review will either be conducted by project applicants for individual projects or by the City for project of broader application. Such impacts would be identified, along with measures to mitigate any significant impacts, as part of the CEQA compliance process for future project-specific planning actions.

IMPACT 4.17.C

Impacts related to the potential future expansion of storm drain facilities would be less than significant with implementation of existing City standards and regulations.

Future development sites within the planning area may require expanded storm drain facilities if they are identified as having drainage deficiencies per the City's *Master Plan of Drainage*. Site-specific drainage problems would be remedied through review of development plans by the City's Engineering Department. The *Master Plan of Drainage* identifies numerous specific projects that will improve the storm drain system. Fees are collected from development projects in part to fund the programmed storm drain system improvements. Continued implementation of *the Master Plan of Drainage* provides the City with appropriate control and management over larger local drainage concerns.

As part of the development review process for major development projects, the City requires assessment of the adequacy of regional and localized drainage facilities, and requires developers to fund/provide any new facilities required (beyond those identified in the master drainage plans and City's CIP) to address project-specific impacts. Construction of any new or expanded storm drainage facilities could result in environmental impacts. However, such impacts would be identified, along with measures to mitigate any significant impacts, as part of the project review and CEQA compliance process for future project-specific planning actions.

IMPACT 4.17.D

Implementation of the proposed General Plan Amendments would not require new or expanded water supply entitlements to be secured, and the proposed General Plan Amendments incorporate policies aimed at conserving water supplies.

Over the long term, population and employment growth would likely require expanded supplies to meet increase in demand. Mesa Consolidated Water District (MCWD) provides 85 percent of the water supply to the City, with the rest coming from Irvine Ranch Water District (IRWD). Currently, the total water demand for retail customers served by MCWD is approximately 19,400 acre-feet annually consisting of 2,400 acre-feet of imported water, 15,900 acre-feet of local groundwater, and 1,100 acre-feet of recycled water. In the last five years, Mesa's water demand decreased by eight percent while population has increased by four percent. Mesa is projecting a population growth of 9% accompanied by a flat water demand trend in the next 25 years.

Using a per capita consumption rate of 221 gallons per day (the five-year average per the UWMP) and the 20 percent conservation factor included in the UWMP, the projected SCAG 2035 population of 114,000 would require approximately 22,576 acre-feet per year (AFY) in the 2035. However, with a projected population of 131,690, build out of the proposed General Plan would require approximately 26,072 AFY in the year 2035. These numbers exceed the year 2035 projection in the UWMP since MCWD anticipates pumping a maximum 19,700 AF in 2035 (MCWD 2011). However, the proposed General Plan Conservation Element includes objectives and policies aimed at protecting existing and future water resources. Specifically General Plan objective and associated policies under CON-3 below require the City to work towards the protection and conservation of existing and future water resources by recognizing water as a limited resource that requires conservation. Moreover, the City has adopted a Water Conservation Ordinance to meet a State-mandated 20 percent reduction in water use from June 2015 through February 2016. With continued City consultation with local water districts regarding the City's growth projections and proposed development projects, combined with implementation of water efficiency programs, water supply should be able to meet demands.

In light of drought conditions in the State and region, consideration of drought impacts from the proposed General Plan Amendments is necessary. Under normal conditions, the UMWP indicates that both MCWD and IRWD would be able to meet its long-term service demand. Moreover, the UMWP provides demand and supply estimates for single- and multi-year drought conditions to assess the reliability of water sources. MCWD evaluated supply reliability by projecting supply and demand conditions for the single- and multi-year drought cases based on conditions affecting the SWP

(MCWD's largest and most variable supply). For this supply source, the single driest year was 1977 and the three-year dry period was 1990-1992. MCWD's analysis shows that the region can provide reliable water supplies not only under normal conditions but also under both the single driest year and the multiple dry year hydrologies (MCWD 2011).

The proposed General Plan Amendments do not contain policies or programs that would conflict with existing policies and standards designed to conserve water, such as the Water Conservation in Landscaping Act. The proposed General Plan Amendments include policies supporting green building and sustainable building practices that will support water conservation efforts. Specifically, Policy CON-2.E promotes the use of environmentally sustainable practices, and Policy CON-2.G requires all City facilities and services to incorporate green and sustainable building practices in new municipal facilities. Based on existing water supplies and existing and proposed water conservation efforts, impacts related to the need for new or expanded water supplies would be less than significant.

GOAL CON-2: CONSERVED NATURAL RESOURCES THROUGH ENVIRONMENTAL SUSTAINABILITY. Pursue Reduce the City's carbon footprint and manage resources wisely to meet the needs of a growing population and economy. Base community planning decisions on sustainable practices that reduce environmental pollutants, conserve resources, and minimize waste. Encourage the design of energy-efficient buildings, use renewable energy, and promote alternative methods of transportation.

Objective CON-2: Work towards the conservation of energy resources in both existing and new buildings, utilities, and infrastructure.

#### **Green Building Sustainable Development Practices**

Policy CON-2.E: Promote environmentally sustainable development principles for buildings, master

planned communities, neighborhoods, and infrastructure.

Policy CON-2.F: Encourage construction and building development practices that reduce resource

expenditures throughout the lifecycle of a structure.

Policy CON-2.G: Continue to require all City facilities and services to incorporate energy and

resource conservation standards and practices and the new municipal facilities be

built within the LEED Gold Standards.

Policy CON-2.H: Continue City green initiatives in purchases, equipment, and agreements that

favor sustainable products and practices.

#### GOAL CON-3: IMPROVED WATER SUPPLY AND QUALITY.

Pursue a multijurisdictional approach to protecting, maintaining, and improving water quality and the overall health of the watershed. A comprehensive, integrated approach will ensure compliance with Federal and State standards, and will address a range of interconnected priorities, including water quality and runoff; stormwater capture, storage and flood management techniques that focus on natural drainage; natural filtration and groundwater recharge through green infrastructure and habitat restoration; and water recycling and conservation.

<u>Objective CON-3:</u> Work towards the protection and conservation of the City's existing and future water resources by recognizing water as a limited resource that requires conservation.

### Water Supply, Conservation, and Recycling

Policy CON-3.B: Continue to consult with local water districts and the Orange County Water District

to ensure reliable, adequate, and high quality sources of water supply at a

reasonable cost.

Policy CON-3.C: Encourage residents, public facilities, businesses, and industry to minimize water

consumption, especially during drought years.

Policy CON-3.D: Restrict use of turf for new construction and landscape reinstallation that requires

high irrigation demands, except for area parks and schools, and encourage the

use of drought tolerant landscaping.

Policy CON-3.E: Consult with local water districts and the Orange County Water District to advance

water recycling program for new and existing developments, including the use of treated wastewater to irrigate parks, golf courses, roadway landscaping, and other

intensive irrigation consumers.

IMPACT 4.17.E Impacts related to insufficient wastewater treatment capacity would be less than significant with implementation of existing standards and regulations.

The proposed General Plan Amendments would not require expansion of existing wastewater treatment facilities because no development or other land altering activity is proposed. Future development accommodated under the General Plan could require expanded wastewater infrastructure to meet future needs when considered in light of existing demand. Localized environmental impacts associated with the future expansion of facilities are subject to project-level environmental review pursuant to CEQA. Impacts associated with a lack of wastewater treatment capacity include accelerated deterioration of existing facilities, the potential for health hazards due to wastewater backup, and discharges of untreated wastewater into the environment.

The Orange County Sanitation District has prepared a Facilities Implementation Plan that identifies long-term programs designed to maintain and expand wastewater treatment facilities to accommodate existing and future growth (OCSD 2015). Incremental expansion of facilities in accordance with the Wastewater System Master Plan is achieved through the Development Fee Program described above, with fees applied to developers. Facilities may be expanded by development project proponents, as well to ensure that adequate facilities are available to serve new development needs. The General Plan does not include policies that will interfere with the implementation of the current or future CIP or the collection of Public Improvement Fees. Pursuant to existing standards and regulations, impacts associated with a lack of wastewater treatment capacity will be less than significant.

IMPACT 4.17.F 4.17.G

Impacts associated with solid waste regulations and adequacy of disposal sites would be less than significant with implementation of existing policies and regulations.

Based on current waste generation rates of 5.2 lbs of trash per resident per day and 15.4 pounds per employee per day, approximately 409,530 tons of solid waste would be generated annually throughout the planning area, based on a buildout population of 131,690 residents and an employee base of 104,425 local workers. The majority of the waste will likely be disposed of at the Frank R. Bowerman Sanitary Landfill given its proximity to the planning area and the fact that it has over 55 percent of its capacity remaining (CalRecycle 2015).

The City will continue to implement a variety of solid waste reduction, recycling, and re-use measures to meet its obligation under AB 939. These efforts will be coordinated with waste management programs administered by the Costa Mesa Sanitary District; therefore, future landfill diversion rates may improve. The policies and programs of the General Plan Amendments would not interfere with implementation of existing solid waste disposal regulations and would in fact support them. Policies CON-2.J through CON-2.L below address waste reduction and recycling in various ways. Under any circumstance, solid wastes must be disposed of in accordance with federal and state laws. Impacts related to solid waste disposal methods and regulations would be less than significant.

## Solid Waste Reduction and Recycling

Policy CON-2.J: Encourage waste management programs that promote waste reduction and

recycling to minimize materials sent to landfills; and encouraging residents and

businesses to reduce, reuse, and recycle.

Policy CON-2.K: Support waste management practices that provide recycling programs and

promote organic recycling, landfill diversion, pursuing zero waste goals, proper hazardous waste collections, composting, and the continuance of recycling

centers.

Policy CON-2.L: Continue construction and demolition programs that require recycling and

minimize waste in haul trips.

# Mitigation Measures

No mitigation measures are required.

## References

CalRecycle. (2015) Disposal Reporting System (DRS): Jurisdiction Disposal and Alternative Daily Cover (ADC) Tons by Facility.

http://www.calrecycle.ca.gov/LGCentral/Reports/Viewer.aspx?P=ReportYear%3d2014%26ReportName%3dReportEDRSJurisDisposalByFacility%26OriginJurisdictionIDs%3d108

City of Costa Mesa. Master Plan of Drainage. Undated.

City of Costa Mesa (CM 2013). Public Works Department. Capital Improvement Program. 2009/2013

City of Costa Mesa Planning Division. (CMPD 2010). Water Efficient Landscape Guidelines. January 2010.

Costa Mesa Sanitary District. (CMSD 2015). *District Website: Trash Services and Solid Waste*. <a href="http://cmsdca.gov/index.php/departments/solid-waste/trash-services">http://cmsdca.gov/index.php/departments/solid-waste/trash-services</a> [Accessed January 4, 2015].

Irvine Ranch Water District .(IRWD 2015a). *IRWD Basics: A Snapshot*. <a href="https://www.irwd.com/about-us">https://www.irwd.com/about-us</a> [Accessed June 5, 2015].

Irvine Ranch Water District. (IRWD 2015b). *An Overview: Well-Grounded in Water Reliability*. http://irwd.com/images/pdf/about-us/IRWD-FactSheet-8-14.pdf [Accessed June 5, 2015].

Mesa Consolidated Water District (MCWD 2015). *Water District News*. <a href="http://www.mesawater.org/pdf/JulyAugNews.pdf">http://www.mesawater.org/pdf/JulyAugNews.pdf</a> [Accessed June 5, 2015].

Mesa Consolidated Water District. (MCWD 2011). 2010 Urban Water Management Plan. May 2011.

Orange County Flood Control District. (OCFCD 2015a). Flood Division Website: Drawings and Maps. <a href="http://ocflood.com/docs/drawings#maps">http://ocflood.com/docs/drawings#maps</a> [Accessed January 8, 2016].

Orange County Flood Control District. (OCFCD 2015b). Flood Division Website: Online Manuals. http://ocflood.com/docs/manuals [Accessed January 8, 2016].

Orange County Flood Control District. (OCFCD 2016a). Watershed D Map. http://ocflood.com/civicax/filebank/blobdload.aspx?blobid=32724 [Accessed January 8, 2016].

Orange County Flood Control District. (OCFCD 2016b). Watershed F Map. http://ocflood.com/civicax/filebank/blobdload.aspx?blobid=32728 [Accessed January 8, 2016].

Orange County Flood Control District. (OCFCD 2016c). Watershed G Map. <a href="http://ocflood.com/civicax/filebank/blobdload.aspx?blobid=32735">http://ocflood.com/civicax/filebank/blobdload.aspx?blobid=32735</a> [Accessed January 8, 2016].

Orange County Sanitation District. (OCSD 2015) *Final Administrative Facilities Implementation Plan.* June 10, 2015.