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Conservation

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5.1 INTRODUCTION



The Conservation Element addresses the topics of air quality, water resources, biological resources and historic and cultural resources. The California Government Code mandates that all General Plans include a Conservation Element. The purpose of the Conservation Element is to provide direction regarding the conservation, development and utilization of natural and historic resources.

5.2 AUTHORITY FOR THE ELEMENT

Authority for the Conservation Element is found in Section 65303 of the State Government Code. This Element meets State requirements concerning the Conservation Element as defined in Section 65302(d) of the Government Code. According to these requirements, the Conservation Element must contain goals and policies that further the protection and maintenance of the State's natural resources; such as water, air, energy, biological, solid waste, minerals and other natural resources; and prevents their wasteful exploitation, degradation and

destruction. This Element also addresses the preservation of cultural and historic resources.

5.3 SUMMARY OF EXISTING CONDITIONS

The following section inventories conservation resources in Placentia including water resources, air quality, energy resources, biological resources, solid waste, land resources and cultural resources. This inventory will provide the basis to identify issues to be addressed in this Element.

Water Resources

Water supply is always a concern throughout Southern California with increased development. As the native water supply decreases in certain regions, that the region's dependence on imported water grows. This section describes the quantity and quality of surface and groundwater resources within Placentia.

Surface Water

No naturally-occurring permanent surface water features exist within the City of Placentia. Tri-City Park (which is a County-owned facility) in northern Placentia contains a 10-acre man-made lake. Additionally, numerous small man-made lakes exist at the Alta Vista Country Club golf course. Two storm drain channels, Carbon Canyon Creek and Atwood Channel, intermittently carry water during heavy rains.



Other bodies of water located within close proximity of Placentia include a lake at Carbon Canyon Regional Park in Brea, a lake at Craig Regional Park in Fullerton, and Anaheim Lake in Anaheim. These water bodies are part of the main aquifer underlying most of the Placentia area.

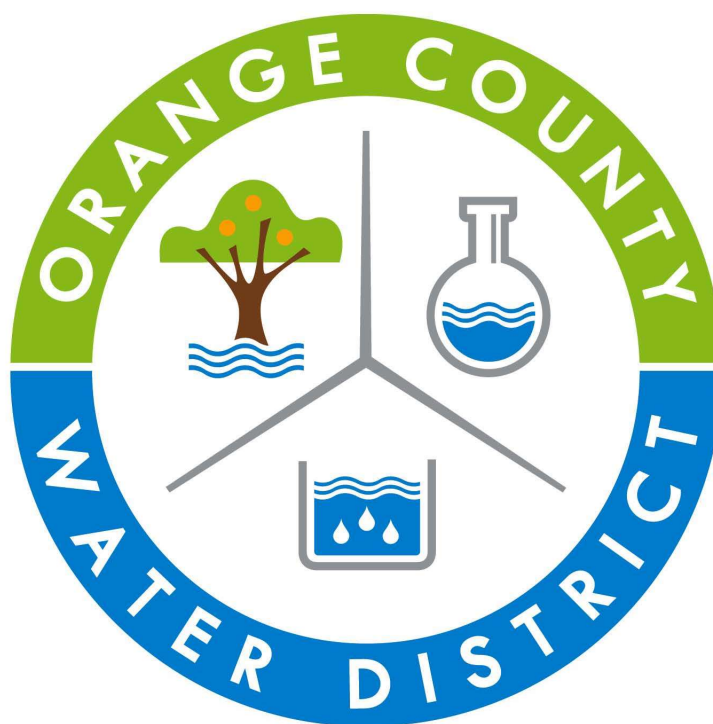
Groundwater

The 2004 Orange County Groundwater Management Plan, prepared by the Orange County Water District, outlines strategies for conserving water resources for all of Orange County, including the City of Placentia. The District's management of the Basin is guided by two primary objectives: protecting water quality and cost effectively increasing the Basin's sustainable yield.

There are several programs being implemented to improve basin management and decrease reliance upon imported water. The Metropolitan Water District (MWD) seasonal storage program gives local agencies financial incentives to store water through the winter months, thus reducing peak loads in the drier summer months. The Orange County Water District (OCWD) conjunctive use well program offers local agencies low interest loans for construction of up to three wells.

Placentia, in conjunction with the Golden State Water Company (GSWC), promotes voluntary water conservation strategies to be implemented year-round. Methods to reduce water consumption promotion of include drought-resistant landscaping and water saving irrigation, especially for City projects and new developments. Other measures include promoting low-flow showerheads and toilets, flow restrictors and drip irrigation.

The Golden State Water Company (GSWC) and Yorba Linda Water District (YLWD) provide water distribution in Placentia. Approximately 75 percent of Placentia's water use is obtained from the groundwater basin managed by the YLWD and GSWC. The remaining 25 percent of water is imported through the Municipal Water District of Orange County (MWDOC). Created by the State legislature in 1933, the Orange County Water District (OCWD) is responsible for maintaining the quantity and quality of groundwater underlying Placentia and much of northern Orange County.



SINCE 1933

Orange County Water District

The Orange County Water District (OCWD) was formed in 1933 by a special act of the California State Legislature to protect Orange County's rights to water in the Santa Ana River. OCWD's primary responsibility is managing the vast groundwater basin under northern and central Orange County that supplies water to more than 20 cities and water agencies, serving more than 2.3 million Orange County residents. Since 1933, OCWD has replenished and maintained the groundwater basin at safe levels while more than doubling the basin's annual yield. This important source of water provides local groundwater producers with a reliable supply of high-quality water.

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OCWD primarily recharges the basin with water from the Santa Ana River and, to a lesser extent, with imported water purchased from the Metropolitan Water District of Southern California. OCWD currently holds rights to all Santa Ana River flows reaching Prado Dam. Water enters the groundwater basin via settling or percolation ponds in the cities of Anaheim and Orange. Behind Prado Dam (constructed and owned by the U.S. Army Corps of Engineers for flood prevention), OCWD owns 2,400 acres in Riverside County, which the District uses for water conservation, water quality improvement and environmental enhancement.

OCWD monitors the groundwater taken out each year to ensure that the basin is not overdrawn; refills the basin; and carries out an assessment program to pay for operating expenses and the cost of imported replenishment water. The groundwater basin holds millions of acre-feet of water (an acre-foot satisfies the needs of two families for one year). The groundwater basin provides more than half of all water used within the District. Protection, safety and enhancement of groundwater are OCWD's highest priorities. With one of the most sophisticated groundwater protection programs in the country, OCWD uses more than 700 wells providing more than 1,400 sampling points—from which OCWD takes more than 18,000 water samples and conducts more than 350,000 analyses every year. OCWD's monitoring program looks for more than 330 constituents—far more than the 122 required by the regulatory agencies.

OCWD is leading the way in purification of wastewater for reuse to provide a reliable, new, drought-proof, high-quality source of water. The Groundwater Replenishment System, a joint project of OCWD and the Orange County Sanitation District, went on-line in January 2008 and can produce enough near-distilled quality water for 500,000 people.

Additional efforts to increase local water supplies include expanding the capacity of the existing percolation facilities, treating poor quality water to make it useable, studying methods to extend the life of filtration membranes, improving advanced purification technologies, using bacteria to remove contaminants, and studying the quality of Santa Ana River water and other water-related issues. Other OCWD groundwater management and water quality activities focus on expanding the Prado wetlands, groundwater treatment at well heads, computer modeling of the groundwater basin and conservation of endangered or threatened species.

About Groundwater

It's the high-quality water that makes up more than half of all water used in Orange County. The groundwater basin began forming millions of years ago as mountains eroded and ocean sediments filled a deep valley, trapping Santa Ana River water between the layers of accumulated sand and gravel. The deepest aquifers of the groundwater basin still contain pristine water that fell to the earth thousands of years ago. The water Orange County drinks today may have entered the basin one year, 100 years or 1,000 years ago, depending on the location and depth of the well. The groundwater basin holds between 10 million and 40 million acre-feet of water, of which 1.25 million to 1.5 million acre-feet is usable.

Groundwater has always been vital to the lives and livelihoods of Orange County residents. In the 1800s and early 1900s, Orange County's growing agricultural industry thrived because of a reliable, easily obtainable supply of water—water pumped from the ground below. As farmers continued to pump groundwater and divert water from the Santa Ana River for irrigation, they noticed that groundwater levels were falling. Pumps had to be lowered deeper into the ground to pump out

the same amount of water, requiring more energy. The question of seawater being drawn into the groundwater basin also was of serious concern.

Orange County's groundwater basin supplies up to 75% of the water needs for residents and businesses in Anaheim, Buena Park, Costa Mesa, Cypress, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Newport Beach, Irvine, La Palma, Los Alamitos, Orange, Placentia, Santa Ana, Seal Beach, Stanton, Tustin, Villa Park, Westminster and Yorba Linda.

Golden State Water Company

According to the Golden State Water Company Urban Water Management Plan, the Golden State Water Company's Placentia System receives its regular water supply from a combination of groundwater (four wells) and treated surface water via two interconnections to the Municipal Water District of Orange County (MWDOC). Exhibit 6-1, Water Sources, illustrates the location of the City's water wells. The combined capacity of the four wells in the Placentia System is approximately 2,900 gallons per minute (gpm) or 3.9 million gallons per day (mgd). Other Golden State Water Company facilities that serve the City of Placentia include one reservoir and two booster stations.

The average monthly residential water usage in Golden State Water's Region 3 Service Area is approximately 12 Ccf, the equivalent of 1,200 cubic feet or 8,976 gallons. This is driven primarily by larger homes and more outdoor water usage.

Three water systems serve the Placentia Customer Service Area. Water delivered to customers in the Placentia, system is a blend of groundwater pumped from the Orange County Groundwater Basin and imported water from the Colorado River Aqueduct and the State Water Project (imported and distributed by Metropolitan Water District of Southern California).

Yorba Linda Water District



The YLWD currently operates a total of eight water wells serving the City of Placentia. Six of these wells are located within the City (refer to Exhibit 6-1, *Water Sources*). The Yorba Linda Water District also provides water service via eleven reservoirs, two of which are located in the City of Anaheim and serve the City of Placentia. The system also provides one booster station within the City, two connections for treated imported water and one connection for untreated imported water. The eight wells have a total maximum pumping capacity of 15,000 gallons per minute (gpm). The two imported water connections have a total maximum pumping capacity of 18,000 gpm.

Wastewater

Municipal wastewater is generated in the City's service area from a combination of residential and commercial sources. Wastewater in the City is collected by gravity sewers and lift stations owned and operated by the City of Placentia. The wastewater is transported through trunk sewers to Orange County Sanitation District's (OCSD) Plant No. One in Fountain Valley and/or Plant No. Two in Huntington Beach.

OCSD's Plant No. 1 has a capacity of 182 Million Gallons per Day (MGD) and Plant No. 2 has a capacity of 150 MGD. Average daily flow is 96 MGD at Plant No. 1 and 102 MGD at Plant No. 2. During peak flow events, wastewater flows can be shifted between plants to meet changing flow conditions. The plants provide primary and secondary treatment.

Up to 90 MGD of effluent from OCSD is delivered to Orange County Water District (OCWD) for advanced treatment. This water is used for treatment processes,

landscaping, injected into the seawater intrusion barrier to protect groundwater, and for the Groundwater Replenishment System.

Stormwater Management

Stormwater runoff is a significant contributor to local and regional pollution. Urban stormwater runoff is the largest source of unregulated pollution to the waterway and coastal areas of the United States. Stormwater can be contaminated with a variety of pollutants that contribute to increased health risks and environmental damage.

The City of Placentia seeks to protect and promote the health, safety and welfare of its citizen by controlling non-stormwater discharges to the stormwater conveyance system. The City is required by the Clean Water Act and other federal, state and regional regulations to control the discharge of pollutants to the storm drain system, including the discharge of pollutants from construction sites and areas of new development or significant redevelopment.



Federal Requirements

Local stormwater pollution control measures are implemented pursuant to the Clean Water Act, Federal Water Quality Control Act and National Pollutant Discharge Elimination System (NPDES).

Clean Water Act

The Federal Clean Water Act prohibits any person from discharging pollutants through a “point source” into a “water of the United States” unless they have an NPDES permit. NPDES permits regulate the discharges from publicly owned facilities. The NPDES program also regulates wet weather discharges such as

stormwater discharges from industrial activities and municipal stormwater discharges including, urban stormwater runoff, combined sewer overflows, and storm sewer overflows.

The Clean Water Act amendments of 1987 established a framework for regulating stormwater discharges from municipal, industrial and construction activities under the NPDES program. The primary objectives of the municipal stormwater program requirements are to effectively prohibit non-stormwater discharges and reduce the discharge of pollutants from stormwater conveyance systems to the maximum extent practicable (MEP), including management practices, control techniques and systems, design engineering method and such other provisions that the U.S. EPA or the California State Water Resources Control Board deem appropriate for the control of such pollutants.

National Pollution Discharge Elimination System (NPDES) Stormwater Program

Mandated by Congress under the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) Stormwater program is a comprehensive two-phased national program for addressing the non-agricultural sources of stormwater discharges adversely affecting the quality of the nation's waters. The Program uses the NPDES permitting mechanism to require the implementation of control and monitoring measures designed to prevent harmful pollutants from being washed into local water bodies by stormwater runoff.

The NPDES program requires the owner or operator of any facility, or any person responsible for any activity that discharges waste into the surface waters of the U.S. to obtain a NPDES permit from the Regional Water Quality Control Board, as mandated by the Clean Water Act.

State and Regional Programs

The Clean Water Act provides that states are authorized to operate their own NPDES programs provided such programs meet minimum federal requirements. The Santa Ana Regional Water Quality Control Board issues the municipal storm water National Pollutant Discharge Elimination System permit. The City of Placentia currently operates under Permit No. CAS618030, Order No. R8-2010-0062.

Order No. R8-2002-0010 expired on January 19, 2007. On July 22, 2006, the permittees submitted a Report of Waste Discharge for renewal of the Permit. On February 20, 2007, Order No. 2002-0010, NPDES No. CAS618030, was administratively extended in accordance with Title 23, Division 3, Chapter 9, §2235.4 of the California Code of Regulations.

Orange County Municipal NPDES Storm Water Permit (Order No. R8-2009-0030, Amended by Order No. R8-2010-0062.

Proposed Orange County Municipal NDPES Storm Water Permit (Draft Order No. R8-2016-0001).

The objective of the Order is to protect the beneficial uses of receiving waters in Orange County. To meet this objective the first term permit (Order No. 90-71) required permittees to implement requirements to reduce discharge of pollutants in surface waters from urban runoff to the maximum extent practicable. The second term permit (Order No. 96-31) required continued implementation of the first term permit required the permittees to focus on those areas that threaten beneficial uses. The current term permit (current Order No. R8-2010-0062) outlines additional steps for an effective storm water management program and specifies requirements to protect the beneficial uses of all receiving waters. Permittees are required to examine sources of pollutants in storm water runoff from activities, which the permittees conduct, approve, regulate and/or authorize by issuing a license or permit.

Locally, the Order requires the City of Placentia to minimize short- and long-term impacts on receiving water quality from new development and significant redevelopment to the maximum extent practicable. The City's General Plan must be reviewed and updated as necessary, to ensure that watershed and storm water quality and quality management are considered in accordance with the Order.

Conservation of Water Resources

Southern California suffered a severe drought during the 1980s and early 1990s requiring the importing of water to meet growing demands of the region. The Metropolitan Water District imports water from the Colorado River via the Colorado River Aqueduct and from northern California via the State Water Project to obtain water supplies from sources outside of Southern California.

In recognition of California's limited water supply, the Golden State Water Company (GSWC) has created voluntary measures to promote water conservation in Placentia. Current programs include the distribution of low flush toilets and offering conservation information to residential customers regarding their water use patterns.

The Model Water Efficiency Landscape Ordinance (MWELO), created by the State, was adopted by City of Placentia in November 2016. Placentia adopted these measures in the Municipal Code and require compliance with each new development.

Yorba Linda Water District Conservation Efforts

The Yorba Linda Water District Board has passed a Conservation Ordinance. The water conservation ordinance consists of permanent year-round restrictions, focused on the prevention of water waste, and four "Water Supply Shortage" stages. These stages would have increasing restrictions on water use in order to allow

District to meet all health and safety guidelines in the face of water shortages. While the permanent restrictions would be in effect all the time, the District would change from stage to stage based on MWD's declared "water condition alert". The ordinance also contains a financial penalty structure similar to a code enforcement violation, for the waste of water. Examples of the permanent restrictions include:

- No irrigation between 9:00 a.m. and 6:00 p.m. ***
- Limiting of irrigation to fifteen (15) minutes per station per day ***
- No irrigation when it is raining
- No runoff
- No washing down of hard or paved surfaces

The YLWD provides an electronic newsletter to inform its customers of conservation topics. It also provides a speaker's bureau and conservation topic links on its website. Several informational flyers are available for download from the website as well.

Yorba Linda Water District offers several residential rebate programs through the Municipal Water District of Orange County (MWDOC) to help you conserve water:

- SmarTimers (also for Commercial users)
- High Efficiency Clothes Washers
- High Efficiency Toilets
- Rotating Nozzles
- Turf Removal Program

Yorba Linda Water District encourages its customers to use water wisely. They promote several methods for the home:

- Nearly half of all home water use goes for lawn and garden irrigation. Reducing outdoor irrigation use is the best opportunity for well water savings.
- Adjust sprinklers to avoid "watering" sidewalks, driveways and the street. Lower pressure to avoid creating a wasteful mist.
- Yards need little or no watering during the cool late fall, winter and early spring months. Program automatic controllers to fit the season.
- Don't let the hose run while washing your car.
- Use a broom instead of a hose to clean sidewalks, driveways, patios, tennis courts and other paved areas.
- A pool or spa cover prevents wasteful evaporation.
- Fix leaky pipes and faucets. A steady drip can waste up to 600 gallons of water each month.
- Automatic dish and clothes washers are very efficient when used for full loads. More water efficient clothes washers are now available. ^[1]_{SEP}
- Call the District for details on clothes washer rebate programs.

- Older toilets use up to seven gallons of water per flush. They should be replaced with new ultra-low-flush models that use only 1.6 gallons.
- Low-flow showerheads save water and money every time you take a shower.
- A half-filled bath tub requires less water than all but the shortest shower.

GOLDEN STATE WATER COMPANY CONSERVATION EFFORTS

Golden State Water Company is subject a local city ordinance which requires water conservation efforts. The average monthly residential water usage in Golden State Water's Region 3 Service Area is approximately 1,200 cubic feet or 8,976 gallons. This is driven primarily by larger homes and more outdoor water use.

The Golden State Water Company, in partnership with the MWD and MWDOC offers rebate and incentives to their customers for:

- High Efficiency Toilet
- High Efficiency Clothes Washer
- Weather-Based Irrigation Controllers (Smart Controllers)
- Soil Moisture Sensors Rebate
- Efficient Sprinkler Nozzle Rebate
- Rain Barrel Rebate

They provide a Turf Removal Program providing incentives to remove high water using turf and install climate appropriate landscaping.

Air Quality

This section is based on an Air Quality and Greenhouse Gas Analysis, prepared in October 26, 2018. The purpose of the analysis was to project air quality conditions associated with this General Plan update. Many land use decisions that involve siting, zoning and permitting actions provide opportunities to complement local and state air regulations and prevent or minimize adverse health impacts with regards to air quality. In local planning and policy development, sensitive land uses are given special consideration to best protect those individuals that are especially vulnerable to the effects of air pollution. This analysis provides a basis to inform policy direction and implement measures that allow the Basin to attain Federal and State air quality standards, as well as to protect Placentia residents and businesses from the harmful effects of poor air quality.

Perhaps the greatest air quality issue facing American cities today is how to address global warming. The temperature of the earth is rising at nearly twice the rate it was nearly 50 years ago. ¹ Global warming occurs when carbon dioxide (CO₂) and other air pollutants and greenhouse gases collect in the atmosphere and absorb sunlight and solar radiation that have bounced off the earth's surface. Normally, this

¹ National Geographic, nationalgeographic.com

radiation would escape into space—but these pollutants, which can last for years to centuries in the atmosphere, trap the heat and cause the planet to get hotter. This is what is known as the “greenhouse effect.”

Greenhouse gases trap heat and make the planet warmer. Human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last 150 years.¹ The largest source of greenhouse gas emissions from human activities in the United States is from burning fossil fuels for electricity, heat, and transportation.²

It is important for cities to address global warming by adopting policies and practices that help reduce greenhouse gases. Cities can adopt policies that:

- Focus higher density development within existing urban or developed areas;
- Facilitate and increase biking, walking, and public transportation and reduce vehicle miles traveled;
- Follow the tenets of “complete neighborhoods” where local services, schools, and parks are within walking distance of residences;
- Provide incentives for mixed-use development; and
- Mandate energy and water conservation and green building practices.

² Environmental Protection Agency, www.epa.com

Existing Setting

South Coast Air Basin

Geography



The City of Placentia is located in the South Coast Air Basin (Basin), a 6,600-square mile area bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Geronio Pass area of Riverside County. The Basin's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) determine its distinctive climate.

The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. The climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the Basin.

Climate

The climate in the Basin is characterized by moderate temperatures and comfortable humidity, with precipitation limited to a few storms during the winter season (November through April). The average annual temperature varies little throughout the Basin, averaging 75 degrees Fahrenheit (°F). However, with a less pronounced oceanic influence, the eastern inland portions of the Basin show greater

variability in annual minimum and maximum temperatures. January is usually the coldest month at all locations, while July and August are usually the hottest months of the year. Although the Basin has a semi-arid climate, the air near the surface is moist due to the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as “high fog,” are a characteristic climate feature.

Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation in the Basin is typically 9 to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the Basin.

In the City of Placentia, the climate is typically warm during summer when temperatures tend to be in the 70’s and cool during winter when temperatures tend to be in the 50’s. The warmest month of the year is August with an average maximum temperature of 89°F, while the coldest month of the year is December with an average minimum temperature of 47°F. Temperature variations between night and day tend to be moderate during summer with a difference that can reach 24°F, and moderate during winter with an average difference of 23°F. The annual average precipitation in Placentia is 13.53 inches. Rainfall is evenly distributed throughout the year. The wettest month of the year is February with an average rainfall of 3.18 inches.³

Ambient Air Quality

The monitoring stations in the State are operated by the California Air Resources Board (CARB), local Air Pollution Control Districts or Air Quality Management Districts, by private contractors, and by the National Park Service. These entities operate more than 250 air monitoring stations in California. Air quality monitoring stations usually measure pollutant concentrations ten feet above ground level. In the Basin, each monitoring station is located within a Source Receptor Area (SRA). The communities within an SRA are expected to have similar climatology and ambient air pollutant concentrations. The City of Placentia is in SRA 16 (North Orange County).

Pollutants Measured

The following air quality information briefly describes the various types of pollutants monitored at the Anaheim Monitoring Station. The Anaheim Monitoring Station is the nearest to the City within SRA 16. Air quality data from 2015 through 2017 is provided in [Table 1, Local Air Quality Levels](#).

³ The Weather Channel, *Average Weather for Placentia, CA*, Accessed October 9, 2018. <https://weather.com/ weather/monthly/I/USCA0875:1:US>.

Carbon Monoxide (CO). CO is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions.

CO replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency, as seen in high altitudes) are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of CO. Exposure to high levels of CO can slow reflexes and cause drowsiness, as well as result in death in confined spaces at very high concentrations.

Table 1. Local Air Quality Levels

Pollutant	California Standard	Federal Standard	Year	Maximum ¹ Concentration	Days (Samples) State/Federal Std. Exceeded
Ozone (O ₃) (1-Hour) ²	0.09 ppm for 1 hour	NA ⁵	2015	0.100 ppm	1/0
			2016	0.103	2/0
			2017	0.090	0/0
Ozone (O ₃) (8-Hour) ²	0.07 ppm for 8 hours	0.07 ppm for 8 hours	2015	0.080 ppm	1/1
			2016	0.074	4/4
			2017	0.076	4/4
Carbon Monoxide (CO)(1-Hour) ²	20.0 ppm for 1 hour	35.0 ppm for 1 hour	2015	3.07 ppm	0/0
			2016	2.61	0/0
			2017	2.45	0/0
Carbon Monoxide (CO)(8-Hour) ²	9.0 ppm for 8 hours	9.0 ppm for 8 hours	2015	8.0 ppm	0/0
			2016	8.0	0/0
			2017	8.0	0/0
Nitrogen Dioxide (NO ₂)(1-Hour) ²	0.18 ppm for 1 hour	0.100 ppm for 1 hour	2015	0.0591 ppm	0/0
			2016	0.0643	0/0
			2017	0.0812	0/0
Particulate Matter (PM ₁₀) ^{2, 3, 4}	50 µg/m ³ for 24 hours	150 µg/m ³ for 24 hours	2015	59.0 µg/m ³	2/0
			2016	74.0	NA/0
			2017	95.7.0	NA/0
Fine Particulate Matter (PM _{2.5}) ^{2, 4}	No Separate State Standard	35 µg/m ³ for 24 hours	2015	45.8 µg/m ³	NA/3
			2016	44.4	NA/1
			2017	53.9	NA/7

ppm = parts per million; PM₁₀ = particulate matter 10 microns in diameter or less; NM = not measured; µg/m³ = micrograms per cubic meter; PM_{2.5} = particulate matter 2.5 microns in diameter or less; NA = not available.

Pollutant	California Standard	Federal Standard	Year	Maximum ¹ Concentration	Days (Samples) State/Federal Std. Exceeded
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Notes:

1. Maximum concentration is measured over the same period as the California Standards.
2. Anaheim Monitoring Station located at 1630 Pampas Lane, California 92802.
3. PM₁₀ exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.
4. PM₁₀ and PM_{2.5} exceedances are derived from the number of samples exceeded, not days.
5. The Federal standard was revoked in June 2005.

Sources:

1. Aerometric Data Analysis and Measurement System (ADAM), summaries from 2015 to 2017, <http://www.arb.ca.gov/adam>.
2. Quality Assurance Air Monitoring Sites, https://www.arb.ca.gov/qaweb/site.php?s_arb_code=30031.
3. Air Data, Tables of 8-Hour Average Data, https://aqs.epa.gov/aqsweb/airdata/download_files.html#eighthour.

Nitrogen Dioxide (NO_x). NO_x are a family of highly reactive gases that are a primary precursor to the formation of ground-level O₃ and react in the atmosphere to form acid rain. Nitrogen dioxide (NO₂) (often used interchangeably with NO_x) is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO₂ occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations).

NO₂ can irritate and damage the lungs and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO₂ concentrations that are typically much higher than those normally found in the ambient air, may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO₂ may aggravate eyes and mucus membranes as well as cause pulmonary dysfunction.

Ozone (O₃). O₃ occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric (the "good" O₃ layer) extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

The "Bad" O₃ is a photochemical pollutant, and needs reactive organic compounds (ROGs), NO_x, and sunlight to form; therefore, ROGs and NO_x are O₃ precursors. Precursors are a group of pollutants that combine to create other pollutants. In this case ROG and NO_x combine with sunlight to create ground-level O₃. To reduce O₃ concentrations, it is necessary to control the emissions of these O₃ precursors. Significant O₃ formation generally requires an adequate amount of precursors in the

atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High O₃ concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While O₃ in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level O₃ (in the troposphere) can adversely affect the human respiratory system and other tissues. O₃ is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of O₃. Short-term exposure (lasting for a few hours) to O₃ at levels typically observed in Southern California can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache, and nausea.

Coarse Particulate Matter (PM₁₀). PM₁₀ refers to suspended particulate matter which is smaller than 10 microns (or ten one-millionths) of a meter. PM₁₀ arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM₁₀ scatters light and significantly reduces visibility. In addition, these particulates penetrate in the lungs and can potentially damage the respiratory tract. On June 19, 2003, CARB adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25).

Fine Particulate Matter (PM_{2.5}). Due to recent increased concerns over health impacts related to PM_{2.5}, both State and Federal PM_{2.5} standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease. In 1997, the U.S. Environmental Protection Agency (EPA) announced new PM_{2.5} standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the U.S. Supreme Court reversed this decision and upheld the EPA's new standards.

On January 5, 2005, the EPA published a Final Rule in the Federal Register that designates the Orange County portion of the Basin as a nonattainment area for Federal PM_{2.5} standards. On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.

Sulfur Dioxide (SO₂). SO₂ is a colorless, irritating gas with a rotten egg smell. It is formed primarily by the combustion of sulfur-containing fossil fuels, such as gasoline and diesel fuel. Sulfur is a natural component in crude oil that ends up in gasoline and diesel unless removed. Sulfur dioxide is often used interchangeably with sulfur oxides (SO_x) and lead (Pb). Exposure of a few minutes to low levels of SO₂ can result in airway constriction in some asthmatics. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO₂.

Reactive Organic Gases (ROG) and Volatile Organic Compounds (VOC). Hydrocarbons are organic gases that are formed solely of hydrogen and carbon that exist in the ambient air. There are several subsets of organic gases including ROGs and VOCs. ROGs contribute to the formation of smog and/or may be toxic themselves. ROGs often have an odor; some examples include gasoline, alcohol, and the solvents used in paints. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation). Although ROGs and VOCs they represent slightly different subsets of organic gases, they are used interchangeably for the purposes of this analysis. On a regional emissions level, adverse effects on human health are not caused directly by VOCs, but rather by reactions of VOC to form secondary pollutants such as O₃.

Primary Sources of Air Pollutant Emissions

Air pollutants within the City of Placentia are generated by stationary and mobile sources. These emission sources are described below.

Stationary and Point Sources

Stationary source emissions refer to those that originate from a single place or object that does not move around. Typical stationary sources include buildings, power plants, mines, smokestacks, vents, incinerators, and other facilities using industrial combustion processes. Stationary point sources have one or more emission sources at a facility with an identified location and are usually associated with manufacturing and industrial projects.

The City of Placentia also contains several point sources, a single identifiable source of air pollution. A variety of pollutants, including reactive hydrocarbons from activities such as spray painting, are generated by smaller commercial and industrial uses. Industrial uses are generally located in the southern portion of the City adjacent to the Burlington Northern Santa Fe (BNSF) rail line. While each use might not represent a significant source of air pollution, the cumulative effects of development within the City could be significant. For example, the combination of several point sources could represent a substantial amount of emissions. Although the number and nature of future additional air pollutant point sources is presently unknown, each individual source would be required to comply with rules and regulations established by the SCAQMD. These regulations require that sources of

hazardous materials or criteria pollutants above threshold levels obtain permits prior to operation of the facility.

Mobile Sources

Mobile sources of emissions refer to those moving objects that release pollution and include cars, trucks, busses, planes, trains, motorcycles, and gasoline-powered lawn mowers. Mobile source emissions may be classified as on- or off-road sources. Increased traffic volumes within the City of Placentia could contribute to regional incremental emissions of NO_x, VOC, CO, SO_x, and PM₁₀. The following is a listing of emissions that typically emanate from vehicular sources:

- Vehicle running exhaust (VOC, CO, NO_x, SO_x, and PM₁₀);
- Vehicle tire wear particulates (PM₁₀);
- Vehicle brake wear particulates (PM₁₀);
- Vehicle variable starts (VOC, CO, NO_x) – starting a vehicle and the first few minutes of driving generate higher emissions because the emissions-control equipment has not yet reached its optimal operating temperature;
- Vehicle hot soaks [cooling down] (VOC) – the engine remains hot for a period of time after the vehicle is turned off, and gasoline evaporates when the car is parked while cooling down;
- Vehicle diurnal [while parked and engine is cool] (VOC) – even when the vehicle is parked for long periods of time, gasoline evaporation occurs as the temperature rises during the day;
- Vehicle resting losses (VOC) – includes the escape of fuel vapor from the fuel system while the vehicle is inoperative; and
- Vehicle evaporative running losses (VOC) – the hot engine and exhaust system can vaporize gasoline while the vehicle is running.

On-Road Sources. These sources are considered to be a combination of emissions from automobiles, trucks, and indirect sources. Major sources of mobile emissions in the City of Placentia include the local and regional roadway network. State Route 57 (SR-57) passes through the southwest portion of the City in a north-south direction and State Route 90 (Imperial Highway) passes through northeast portion of the City. State Route 91 (SR-91) is located outside the City boundary to the south, traversing in an east-west direction. Additionally, major and primary arterials that serve the City are Orangethorpe Avenue, Yorba Linda Boulevard, Chapman Avenue, Placentia Avenue, Kraemer Boulevard, Rose Drive/Tustin Avenue, Lakeview Avenue, and Bastanchury Road.

Indirect on-road sources of emissions are those that by themselves may not emit air contaminants; however, they indirectly cause the generation of air pollutants by attracting vehicle trips or by consuming energy. Examples of these indirect sources include an office complex or commercial center that generates trips and consumes energy resources.

Off-Road Sources. Off-road sources include aircraft, trains, construction equipment, and landscape equipment. The Fullerton Municipal Airport, approximately five miles to the west of the City, is one of the primary sources of air traffic from a nearby city. The nearest common-carrier airport is John Wayne Airport in the City of Santa Ana, approximately 15 miles south of the City. Additionally, the BNSF railroad crosses the City. The railroad serves BNSF freight trains as well as the Metrolink 91 Line. The BNSF operates a major double-track freight rail line known as the Orange County Gateway along the Orangethorpe Corridor. This rail line connects the Port of Los Angeles with the Inland Empire and Midwest United States. The nearest Metrolink train station is currently located in Fullerton, approximately 4 miles west of the City, which provides commuter train service from Oceanside to Los Angeles Union Station. The nearest Amtrak train station is also located in Fullerton. Plans are underway to begin construction of a Metrolink commuter train station in 2019, to be located at the intersection of Melrose Avenue and Crowther Avenue.⁴ Construction activities are typically temporary and intermittent and can be located at various locations within the City. Landscape equipment emissions would occur more regularly and would occur throughout the City, especially within residential areas.

Emissions from off-road sources include NO_x and diesel particulate matter, which contribute to public health problems. The EPA has set emission standards for the engines used in most construction, agricultural, and industrial equipment. The EPA has adopted off-road diesel fuel requirements to decrease the allowable levels of sulfur, which can damage advanced emission control technologies. Additionally, in 2007, CARB adopted the In-Use Off-Road Diesel Vehicle to reduce diesel particulate matter and NO_x emissions from in-use off-road heavy-duty diesel vehicles in California.⁵

Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than are the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics and CO are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, churches, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The majority of land uses located within the City that are sensitive to air pollution include residential uses (particularly those in the vicinity of SR-57), schools, hospitals, churches, and parks. There is a total of 16 schools located within the City of Placentia. Of those 16 schools, ten are elementary schools, two are middle schools, three are high schools,

⁴ KOA Corporation, *City of Placentia General Plan Mobility Element Update Technical Traffic Study*, August 2018.

⁵ California Air Resources Board, *In-Use Off-Road Diesel Vehicle Regulation*, October 1, 2018, <http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>, accessed October 9, 2018.

and there is one District Education Center. Additionally, there is one hospital, several parks and a golf course located within the City.

Regulatory Framework

This section discusses the Federal, State, and regional air quality policies and requirements applicable to the City of Placentia.

Federal

Air quality is protected by the Federal Clean Air Act (FCAA) and its amendments. Under the FCAA, the EPA developed the primary and secondary National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants including O₃, NO₂, CO, SO₂, PM₁₀, PM_{2.5}, and Pb. A nonattainment area is an area where pollutant concentrations do not meet the National Ambient Air Quality Standards and/or California Ambient Air Quality Standards. Proposed projects in or near nonattainment areas could be subject to more stringent air-permitting requirements. The FCAA requires each state to prepare a State Implementation Plan (SIP) to demonstrate how it will attain the NAAQS within the federally imposed deadlines.

The EPA can withhold certain transportation funds from states that fail to comply with the planning requirements of the FCAA. If a state fails to correct these planning deficiencies within two years of Federal notification, the EPA is required to develop a Federal implementation plan for the identified nonattainment area or areas. The provisions of 40 *Code of Federal Regulations (CFR)* Parts 51 and 93 apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan. The EPA has designated enforcement of air pollution control regulations to the individual states.

State

In 1988, the California Clean Air Act (CCAA) was adopted and led to the establishment of the California Ambient Air Quality Standards (CAAQS) for the same major pollutants, as the NAAQS and to standards for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. There are currently no NAAQS for these latter pollutants. CARB is responsible for enforcing air pollution regulations in California. The CCAA requires all air pollution control districts in California to endeavor to achieve and maintain state ambient air-quality standards by the earliest practicable date and to develop plans and regulations specifying how they will meet this goal. [Table 5](#) also depicts the FCAA and CCAA attainment status for the South Coast Air Basin, wherein the City of Placentia is located.

Regional

South Coast Air Quality Management District

The *2016 Air Quality Management Plan* (2016 AQMP), which was adopted by the SCAQMD in March 2017, proposes policies and measures to achieve Federal and State air quality standards in the South Coast Air Basin (Basin) and those portions of the Salton Sea Air Basin (formerly named the Southeast Desert Air Basin) that are under the SCAQMD's jurisdiction. The 2016 AQMP relies on a regional and multi-level partnership of governmental agencies at the Federal, State, regional, and local level. These agencies (EPA, CARB, local governments, Southern California Association of Governments [SCAG] and the SCAQMD) are the primary agencies that implement the 2016 AQMP programs. The 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including the *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (2016-2040 RTP/SCS), updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts.

The 2016 AQMP addresses several state and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models. The 2016 AQMP highlights the reductions and the interagency planning necessary to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under federal Clean Air Act. The primary task of the 2016 AQMP is to bring the Basin into attainment with federal health-based standards.

Southern California Association of Governments

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the Federally-designated metropolitan planning organization (MPO) for the Southern California region and is the largest metropolitan planning organization in the United States. With respect to air quality planning, SCAG has prepared the *Regional Comprehensive Plan: Helping Communities Achieve a Sustainable Future* for the region, which includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation control portions of the 2016 AQMP. SCAG is responsible under the FCAA for determining conformity of projects, plans, and programs within the SCAQMD.

Greenhouse Gases and Global Climate Change

Climate Change

Climate change is a distinct change in average meteorological conditions with respect to temperature, precipitation, and storms. Climate change can result from both natural processes and/or from human activities. Natural changes in the climate result from very small variations in the Earth's orbit which changes the amount of solar energy the planet receives. Human activities can affect the climate

by emitting heat absorbing gases into the atmosphere and by making changes to the planet's surface, such as deforestation and agriculture. The following impacts to California from climate change have been identified:

- Higher temperatures, particularly in the summer and in inland areas,
- More frequent and more severe extreme heat events,
- Reduced precipitation, and a greater proportion of precipitation falling as rain rather than snow,
- Increased frequency of drought conditions,
- Rising sea levels,
- Ocean water becoming more acidic, harming shellfish and other ocean species, and
- Changes in wind patterns.

These direct effects of climate change may in turn have a number of other impacts, including increases in wildfires, coastal erosion, reduced water supplies, threats to agriculture, and the spread of insect-borne diseases.

Greenhouse Gases

Greenhouse gases (GHGs) are naturally present in the Earth's atmosphere and play a critical role in maintaining the planet's temperature. The natural process through which heat is retained in the troposphere is called the "greenhouse effect." The greenhouse effect traps heat in the troposphere through a threefold process as follows: short wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long wave radiation; and GHGs in the upper atmosphere absorb this long wave radiation and re-emit this long wave radiation in all directions, with some radiation heading out into space and some heading back toward the Earth. This "trapping" of the long wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect. Without the presence of GHGs, the Earth's average temperature would be approximately zero degrees Fahrenheit.

The most abundant GHGs are water vapor and carbon dioxide (CO₂). Many other trace gases have greater ability to absorb and re-radiate long wave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-radiate long wave radiation. (See the Air Quality Analysis, October 2018, in the Environmental Impact Report for the General Plan Update for a list of all greenhouse gases and their sources.)

Greenhouse Gas Emissions Inventory

United States GHG Emissions

The United States is the second largest emitter of GHGs globally (behind China) and emitted approximately 6.5 billion metric tons of CO₂ equivalent (MTCO₂e) in 2016, not including GHG absorbed by forests and agricultural land. The largest source of GHG in the United States (28.5 percent) comes from burning fossil fuels for transportation. Electrical power generation accounted for the second largest portion (28.4 percent) and industrial emissions accounted for the third largest portion (21.6 percent) of U.S. GHG emissions. The remaining 21.5 percent of U.S. GHG emissions were contributed by the agriculture, commercial, and residential sectors, plus emissions generated by U.S. Territories. Agriculture accounted for 9.4 percent of the U.S. emission, commercial accounted for 6.4 percent, and residential accounted for 5.1 percent with U.S. territories accounting for 0.6 percent of emissions.⁶

California GHG Emissions

In 2016, California emitted 429.4 million MTCO₂e of GHG⁷, more than any other state except Texas.⁸ According to the *California Greenhouse Gas Emission Inventory 2017 Edition* by the California Air Resources Board (CARB), transportation was the single largest source of the state's GHG emissions and accounted for 39 percent of the state wide total. The California's industrial sector generated 23 percent of the state's GHG and electricity generation (including electricity generated out-of-state but used in California) was responsible for 19 percent of the GHG total. The agricultural sector at 8 percent, residential sector at 6 percent, and commercial sector at 5 percent accounted for the remaining GHG emissions.

City of Placentia GHG Emissions

An estimation of existing greenhouse gas emission for the City of Placentia was conducted as part of the air quality analysis (October 2018). This analysis summarized the GHG emissions within the City for area, energy, mobile, waste, and water categories. The emissions inventory is based on existing land use information and traffic behavior. The data used to calculate the GHG emissions is based on the City's existing land use inventory provided by City of Placentia, August 2018. According to the analysis, mobile sources are generally the largest contributor to GHG levels.

The air quality analysis also summarized the City's future emission of pollutants for the proposed General Plan update. The data used to calculate the emissions inventory for criteria pollutants is based on the General Plan update land use inventory provided by the City of Placentia, August 2018. According to this analysis, mobile sources remain the largest contributor to the estimated annual average GHG emissions.

⁶ U.S. Environmental Protection Agency, *Inventory of United States Greenhouse Gas Emissions and Sinks 1990 to 2016*, April 2018.

⁷ California Air Resources Board, *California Greenhouse Gas Emission Inventory – 2018 Edition*, <https://www.arb.ca.gov/cc/inventory/data/data.htm>, accessed on October 16, 2018

⁸ U.S. Energy Information Administration, *Energy-Related Carbon Dioxide Emissions by State, 2000-2015*, January 2018.

Regulatory Programs

Federal

To date, no national standards have been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

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

U.S. Environmental Protection Agency Endangerment Finding. The EPA authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs (carbon dioxide [CO₂], methane [CH₄], nitrous oxide [N₂O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF₆]) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed above, the George W. Bush Administration issued Executive Order 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for

model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO₂ in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

Clean Power Plan and New Source Performance Standards for Electric Generating Units. On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO₂ emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility

generating units (80 FR 64661–65120). The rule prescribes CO₂ emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits. Additionally, in March 2017, President Trump directed the EPA Administrator to review the Clean Power Plan in order to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

Presidential Executive Order 13783. Presidential Executive Order 13783, Promoting Energy Independence and Economic Growth (March 28, 2017), orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

State

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is occurring, and that there is a real potential for severe adverse environmental, social, and economic effects in the long term. Every nation emits GHGs and as a result makes an incremental cumulative contribution to global climate change; therefore, global cooperation will be required to reduce the rate of GHG emissions enough to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions. Currently, there are approximately fourteen different executive orders, assembly bills, and senate bills all having the goal of reducing statewide emission. (See the Air Quality Analysis, October 2018, in the Environmental Impact Report for the General Plan Update for a list of all initiatives.)

California Air Resources Board

The California Air Resources Board (CARB) is a publicly appointed board of sixteen members whose overall charge is to reduce air pollution and protect the public health. The Board is charged with protecting the public from the harmful effects of air pollution and developing programs and actions to fight climate change.

CARB Scoping Plan

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB32)], which created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required the California Air Resources Board (ARB or Board) to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the Board in 2008 and is updated every five years.

The latest CARB Scoping Plan update functions as a roadmap to achieve the 2030 GHG reduction goal of reducing greenhouse gas emissions in California to 40

percent of their 1990 levels. The 2017 scoping plan update builds on previous air pollution reduction actions and takes aim at the 2030 target established by State Senate Bill 32. (See the Air Quality Analysis, October 2018, in the environmental impact report for the General Plan Update for details of the Scoping Plan.)

REGIONAL

The Southern California region has begun to address climate change through its regional planning process, as described in this section.

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the designated metropolitan planning organization for all jurisdictions in Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties, including Placentia. SCAG is required to prepare a Sustainable Communities Strategy as part of its Regional Transportation Plan (RTP) to reduce vehicle travel emissions to 13 percent below 2005 per capita emissions by 2035. The most recent update to the Regional Transportation Plan was approved in 2016.

SCAG's first Sustainable Communities Strategy was incorporated into the Regional Transportation Plan in 2012, providing broad guidance to support focused development in key areas, improvements to enable more walking and biking, a mix of housing types, and transportation investments (including public transit). Two SCAG subregions, including the Orange County Council of Governments, have prepared their own sub regional Sustainable Communities Strategies. The underlying land use, transportation, and socioeconomic data in the Orange County Council of Governments' sub regional Sustainable Communities Strategy has been incorporated into the regional Sustainable Communities Strategy prepared by SCAG.

5.4 BIOLOGICAL RESOURCES

The City of Placentia is almost completely urbanized and landscaped with mostly nonnative species. No known rare or endangered plant or animal species have been identified within the City. The community's most significant plant resources are its ornamentals. Ornamental landscaping is that type of landscaping whose primary purpose is to add visually pleasing plants to gardens and planted areas. The urban landscaping within Placentia provides habitat for smaller rodents and birds. The frequent disruptions caused by urban activities and the frequent cultivation of such plant life make these plant communities a less than an ideal habitat for wild animals.

5.5 ENERGY RESOURCES

Limited supplies and environmental concerns regarding conventional energy resources such as oil, electricity and natural gas require their conservation. Reductions in domestic oil production in the U.S. has resulted in increasing dependence on foreign imports.

Southern California Edison (Edison) supplies residential and commercial electricity for the City of Placentia. The Southern California Gas Company (The Gas Co.) supplies natural gas to Placentia. Natural gas is a finite resource and therefore supplies cannot be increased.

Given the area's warm climate, the most important alternative and renewable energy resource in Placentia is solar energy. This energy source has considerable potential and can be developed to substitute for oil, gas and other energy supplies. Solar energy's ability to substitute for fossil fuels can be an important tool in the battle against air pollution.

Solar radiation in the form of sunlight can be utilized for energy production in two ways. The first method, active solar systems, involves the use of mechanical devices to convert solar energy to heat or electricity. The second, passive solar systems, utilizes natural heating and cooling from the sun through proper orientation and building design. Placentia's geographic location and climate make it well suited for the utilization of solar power. Southern exposure in the winter and limited western exposure in the summer should be a factor in building design and placement. Streets that run east-west are more adaptable to solar energy practices than north/south streets. The ideal building orientation recommended for the Southern California coastal inland regions is a 35-degree variation to the southwest of the building's long axis. State Title 24 Energy Regulations establish energy performance building code requirements that the City is following and implementing.

5.6 SOILD WASTE AND SOURCE REDUCTION

The City contracts with Republic Waste Services of Southern California, LLC, a division of Republic Services, Inc (Republic) to provide solid waste collection and recycling services within the City. Through this contract, the City provides residential, commercial, and industrial refuse services. The refuse is collected and hauled to Republic's material recovery facility (MRF) in the City of Anaheim. Prior to being transported to the landfill, the waste is processed to separate recyclables from the waste stream. The majority of the solid waste generated in the City is disposed of at the Olinda Alpha Landfill in Brea. As landfill sites in California approach capacity, it is necessary to reduce the amount of solid waste to these sites.

The City of Placentia has adopted a Source Reduction and Recycling Element (SRRE) in response to Assembly Bill 939; the California Integrated Waste Management Act (AB 939). AB 939 requires all Cities to divert 25 percent of their waste stream from landfills by 1995 and 50 percent by the year 2000. The SRRE identifies how the City of Placentia intends to achieve these goals. Strategies to reduce waste include source reduction, recycling, composting, special waste provisions and education and public information. In accordance with AB 939, specific programs were implemented to reduce the amount of waste generated in Placentia by 25 percent in 1995 and 50 percent by 2000. In addition, the City has a purchasing policy that gives preferential credit for those vendors using or providing recycled material (10% minimum).

In 2012, Assembly Bill 341 (AB 341) was signed into law in California to help reduce greenhouse gas emissions and set a statewide goal to recycle, compost, or source reduce 75 percent of all solid waste generated in California by 2020. This legislation requires businesses and multi-family residential dwellings of five units or more, that generate four or more cubic yards of commercial solid waste per week, to implement a recycling program.

One of the five key strategies the State identified to meet the waste diversion goal of 75% is increased composting of organic materials, which make up approximately one-third of all waste disposed of in the state. In 2014, the State legislature enacted AB 1826, which requires jurisdictions to develop programs for businesses to begin recycling organic waste, including food waste. Multifamily residences with at least five units must also begin recycling organic waste, although food waste does not have to be included in the multi-family program. Other relevant new legislation includes:

- CALGreen Code 2016 - requires 65% of construction waste to be recycled.
- SB 1383 - establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025 and regulations to become effective by 2022.

As state regulations for waste diversion increase, Placentia should continue efforts to maximize recycling, composting, and source reduction to ensure continued compliance. Improving waste collection services to commercial businesses and multi-family dwelling units and increasing the community's knowledge of waste diversion practices are the primary ways the City plans to eliminate landfill waste.

Source Reduction & Recycling Programs

Placentia focuses on the “reduce, reuse, and recycle” model of waste management and encourages its residents and commercial tenants to do the same. Recycling focuses on retrieving goods that can be processed into new products. It is the

practice of recovering used materials from the waste stream and then incorporating those same materials into the manufacturing process.



The City has established a number of programs in partnership with Republic Services that promote recycling, composting, and waste reduction, all of which have contributed to the City's increasing diversion rate and decreasing disposal rate in recent years. These programs rely on public education through printed materials, community outreach, media and school programs. The following programs support source reduction and recycling:

Bulky Item & E-Waste Collection Services

The City provides up to three (3) free curbside bulky item and/or e-waste collections per calendar year for single and multi-family residents. Bulky items include furniture, refrigerators, stoves and water heaters. Businesses and/or commercial property owners may also request bulky-item and e-waste collection for an additional fee. Bulk waste and e-waste are taken to Republic's Regional Recycling Complex, where appliances commonly known as "white goods" are recovered from the waste stream.

Commercial Recycling Program

The City implemented a recycling program in accordance with AB 341, California's mandatory commercial recycling law in an effort to help the state reach its 75 percent diversion goal. This program provides commercial recycling services, outreach and education to eligible commercial business and multifamily units. All commercial and industrial waste is delivered to Republic's material recovery facility for select processing to help achieve maximum diversion.

Commercial Organics Recycling Program

In 2018, the City implemented a commercial organics recycling program in accordance with AB 1826, California's mandatory commercial organics recycling law. This program provides organic recycling services, outreach and education to inform customers how to recycle organic waste and monitoring to identify those not recycling and to notify them of the law and how to comply.

Household Hazardous Waste Collection

Placentia residents can dispose of their household hazardous waste items for free at a County of Orange (County) Household Hazardous Waste Collection Center. The County operates four collection centers. Household hazardous wastes Items that are accepted include: cleaning products, lawn and garden products, automotive products, flammable products, wood shop and painting supplies, pesticides, e-waste and medical sharps.

Residential Curbside Green Waste Collection Program

In 1995, the City implemented a green waste program in accordance with State mandated waste reduction and diversion requirements. In 2016, Over 5, 100 tons of residential waste was collected. Residential green waste is collected weekly from residences and delivered to the MRF in Anaheim, CA, where it is mulched and then transported to the landfill in Brea, CA for beneficial use as alternative daily cover.

Residential Curbside Recycling Program

In 1997, the City adopted a three-cart automated residential collection program. The program includes three carts; one each for commingled recyclable materials, yard waste and trash. Commingling recyclables makes it easy for residents to recycle. Recyclable materials are collected and processed at Republic's state-of-the-art materials recovery facility where maximum diversion is achieved

Recycle Placentia Teen Team

The City operates a volunteer program for local high school students to increase their knowledge of environmental sustainability in the community by actively participating in special events and educational programs.

Used Oil Recycling Program

The City provides its residents a free recycling service for their used engine, transmission and gear oil, plastic motor oil bottles, oil filters and oily rags from their homes. This household collection program is provided through the City's participation in CalRecycle's Used Oil Payment Program.

Outreach and Education

AB 341 & AB 182 Outreach

Letters and billing notes help keep qualified businesses and multi-family dwellings up to date on AB 341 & AB 1826 requirements.

Recycle Placentia

This is a newsletter aimed at educating and keeping residents informed and is distributed annually. It provides a collection schedules as well as helpful tips for reusing, reducing and recycling to help keep waste out of the landfill.

Eco Center Tours

Republic provides free tours of its Eco Center and single-sorting system to allow the community to see firsthand how recyclables are store and prepared for shipment so they can be turned into brand new items.

Educational Outreach

Republic conducts presentations at schools, libraries and local events to help keep the community engaged and informed. Republic uses a 1951 vintage garbage truck and a robot named MRFy (pronounced Mur-fee) to help engage and encourage the community to learn about recycling and sustainability.

Sharps Mail Back Program

Republic offers residents with sharps-mail back program to assist residents with the proper disposal of sharps.

Special Events

The City regularly participates in civic events to help keep environmental protection at the forefront. Every year the City hosts a Compost Giveaway to distribute composting materials and promote the

Websites

To help encourage participation, the City and Republic Services Inc. provide a host of educational information available on their websites www.placentia.org and www.republicservices.com.

5.7 AGRICULTURE PRODUCTION RESOURCES

Placentia was originally an agricultural and dairy community featuring row crops and citrus trees. Placentia developed rapidly during the 1960s and 1970s converting most agricultural acreage to urban uses. Currently, row crops (predominantly strawberries and oranges) do not exist in any significant quantity.

5.8 MINERAL RESOURCES

The State Division of Mines and Geology has identified mineral resource areas throughout the State. According to the geologic map of Orange County, Placentia does not contain any mineral resources as defined. The only mineral extraction within the City at the present time is petroleum. Oil extraction/pumping operations continue in marketable quantities throughout the city.

5.9 HISTORIC AND CULTURAL RESOURCES

This section provides an overview of Historic and Cultural resources located in the City of Placentia. Placentia has a rich and diverse heritage that is characterized by buildings, artifacts of historical significance and cultural traditions.

The Placentia Public Library maintains a history room dedicated to the preservation and display of materials relevant to the history of Placentia. The collection includes information regarding the cultural, geographic, agricultural, economic, social and political development of the City. Items preserved (some are digitized) in the history room include:

- Family memorabilia and records;
- High School Yearbooks;
- Artifacts;
- Newspapers and Clipping;
- Historical documents of how the City developed;
- Books and pamphlets;
- Periodicals;
- Government documents;
- Directories and telephone books;
- Manuscripts;
- Oral histories;
- Photographs and postcards; and
- Maps.

Historical Development of Placentia

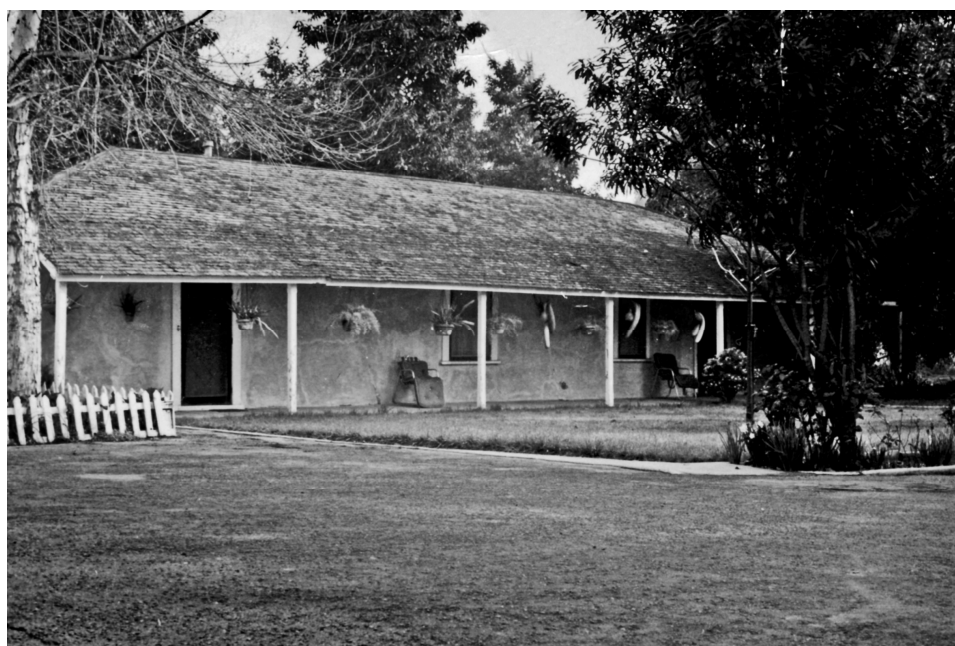
The following historical overview of Placentia is summarized from several historical accounts.⁹

⁹

- Virginia L. Carpenter. *Placentia, A Pleasant Place*. Santa Ana, CA: Friss-Pioneer Press, 1988.
- Jeannette Gardner and Lawrence de Graaf. *Early Placentia*. Charleston, S.C.: Arcadia Publishing, 2007.
- Jeanette Gardner and Marie Schmidt, *Placentia City History: A Brief History of Events*. City of Placentia, No Date. Pamphlet.

In the early 1760s, the Spanish began exploring what would later be known as California. Gaspar de Portola, a Spanish explorer, led a group of men on an expedition through California with detailed plans to develop the vast land. While traveling northward, some of Portola's men were impressed with the area, which was to become Orange County, and later settled there.

Juan Pacifico Ontiveros, a soldier who had been a member of the exploration party, received a grant of 35,970 acres of land from Mexican Territory Governor Juan B. Alvarado. Ontiveros named his new land Rancho San Juan Cajon de Santa Ana. Placentia and portions of the present-day cities of Brea, Fullerton, Anaheim, and Yorba Linda were part of the land grant. During the next two decades, the largely Spanish population increased as a few new settlers came to the area.



Daniel Kraemer, credited with being the first non-Spanish settler, arrived in 1865. Kraemer bought 3,900 acres of the Ontiveros ranch and moved his family from Illinois. Daniel Kraemer was a community leader who helped pave the way to make Placentia the city it is today. Kraemer Middle School, a park, and a major street are named after him.

After moving from Pittsburgh, Pennsylvania, William McFadden purchased 100 acres on the southwest corner of Placentia Avenue and Yorba Linda Boulevard. McFadden was a schoolteacher and later Superintendent of Los Angeles County schools. He was involved in community affairs and his wife, Sarah, is credited with naming the community of Placentia.

Charles Wagner arrived in Placentia with his brother John in 1871. Both raised sheep in the northern portion of Placentia and in Brea. He also grew walnuts and oranges. He had three sons whose houses remain in Placentia.

In about 1881, Albert S. Bradford came to California, following the gold rush fever. On the way to California, he met Mr. Halladay who persuaded Bradford to manage a large ranch in Santa Ana. In the 1890s, he came to Placentia and bought 20 acres of land, growing vegetables at first, and changed to growing oranges. One of his orange brands was Tesoro (Treasure) with a picture of the large ranch house he built in 1902 on the label of the orange crates. Bradford was active in the community, helping obtain and lay out its town. He served as Chamber of Commerce president from its beginning in 1924 until his death in 1933. Mr. Bradford was instrumental in organizing a committee to raise money in order to buy the necessary rights-of-way for the Santa Fe railroad. His home, which is located at 136 E. Palm Circle, is listed in the National Register of Historical Places.

The lack of water in Placentia was one of the principal reasons for its slow development. Prior to the 1870s, Placentia was an arid area without natural water sources. There was no water to develop residential, agriculture or industrial uses. Water ditches for agriculture began to be dug in the 1870s. A primitive irrigation system for agriculture began around 1910, after the railroad was brought in.

In 1893, the first post office was built, which legitimized Placentia as a community.

The Town



5-40

News of imminent railroad construction in 1910 resulted in fast commercial growth. As the population grew, citizens began to recognize the need for community services. By 1874, there were enough children to justify building a school. Daniel Kraemer donated land on Orangethorpe Avenue, and William McFadden built the schoolhouse. In 1898, the school was enlarged by the addition of a second story. A citizen's group formed the Placentia Improvement League to further the development with projects like pavement of streets and installation of streetlights.

The League arranged for utility companies to serve the community. The Placentia Domestic Water Company supplied water to inhabitants within a one-mile radius of the center of town. By 1912, the City was served by Southern Counties Gas Company, Pacific Telephone, and Edison Electric.

In 1910, Albert Bradford and Richard Melrose subdivided land near the new railroad station. The boundaries were Chapman Avenue, Crowther Avenue, Bradford Avenue and Melrose Street. These two men also laid out the original streets, in the first plat map.

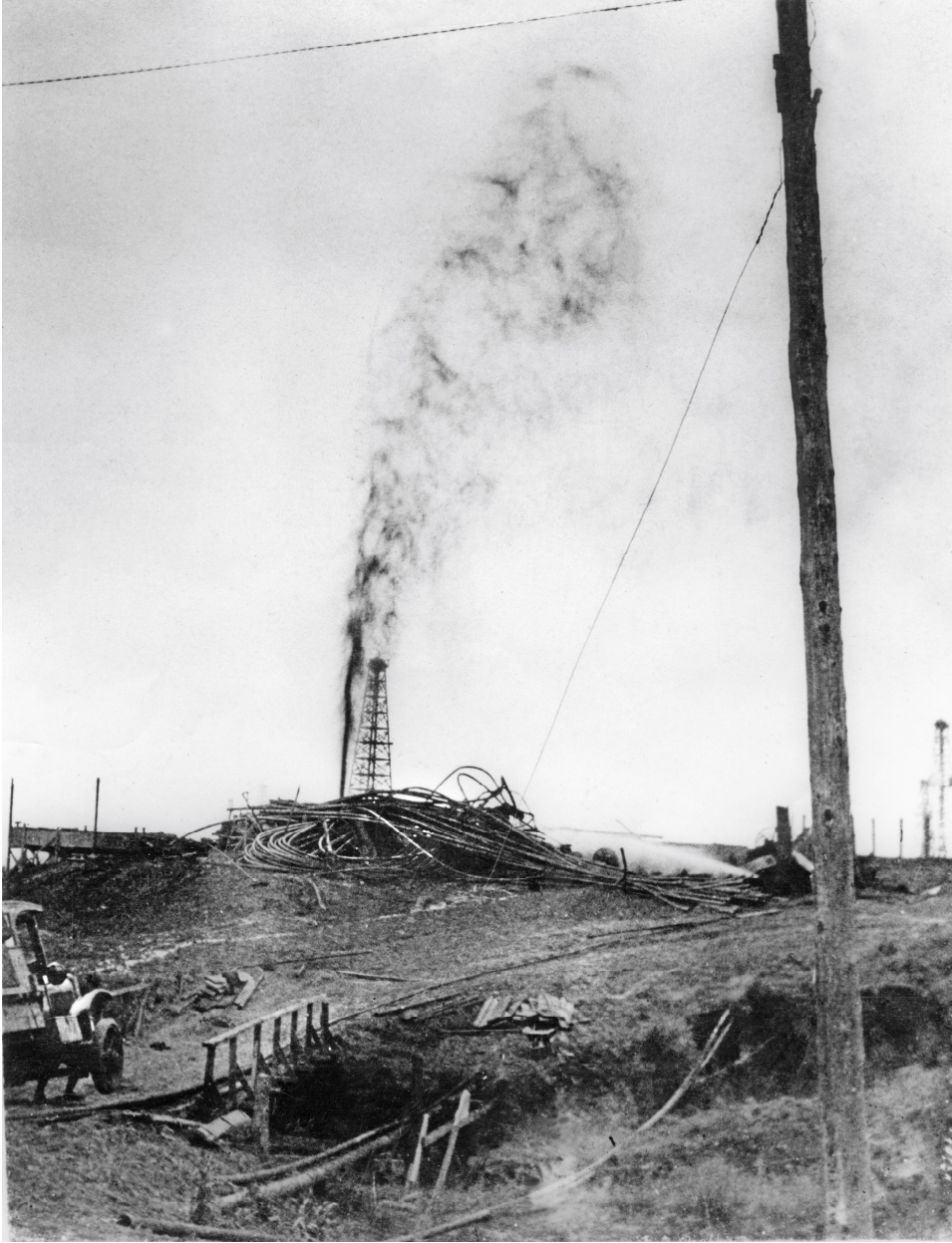
Main and Center Streets developed primarily as residential property, while businesses concentrated along Santa Fe Avenue abutting the railroad. The stores did not extend past Bradford Avenue or Melrose Street, but these few blocks became a thriving business district.

Economic Growth

Although early Spanish settlers called the area “peor que nada”, which means “worse than nothing,” Placentia proved to have very strong economic potential. In the late 1800s, irrigation water was in short supply and dry farming was practiced. The drought of 1864 devastated the cattle industry. Sheep raising, initially popular and prosperous, was later destroyed by a drought in 1877.

Richard Gilman is credited with establishing what would be known as the heart of the Orange County economy. He experimented with orange seedlings and later grew the Valencia orange variety. The Valencia orange became commercially popular and was grown throughout Southern California. Placentia growers were successful with Valencia oranges and they became the main cash crop for many of the farmers.

Oil was discovered in nearby Brea in the 1890s, after which wells were built in Placentia. In 1919, a huge gusher of oil rose out of a drill while CC Chapman was exploring for oil on his property. In addition to Chapman, Samuel Kraemer was also a large oil developer in the area. Oil derricks were erected throughout the City of Placentia. The oil supplies were among the most productive in the state. Oil wells in the city continue to produce marketable quantities of oil.



On December 2, 1926, Placentia was incorporated with 800 residents on 0.16 square miles, with Harry Easton becoming the first mayor, chosen by vote of the board trustees. Rapid growth began with the population doubling between 1920 and 1930, reaching 1,607. Nearly 17 miles of streets were paved in 1927, but most remained dirt. The new City hired its first Policeman in 1925.

The City had one hired police officer and one hired firefighter and in 1927, businessmen bought an 800-gallon fire truck. The rest of the police and fire staff were volunteers. The City Council succeeded in passing a bond in order to build a city hall and, in 1939, a small Spanish-style building was erected. It housed both the police and fire stations.

Placentia remained a small town surrounded by miles of citrus groves through World War II. In 1950, the population was 1,682. A decade later it had grown to 5,861, and suburban tracts were replacing orange groves. Recognizing the need for planning future directions, the City Council in 1966 called upon residents to attend the *Placentia Tomorrow* series of public forums and study groups. This program concluded that residents wanted to preserve a small-town atmosphere with some recreational and leisure time activities, but no large commercial businesses and minimal industrial ones. The city grew as a “bedroom” community into the 1970s.

Progress since the issuance of the *Placentia Tomorrow* report in 1967 has been dramatic. In 1968, voters gave overwhelming support to one of the few successful recreation bond issues in Orange County’s history.

The County of Orange selected Placentia as its Model City in 1971. In September of the same year, the National Sports Foundation awarded Placentia its coveted National Gold Merit Award for excellence in Parks.

On February 28, 1972, the National Municipal League of the *Saturday Evening Post* announced that Placentia was one of nine cities in the United States to win the coveted “All America City Award,” the first ever presented to a city in Orange County. The award is one of the highest forms of recognition for citizen involvement in a community.

In 1974, Edward and Angelina Backs donated a 6-acre parcel for the development of a Civic Center to replace the City Hall and library in the Old Town area of the City. It was completed in September 1974 and is located at the northeast corner of Chapman Avenue and Kraemer Boulevard. The center has a landscaped mall with three fountains and a bell tower and includes a police facility and library. The Civic Center’s architectural style reflects the early Spanish heritage of the Placentia area.

Historic Sites

The City of Placentia has many historic structures that serve as reminders of the City’s unique history. The following structures have been identified as historically significant:

Santa Fe District - Santa Fe Avenue between Bradford Avenue and Main Street



Santa Fe Avenue was the first commercial street in the townsite, stretching from a train depot (demolished in 1976) at Bradford Avenue to the two-story bank building at Main Street. To serve the growing area after the railroad was completed in 1910, there was a Chamber of Commerce, a grocery store, feed store, post office, a lumber yard, barber shop, blacksmith shop and livery stable, a reading and recreation room which grew into the library, a hardware store, a hotel and many other stores. In 1989, the area was named Placita Santa Fe.

Placentia Mutual Orange Association Packing House – California Register of Historic Resources, Point of Interest (P631) – 341 South Melrose Street

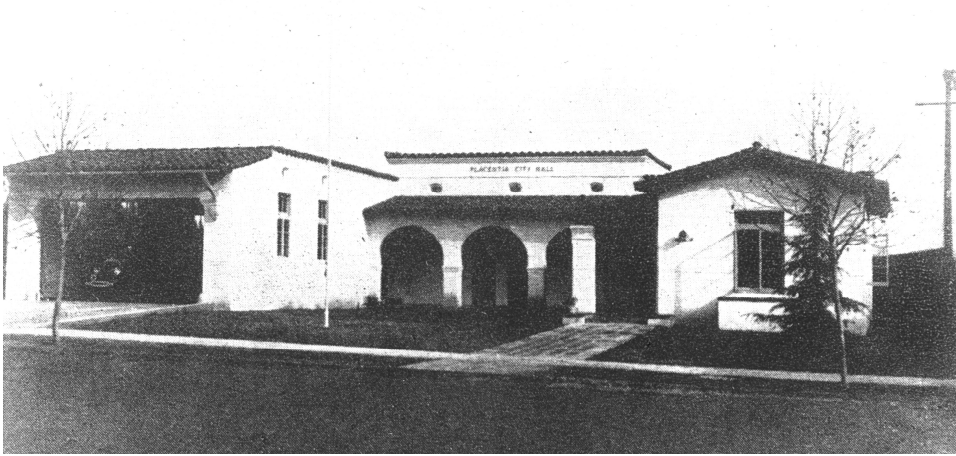


The Placentia Mutual Orange Association (PMOA) was organized October 12, 1910 with 33 members. John C. Tuffree served as the first president. At one time the PMOA claimed to ship more citrus in one year via the Santa Fe Railroad than any other California Sunkist affiliated house. The best-known label, which commanded a high price in the New York market, was a Shamrock. [California Historic Resources Registration Date: 5/31/1984]

Old Placentia Library District Building - 143 S. Bradford Avenue



The Edwin T. Powell Building, at the corner of Bradford Avenue and Center, is the former library building constructed by the Placentia Library District in 1926 at a cost of \$30,000. The architect was Carlton Winslow who had gained worldwide recognition for his design of the Los Angeles City Library. This building is considered one of the most interesting small structures in the town and served the citizens until the new library was constructed in 1974. Currently, the senior center is housed in the City-owned building.

Old City Hall - 120 S. Bradford Avenue (demolished)

The City Hall Building, in use until a new Civic Center was dedicated in 1974, was built with federal assistance in the 1930s and replaced a building on Bradford Avenue, just north of Santa Fe. The City retains ownership to the portion of the site containing the fire station.

Kraemer Memorial Park - 201 N. Bradford Avenue

Mr. and Mrs. Edward Backs donated the site for Kraemer Park to the City of Placentia in 1954. Angeline Backs asked that the public park be named in honor of her father, Samuel Kraemer and her mother, Angelina Yorba Kraemer. A family tree is outlined in three brass tablets, located in a memorial near the entrance to the Backs Building facing Bradford Avenue. Trees planted throughout the park were donated and dedicated to other City pioneers.

Veteran's Memorial Fountain - Chapman Avenue and Walnut Street

The Veteran's Memorial Fountain was donated to the City by Edward and Angeline Backs. Constructed at a cost of \$250,000, it is dedicated to our nation's veterans. The sculptor was John Edward Svenson who cast the dolphins in Norway. The dolphins have since been removed and are being stored. Arthur Barton, landscape architect for Kraemer Park, designed the courtyard that surrounds the fountain.

Water Tower - Chapman Avenue and Main Street

The 50,000-gallon water tower, which today bears the markings of Placentia's All America City Award, is currently empty and stands as a historic landmark. It was constructed in 1935, replacing earlier towers built to serve the original town site.

Valencia High School - 500 N. Bradford Avenue

The first high school in Placentia was Valencia and it was rebuilt after a fire to its present form in 1935 with some later additions. It is a good example of Moderne Style sometimes called Art Deco. Bradford Elementary School built in 1912 as a replacement for the original Placentia school on Chapman and Placentia Avenues.

One structure from the 1912 school remains behind the auditorium, which was built in the 1936 under the WPA, the Works Progress Administration.

Bradford House – National Register (N676) – 136 Palm Circle

The Albert Sumner Bradford home in Bradford Park, was built in 1902 in the Colonial Revival style popular at the time. It was located on the Tesoro Rancho, which is now the site of the Town Center Shopping Mall. The original Bradford citrus nursery was on this site and provided many seedlings for the burgeoning California Valencia Orange Industry.

[National Register Registration Date: 10/3/1978]

Nenno House – 503 Palm Drive



The Nenno home was built in 1907-08 by John and Antoinette Nenno, who came to Placentia in 1892. John was one of several citrus fumigators, and the house was the site of a small citrus ranch. The house has been recently restored as an office building with a similar style to the freestanding office building on the north end of the property.

George Key Home – National Register (N351) – 625 W. Bastanchury Avenue

The George Key Home was built in 1898 and is an excellent example of ranch homes of that period, once found throughout the area. In 1983, the County of Orange purchased the home and its contents to be operated as a museum. The site contains a collection of the items that were used by ranchers when Placentia was the center of the Valencia Orange industry. It contains the last grove of citrus trees in Placentia. The museum is currently closed.

[National Register Registration Date: 4/21/1975]

Tri-City Park – 2301 N. Kraemer Boulevard

The Tri-City Park is bounded by Fullerton, Brea and Placentia, and these cities have joined together to develop the lake and its park. It was originally a storage reservoir on the ranch land of Colonel J.K. Tuffree, who had surveyed ranch lands owned by Don Able Stearns. Tuffree received 600 acres of land in Placentia as a wedding gift from his father-in-law, C.B. Polhemus. The reservoir held water brought by a gravity canal and flume from the Santa Ana River. Constructed from 1876 to 1878, the canal was operated by the Anaheim Union Water Company, which delivered water to nearby ranches until the 1960s. As of 2013, the County of Orange owns and maintains this park. The park continues to serve as a regional park facility.

Charles Wagner, Jr. House - 902 E. Yorba Linda Boulevard

The Wagner home was built in 1920 by one of three Wagner brothers. The home of each Wagner brother still stands today. All three were citrus ranchers, and this house is one of several elegant former ranch homes. Its last use was as a wedding planner location.

Site of the original Macadamia Tetraphylla Planted in California - California Register of Historical Resources, Point of Interest (P589)

Placentia, California

[National Register Registration Date: 3/1/1982]

The Historical Committee

The City supports an active local Historical Committee that consists of members who are appointed by the City Council. Committee members typically are familiar with historic preservation principles and practices and have gained knowledge of Placentia history from either long-term residence and/or study and research. Monthly meetings of the Committee cover the following duties:

- Advise City Council on matters related to historical structures and/or sites located in Placentia.
- Nominate buildings, sites or districts within the City for designation as local landmarks.
- Review items submitted by City Council, staff or the general public and recommend appropriate course of action.
- Continues to administer the historic plaque program.
- Coordinate, plan, and participate in community events and programs to increase public awareness and education on historic preservation.

5.10 GOALS AND POLICIES

Goals and policies that preserve natural resources, reduce sources of global warming are found in the Mobility, Land Use, Open Space and Health, Wellness and Environmental Justice Elements of this General Plan.

Water Resources

GOAL CON - 1 *Conserve groundwater and imported water resources.*

- | | |
|------------------|--|
| Policy CON - 1.1 | Achieve statewide mandates on water reduction by working with local water purveyors Golden State Water Company, Orange County Water District and the Yorba Linda Water District to design and implement water conservation measures. |
| Policy CON - 1.2 | Promote the use of native trees in landscaping to conserve water resources. And seek out opportunities to eliminate turf grass in public landscaping in favor of low water usage plant materials. |
| Policy CON - 1.3 | Protect ground water resources from sources of pollution by monitoring with a robust inspection program for existing and potential gross polluters. This uses the NPDES program requirements. |
| Policy CON - 1.4 | Conserve imported water by requiring new development to utilize water conservation techniques, water conserving appliances, and drought- resistant landscaping. |
| Policy CON - 1.5 | Support expansion of public education programs pertaining to reclaimed water production and use wherever possible and when economically feasible. |
| Policy CON - 1.6 | Reduce the amounts of hazardous materials (i.e. used oil, pesticides, etc.) entering storm drains through public education efforts. |
| Policy CON - 1.7 | Require all private development to adhere to the City's Model Water Efficiency Landscaping Ordinance (MWEL0). |
| Policy CON - 1.8 | Periodically update the MWEL0 ordinance as new best practices become avail. |

Air Quality

GOAL CON - 2 *Reduce air pollution through proper land use and transportation planning.*

- Policy CON - 2.1 Cooperate with the South Coast Air Quality Management District and the Southern California Association of Governments in their effort to implement provisions of the region's current Air Quality Management Plan.
- Policy CON - 2.2 Design safe and efficient vehicular access to commercial land uses from arterial streets to ensure efficient vehicular ingress and egress.
- Policy CON - 2.3 Locate multiple family developments close to commercial areas to encourage pedestrian and cycling activity rather than vehicular travel.
- Policy CON - 2.4 Develop neighborhood parks near concentrations of residents to encourage walking to parks. Use Quimby in-lieu fees to fund new and expanded park space.
- Policy CON - 2.5 Implement through design requirements, the Complete Streets tenets. Encourage the design of commercial areas to foster pedestrian circulation.
- Policy CON - 2.6 Cooperate and participate in regional air quality management plans, programs, and enforcement measures.
- Policy CON - 2.7 Implement the required components of the Congestion Management Plan and continue to work with Orange County Transportation Authority on annual updates to the CMP.
- Policy CON - 2.8 Encourage and expand the use of electric charging station for EV vehicles. This would be in private and public development.
- Policy CON - 2.9 Adopt a Climate Action Plan by December 2022.
- Policy CON - 2.10 Utilize California Air Resources Board (CARB) recommendations to evaluate the siting of dry cleaners, chrome platers, large gas stations, freeways, and other high pollutant sources near residences, health care facilities, schools, and other sensitive land uses.
- Policy CON - 2.11 Encourage alternative modes of travel to work and school by maximizing transit service, purchasing alternative fuel vehicles, completing all sidewalks, ride share, bikeshare programs (and scooter share programs) and creating and expanding a network of multiuse trails and bicycle paths. Focus on connecting Placentia and Fullerton along bikeways, using the Placentia Metrolink station as a catalyst.
- Policy CON - 2.12 Encourage mixed use development as a way to preserve natural resources.

GOAL CON - 3 *Improve air quality by reducing the amount of vehicular emissions in Placentia.*

- Policy CON - 3.1 Utilize incentives, regulations and/or Transportation Demand Management (TDM) programs in cooperation with other jurisdictions in the South Coast Air Basin to reduce and eliminate vehicle trips.
- Policy CON - 3.2 As the Placentia Metrolink Station is developed and more widely used, investigate use of ride share and van pool programs near the station. Encourage the use of the train for commuting into Los Angeles County and other job centers.
- Policy CON - 3.3 Promote and establish modified work schedules for private development and employers which reduce peak period auto travel. This applies to the City government services but supports private industry efforts as well.
- Policy CON - 3.4 Cooperate in and encourage efforts to encourage efforts to promote the Metrolink Station by residents and visitors to Placentia. Expand bus, railroad and other forms of transit serving the City and the urbanized portions of Orange County.
- Policy CON - 3.5 Expand the use of alternative fueled vehicles for city services.
- Policy CON - 3.6 Encourage non-motorized transportation through the provision and expansion of bicycle and pedestrian pathways.
- Policy CON - 3.7 Encourage employer rideshare and transit incentives programs by local businesses.
- Policy CON - 3.8 Manage parking supply to discourage auto use, while ensuring that economic development goals are not sacrificed.
- Policy CON - 3.9 Encourage businesses to alter truck delivery routes and local delivery schedules to lessor traveled roads during peak hours, or switch to off-peak- delivery hours.
- Policy CON - 3.10 Implement Citywide traffic flow improvements outlined in the Mobility Element.
- Policy CON - 3.11 Support state and federal legislation that would improve vehicle/transportation technology and cleaner fuels.
- Policy CON - 3.12 Support efforts to balance jobs and housing to provide housing options and job opportunities to reduce commuting.
- Policy CON - 3.13 Encourage a mix of land uses located together to reduce vehicle trips and miles traveled.
- Policy CON - 3.14 Participate in and create incentive and rebate programs for alternative fuel vehicles.
- Policy CON - 3.15 Educate residents and commercial business owner on any rebate programs for solar heating and cooling in both residential and commercial structures.

- Policy CON - 3.16 Require new developments to install electric vehicle charging stations.
- Policy CON - 3.17 Install electric vehicle charging stations at City owned properties.
- Policy CON - 3.18 Implement a bicycle sharing program at the new transit station.

Particulate Matter Emissions¹⁰

GOAL CON - 4 *Reduce particulate emissions to the greatest extent feasible.*

- Policy CON - 4.1 Continue policies to minimize particulate matter emissions during road and building construction and demolition.
- Policy CON - 4.2 Encourage the use of pavement recycling program recycle construction debris for City roadway improvement projects.

Energy Consumption

GOAL CON - 5 *Reduce emissions through reduced energy consumption and promote sustainable and renewable energy sources.*

- Policy CON - 5.1 Promote energy conservation in all sectors of the City including residential, commercial, and industrial.
- Policy CON - 5.2 Promote local recycling of wastes and the use of recycled materials in both private and public projects and uses.
- Policy CON - 5.3 Encourage solar swimming pool heater systems and residential and commercial water heaters and other energy using appliances.

GOAL CON - 6 *Conserve energy resources through the use of available technology such as solar and other conservation practices.*

- Policy CON - 6.1 Encourage innovative site planning and building designs that minimize energy consumption by taking advantage of sun/shade patterns, prevailing winds, landscaping, and building materials.
- Policy CON - 6.2 Encourage new development and existing structures to install energy efficient equipment.

¹⁰ Particulate Matter (PM) are components of particulate matter (PM) including finely divided solids or liquids such as dust, fly ash, soot, smoke, aerosols, fumes, mists and condensing vapors that can be suspended in the air for extended periods of time and are known to cause respiratory problems.

Biological Resources

GOAL CON - 7 *Preserve the few remaining native and established plant and animal species.*

- Policy CON - 7.1 Develop an urban forest management plan to promote the consistent use of trees, thereby helping to reducing air quality impacts.
- Policy CON - 7.2 Provide for thorough environmental review prior to project approval to ensure that important biological resources will not be reduced or eliminated. Physical site inspection of all project sites should be occurred prior to any city approvals, no matter what level of environmental review is required by CEQA.
- Policy CON - 7.3 Utilize the urban forest management plan to provide for the consistent use of street trees along all sidewalks and property frontages. Continue planting trees along all roadways to help filter air pollutants, clean the air, and provide other health benefits to the community. Replace trees promptly when damaged or diseased. Consider increasing the number of street trees on both commercial and residential streets.

Solid Waste

GOAL CON - 8 *Reduce solid waste produced in the City.*

- Policy CON - 8.1 Continue implementing the Source Reduction and Recycling Element as required by State legislation.
- Policy CON - 8.2 Continue to comply with the requirements mandated by the Integrated Waste Management Act and other related legislation (AB 939, AB 341, AB 1826,) in order to reduce the amount of solid waste and organic waste ending up in local landfills.
- Policy CON - 8.3 Maximize public awareness of all source reduction and recycling programs, including opportunities for communication feedback and educational outreach.
- Policy CON - 8.4 Maximize integration of all source reduction programs.
- Policy CON - 8.5 Encourage composting as an alternative to disposal for organic wastes.
- Policy CON - 8.6 Ensure that new development and reuse projects provide adequate space for recycling and organics collection activities to support state waste reduction goals.
- Policy CON - 8.7 Continue to provide public information regarding residential collection of household hazardous wastes including paint containers, electronics, household chemicals, motor oils, and

pesticides, and promote development of facilities that collect these materials.

- Policy CON - 8.8 Coordinate with the County and surrounding jurisdictions to dispose of special waste including tires, construction/ demolition debris, medical waste, asbestos, household hazardous waste, and computer technology waste.

Storm Water and Urban Runoff Management

GOAL CON - 9 *Adequate conveyance of storm water and reduction of the presence of pollutants consistent with regional, state and federal standards.*

- Policy CON - 9.1 Ensure the proper maintenance of drainage facilities to ensure the absence of debris and other material that may impact storm water flow and water quality.
- Policy CON - 9.2 Ensure construction and grading activities utilize appropriate storm water mitigation techniques.
- Policy CON - 9.3 Properly monitor all project-related storm water mitigation techniques to ensure effectiveness.
- Policy CON - 9.4 Ensure compliance with local, regional, state and federal regulations related to storm water management.
-

GOAL CON - 10 *Minimize short and long-term impacts of local water quality.*

- Policy CON - 10.1 Provide periodic review of local policies and procedures related to storm water and urban runoff management to ensure they are consistent with regional, state and federal water quality.
- Policy CON - 10.2 Ensure the limited disturbance of natural water bodies and drainage systems through the conservation of natural areas, protection of slopes and channels.
- Policy CON - 10.3 Minimize the impacts of storm water and urban runoff on the biological integrity of natural drainage systems and water bodies.
- Policy CON - 10.4 Minimize changes in hydrology and pollutant loading and require incorporation of structural and non-structural controls to mitigate any projected increase in pollutant loads and flows.
- Policy CON - 10.5 Ensure that post-development runoff rates and velocities do not have an adverse impact on downstream erosion and stream habitat.
- Policy CON - 10.6 Ensure the minimization of the quantity of storm water directed to impermeable surfaces and maximize the

percentage of permeable surfaces to facilitate increase percolation of storm water into the ground.

- Policy CON - 10.7 Ensure the preservation of riparian habitat and establish limits on the clearing of natural vegetation from project sites.
- Policy CON - 10.8 Encourage the use of biofiltration swales, watershed-scale retrofit, etc. where such measures are technically and economically feasible.
- Policy CON - 10.9 Establish the provision of appropriate permanent measures to reduce storm water pollutant loads in storm water from development sites.
- Policy CON - 10.10 Establish and monitor guidelines for areas particularly susceptible to erosion and sediment loss.

Historical and Cultural Resources

GOAL CON - 11 *Preserve Placentia's Historic, Archaeologic and Paleontologic Resources.*

- Policy CON - 11.1 Have a local register adopted by City Council Resolution.
- Policy CON - 11.2 Adopt a local preservation ordinance to guide policy and procedure for preserving the historical resources in the City.
- Policy CON - 11.3 Update the City's inventory of historic resources every 10 years.
- Policy CON - 11.4 Periodically update the adopted local register of historic places, which would include local cultural resources, California and National Register properties, points of interest, and survey areas of the City that are over 50 years old and that may be considered historic resources.
- Policy CON - 11.5 Protect and maintain the historical integrity of the Bradford House at 136 East Palm.
- Policy CON - 11.6 Prior to development in previously undeveloped areas, require strict adherence to the CEQA guidelines for environmental documentation and mitigation measures where development will affect archaeological or paleontological resources.
- Policy CON - 11.7 Protect and enhance buildings that are deemed historic by adhering to the Historical Resources Ordinance that establishes a local register and outlines regulations for demolition, rehabilitation, additions, restoration, and conservation.
- Policy CON - 11.8 Promote the use of the Mills Act as incentive to preserving both residential and commercial historic buildings.

- Policy CON - 11.9 Promote the City's historic resources with programs celebrating the historic buildings such as annual historic preservation awards or a historic plaque program.
- Policy CON - 11.10 Consider designation of conservation areas or historic districts to protect the existing historic character of neighborhoods.
- Policy CON - 11.11 Continue to support the historic plaque program citywide and consider an historic street sign program, marking historic landmarks in the public right of way.
- Policy CON - 11.12 Consider adaptive re-use to further the preservation of historic resources.
- Policy CON - 11.13 Continue to heighten community awareness of Placentia's history and the City's physical development and educate the public to the significance of historic area, sites, and structures, including the social events associated with them.
- Policy CON - 11.14 Continue to encourage pride in the quality and character of historic areas.
- Policy CON - 11.15 Continue to recognize the fragile nature of historic resources and areas, and work to ensure the harmonious appearance of each historic area. Address the transitional areas between residential and non-residential areas.
- Policy CON - 11.16 Strive to prevent the demolition of structures listed under the local register of historic places.
- Policy CON - 11.17 Continue to offer historic preservation tools such as the Mills Act or Old Town Façade Improvement Program.
- Policy CON - 11.18 Recognize and work with other preservation organizations, building relationships and sharing information that could assist with further preservation efforts.
- Policy CON - 11.19 Enhance and formalize the oral history program to capture the stories of Placentia residents, thus, further preserving the history of the city by remembered and firsthand account.
- Policy CON - 11.20 Explore and evaluate different approaches to protect and enhance historic resources throughout the community.