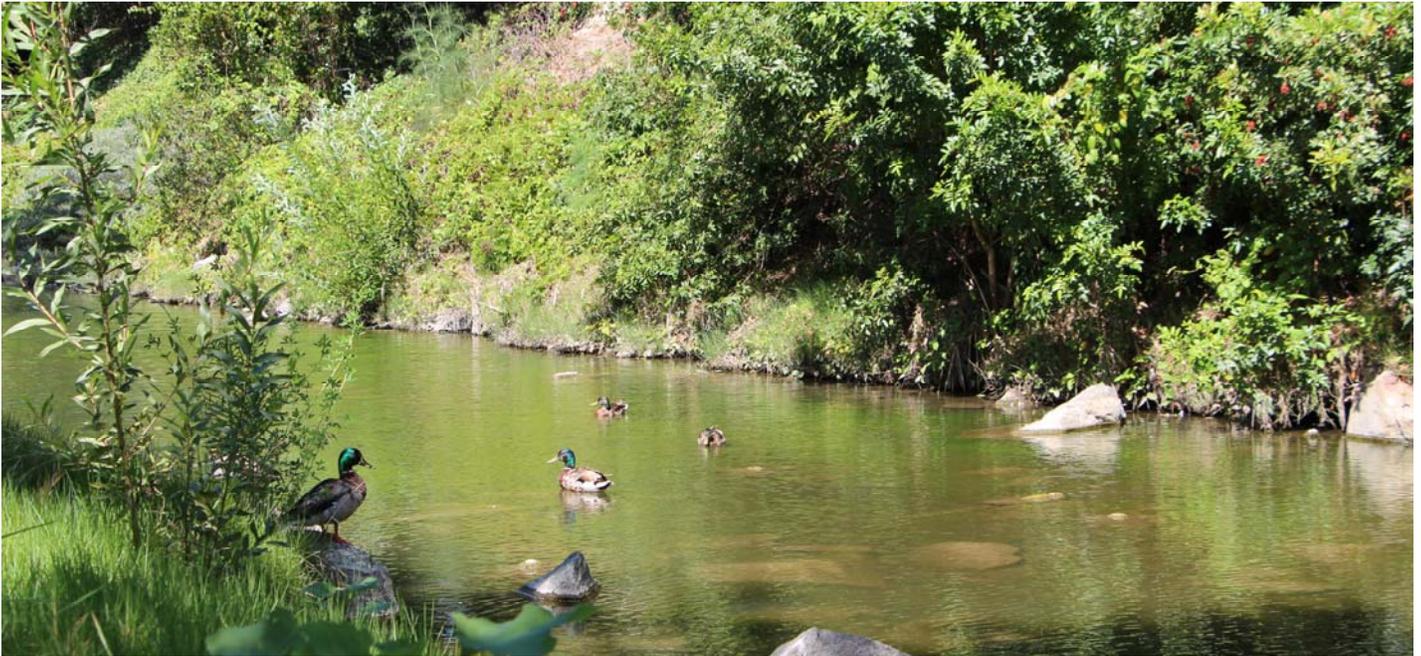


CONSERVATION ELEMENT



INTRODUCTION

The City of Laguna Woods is committed to the preservation and sustainable management of its many natural resources. California Government Code Section 65300 requires that each city adopt a General Plan to guide the long-term physical development of the city. The General Plan reflects the community's intentions about land use and its relationship to pedestrian and vehicular circulation, housing, conservation, open space, noise, and safety. This element identifies priority conservation issues in Laguna Woods and sets forth long-range city policies and programs to achieve balance between the needs of the community and environmental stewardship.

PURPOSE AND SCOPE

State law requires that General Plans include a Conservation Element, as follows:

Government Code Section 65302(d): [The General Plan must include] a conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies, which have developed, served, controlled or conserved water for any purpose for the county or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or county.

CONSERVATION ELEMENT

In addition to state-mandated content, the Conservation Element addresses emergent issues and existing conditions in order to form a comprehensive approach to resource conservation.

This element presents existing conditions relative to natural resource conservation within Laguna Woods and is organized to address the following eight priority issues:

- Air resources
- Biological resources
- Cultural resources
- Energy resources
- Land resources
- Water resources
- Greenhouse gas emissions
- Waste and recycling

Goals, Policy Objectives, and Implementation Actions

This element is organized to be consistent with the other elements of the Laguna Woods General Plan. Goals, policy objectives, and implementation actions are the essence of the element, providing declarative statements setting forth the City's approach to each priority issue.

Goals: General statements of desired community outcomes.

Policy Objectives: Specific commitments to support decisions and actions consistent with a stated goal. Policy objectives provide guidance to the City Council, City advisory committees, and City staff when reviewing development applications and making other decisions that affect future growth, conservation, and development.

Implementation Actions: Recommended actions to achieve goals and policy objectives.

Certain implementation actions included in this element are drawn from or generally based on the City's Climate Adaptation Plan, thereby furthering the City's commitment to prepare for a future with evolving and potentially varying climate conditions.

Goals, policy objectives, and implementation actions are presented following the definition of each priority issue in this element.

Relationship to Other General Plan Elements

Accomplishing the goals and policy objectives of the Conservation Element requires coordination with other related elements of the General Plan. For example, implications of conservation policies and programs on the Land Use Element include identification of areas that contain natural and cultural resources. Recommended mobile source emission reduction actions in the Conservation Element impact the Circulation Element. In turn, the Circulation Element may provide support for air quality-related Conservation Element policies. Similarly, Open Space Element policies intended to maintain existing open space support Conservation Element policies that seek similar outcomes.

EXISTING RELATED PLANS, POLICIES, AND ORDINANCES

CLIMATE ADAPTATION PLAN

The City's Climate Adaptation Plan establishes an approach for the City to prepare for a future with evolving and potentially varying climate conditions. The Climate Adaptation Plan identifies local vulnerabilities to climate change impacts (e.g., increased temperatures, decreased precipitation, and strained water supplies) and outlines a strategy to increase resilience to climate change-related hazards, increase resource independence, and sustain and advance climate adaptation efforts. At the time of its initial adoption in late 2014, the Climate Adaptation Plan was the first non-coastal, stand-alone, municipal climate adaptation plan in California. Conservation Element goals, policy objectives, and implementation actions support and are consistent with the Climate Adaptation Plan, particularly with respect to the use and management of energy- and water-related resources.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM LOCAL IMPLEMENTATION PLAN

The City's Local Implementation Plan is the principal policy and guidance document for the City's stormwater/water quality programs. The Local Implementation Plan is prepared and maintained in accordance with applicable National Pollutant Discharge Elimination System (NPDES) permits regulating stormwater and waste discharges to the municipal separate storm sewer system (MS4). Conservation Element goals, policy objectives, and implementation actions related to water resources support and are consistent with the Local Implementation Plan.

SOURCE REDUCTION AND RECYCLING ELEMENT

The City's Source Reduction and Recycling Element demonstrates how the City will achieve and maintain compliance with waste diversion goals established by the State of California. The Source Reduction and Recycling Element fulfills requirements established by the California Integrated Waste Management Act (Assembly Bill 939, Sher, Chapter 1095, Statutes of 1989 as amended). Conservation Element goals, policy objectives, and implementation actions related to waste and recycling support and are consistent with the Source Reduction and Recycling Element.

LAGUNA WOODS MUNICIPAL CODE

Numerous provisions of the Laguna Woods Municipal Code relate to conservation, including:

- **Water Quality (Chapter 4.14):** Reduces pollutants in stormwater and non-stormwater discharges flowing to receiving waters to the maximum extent practicable by 1) prohibiting illegal discharges and illicit connections, 2) requiring implementation of best management practices, and 3) establishing development and significant redevelopment standards.

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- **Construction & Demolition Materials Management (Chapter 4.24):** Increases the amount of construction and demolition waste diverted from landfills by requiring minimum levels of reuse or recycling of waste generated by certain types of projects.
- **Tree Maintenance & Removal Standards (Chapter 4.26):** Promotes urban forestry and the appropriate care and maintenance of trees by 1) establishing standards to protect trees from damage, 2) requiring replacement of certain significant trees when removed, and 3) recognizing trees with historical, arboricultural, or other significance.
- **Water Efficient Landscapes (Chapter 4.28):** Encourages efficient and conservation-oriented use of water in new and rehabilitated landscapes by limiting the amount of water able to be applied and requiring compliance with El Toro Water District regulations.
- **California Building Code (Chapters 10.08 and 10.24):** Protects public health, safety, and welfare by ensuring that buildings and other structures are constructed in accordance with state standards and local best practices. Recent iterations of the California Building Code have increasingly emphasized energy and water conservation, particularly through the adoption of the California Green Building Standards Code (CALGreen Code), which contains both prescriptive and performance-based sustainability standards, as well as requirements related to the landfill diversion of certain construction and demolition waste.

OTHER EXISTING CONDITIONS

CONSERVATION AGENCIES AND ORGANIZATIONS

A variety of agencies and organizations—both public and private—assist the City in fulfilling its natural resource conservation responsibilities. In addition to the City’s organization, the Coastal Greenbelt Authority, El Toro Water District, and OC Watersheds are among the most involved with the priority issues identified in this element. Additionally, the City recognizes that numerous other agencies and organizations play vital and appreciable roles.

City Departments

Various City departments oversee building inspection, planning, stormwater/water quality, climate change, and waste and recycling operations, including the City’s contracts with solid and household hazardous waste disposal services. City departments also coordinate with the Coastal Greenbelt Authority, El Toro Water District, OC Watersheds, and other governmental and non-governmental agencies and organizations with natural resource-related responsibilities.

Coastal Greenbelt Authority

The Coastal Greenbelt Authority was initially established as an oversight body for the Laguna Coast Wilderness Park. Subsequently, its oversight was expanded to include the adjacent Aliso and Wood Canyons Wilderness Park. As the owner of Woods End Wilderness Preserve, which is leased to the County of Orange for management as a part of the Laguna Coast Wilderness Park, the City holds a

CONSERVATION ELEMENT

voting seat on the Coastal Greenbelt Authority. The Coastal Greenbelt Authority’s responsibilities include oversight of governing documents that address park operations and development, habitat preservation, wildlife protection, and environmental stewardship.

El Toro Water District

The El Toro Water District provides water and wastewater services in Laguna Woods and several surrounding communities, including portions of Aliso Viejo, Laguna Hills, Lake Forest, and Mission Viejo. Laguna Woods is the only community served exclusively by the El Toro Water District and constitutes approximately 35% of its overall service area. California Water Code sections 10610–10657 require the El Toro Water District and other water service providers reaching a minimum service threshold to publish an urban water management plan once every five years.

OC Watersheds

OC Watersheds is a division of the County of Orange’s Public Works Department that acts as the “Principal Permittee” for purposes of implementation of National Pollutant Discharge Elimination System (NPDES) permits. As the Principal Permittee, OC Watersheds is responsible for a variety of regulatory compliance matters, as well as the development of model best management practices, coordination of countywide public education efforts, and sampling, laboratory analysis, and other water quality monitoring activities. The City also contracts with OC Watersheds to provide water pollution-related incident response, enforcement, and technical assistance.

PRIORITY ISSUES

The City is committed to establishing a comprehensive, long-term vision for progressive public safety and environmental improvement programs within Laguna Woods. Climate change, including adaptation and greenhouse gas reduction, are core components of that vision. Many of the priority issues contained in this Conservation Element are interrelated in terms of climate change. The most significant interrelations are identified in each priority issue’s implementation actions.

AIR RESOURCES

Laguna Woods is located in the South Coast Air Basin, which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County. Air quality in the South Coast Air Basin is affected by temperature, precipitation patterns, and other climatic factors, along with levels of pollutants emitted from stationary and mobile sources.

Air pollutants can have adverse health impacts and lead to the deterioration and harm of plants, wildlife, and personal property. Sensitive population groups include older adults, children, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Actual health impacts vary based on the toxicity and concentration of pollutants, as well as the level of exposure.

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Residential areas are considered to be “sensitive receptors” to air pollution because individuals (including older adults) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Golf courses and other recreational areas are considered to be moderately sensitive to air pollution. Although exposure periods are generally limited, exercise places a high demand on respiratory functions, which can be impaired by air pollution.

Criteria air pollutants are regulated by federal and state laws due to known adverse health effects such as asthma, lung disease, and cardiovascular disease. Ozone and coarse fine particulate matter (PM₁₀/PM_{2.5}) are the most pressing pollutants affecting Laguna Woods due to high concentrations in excess of state ozone, PM₁₀, and PM_{2.5} standards and federal ozone and PM_{2.5} standards.

The urban heat island effect is a phenomenon in which temperatures in the local climate increase due to certain aspects of the built environment that retain or emit heat to a greater extent than would ordinarily exist in lesser developed areas (e.g., large areas of asphalt and impervious surfaces). As the demand for electricity to support personal cooling rises, power plant production often increases, resulting in greater air pollutant and greenhouse gas emissions. The urban heat island effect may also increase the formation and presence of ground-level ozone.

The General Plan Safety Element identifies air quality as a potential hazard to public health, and discusses the importance of individual emergency preparedness, beginning on page S-21.

Goal CO-1. Improve air quality.

Policy Objectives and Implementation Actions

CO-1.1. *Adopt and enforce regulations promoting air resource goals.*

A. Adopt, review, update, and enforce regulations including, but not limited to:

- Regulations pertaining to the protection of sensitive receptors, fugitive dust control near sensitive receptors, and the location of new sensitive receptors away from primary pollutant emission sources.
- Regulations pertaining to new and significant redevelopment project requirements for the accommodation and promotion of mobility alternatives to fossil fueled vehicles.
- Regulations pertaining to mitigation of the urban heat island effect.

CO-1.2. *Implement and support programs that reduce mobile source emissions.*

- A. Collaborate with the Orange County Transportation Authority and other demand-responsive mass transportation service providers to improve services and increase ridership.
- B. Construct and maintain a multi-modal trail system that facilitates movement throughout the city by pedestrians, cyclists, golf carts, and zero and low emission forms of transportation.
- C. Synchronize traffic signals, both locally and regionally, to improve the flow of vehicular traffic.

See also “Greenhouse Gas Emissions” priority issue for related considerations (page CO-18).

CONSERVATION ELEMENT

BIOLOGICAL RESOURCES

Though Laguna Woods is predominantly urbanized, several open space areas remain that provide habitat for wildlife and vegetative biological resources (see Figure CO-1). Certain urbanized areas, including landscaped common areas within private residential communities, also provide habitat.

Significant biological resource areas include:

- The 178-acre Laguna Laurel property, which the City annexed from the County of Orange in 2008. Laguna Laurel is owned by the Irvine Company, and is subject to an irrevocable open space easement that was granted to The Nature Conservancy in 2001. As a result of past disturbances, including widespread cattle grazing and cultivation, Laguna Laurel primarily supports nonnative annual grassland; however, small patches of coastal sage scrub, native perennial grassland, seasonal wetlands, and riparian communities are also present. Wildlife movement between Laguna Laurel and the western portion of the Laguna Coast Wilderness Park is facilitated by a series of tunnels under Laguna Canyon Road (State Route 133).
- Woods End Wilderness Preserve, a 10.6 acre public park which the City acquired in 2002 from Rossmoor Partners. Woods End acts as a trailhead to the Laguna Coast Wilderness Park with a pedestrian and cycling trail winding through coastal sage scrub habitat.
- A Southern California Edison (SCE) right-of-way easement area which borders Woods End Wilderness Preserve and extends for more than mile along the southwestern edge of Laguna Woods. The SCE easement area is located generally east of Lagunas Lakes and the James Dille Greenbelt Preserve, both a part of the Laguna Coast Wilderness Park. In addition to overhead transmission lines, SCE's easement area contains coastal sage scrub habitat.
- Aliso Creek and its riparian corridor and greenbelt area, 16-acres of which is located within the private community of Laguna Woods Village. Aliso Creek begins in the Santa Ana Mountains inside the Cleveland National Forest and traverses 19 miles to its confluence with the Pacific Ocean in Laguna Beach. Aliso Creek transects the southeastern portion of Laguna Woods for approximately one-half mile. The Golden Rain Foundation of Laguna Woods maintains the Aliso Creek biological resource area as passive use open space.

Biological resource areas support sensitive wildlife communities that are of concern to federal and state agencies. Several special-status wildlife species are known to exist, or potentially exist, within Laguna Woods, including the federally endangered Least Bell's Vireo (*Vireo bellii pusillus*).

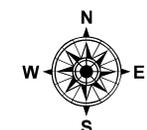
The predominant vegetative community types found in Laguna Woods include annual grassland, coastal sage scrub, and valley-foothill riparian corridors, as well as aquatic habitats provided by Aliso Creek and other open waters (see Figure CO-2).

Figure CO-1
Biological Resource Areas

LEGEND

-  Laguna Woods Boundary
-  Local Roads
-  Municipal Boundaries
-  Resource Area
-  Laguna Coast
-  Wilderness Park

Sources:
 Laguna Woods Boundary -
 City of Laguna Woods GIS,
 City_Boundary.shp
 Municipal Boundary -
 Cal Atlas, Incorp12_1.shp
 Local Roads -
 City of Laguna Woods GIS,
 merge of centerline files
 Imagery - ESRI Basemap, ArcGIS 10
 Resource Areas - CA Dept of Fish &
 Wildlife, Orange County, PMC, 2014



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City of Laguna Woods
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February 2015

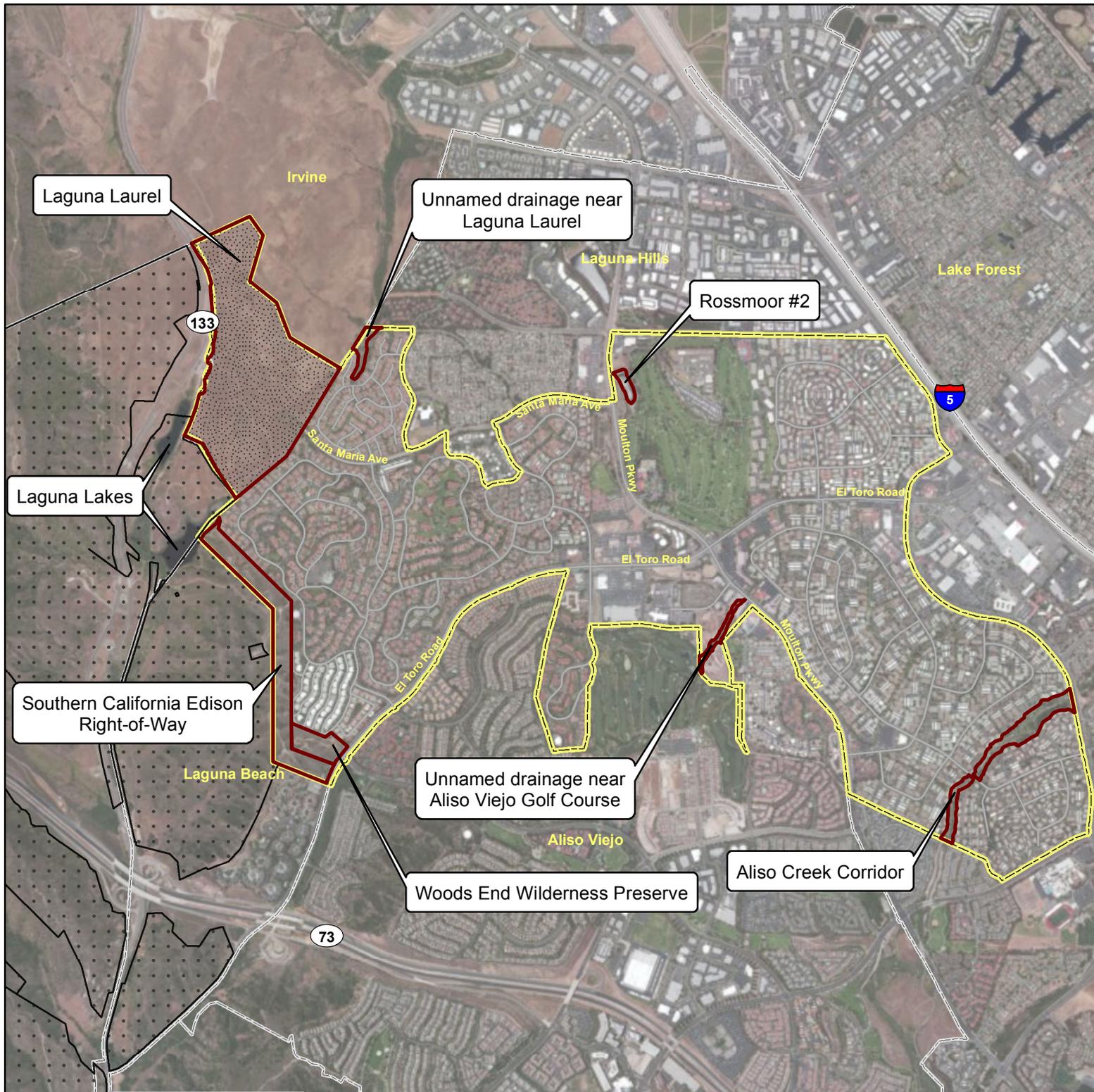


Figure CO-2 Vegetative Communities

LEGEND

-  Laguna Woods Boundary
-  Local Roads
-  Municipal Boundaries
- Vegetative Communities**
-  Annual Grassland
-  Coastal Sage Scrub
-  Valley Foothill Riparian
-  Open Water
-  Ruderal
-  Urban

Sources:
 Laguna Woods Boundary - City of Laguna Woods GIS, City_Boundary.shp
 Municipal Boundary - Cal Atlas, Incorp12_1.shp
 Local Roads - City of Laguna Woods GIS, merge of centerline files
 Imagery - ESRI Basemap, ArcGIS 10
 Vegetative Communities - PMC, 2014

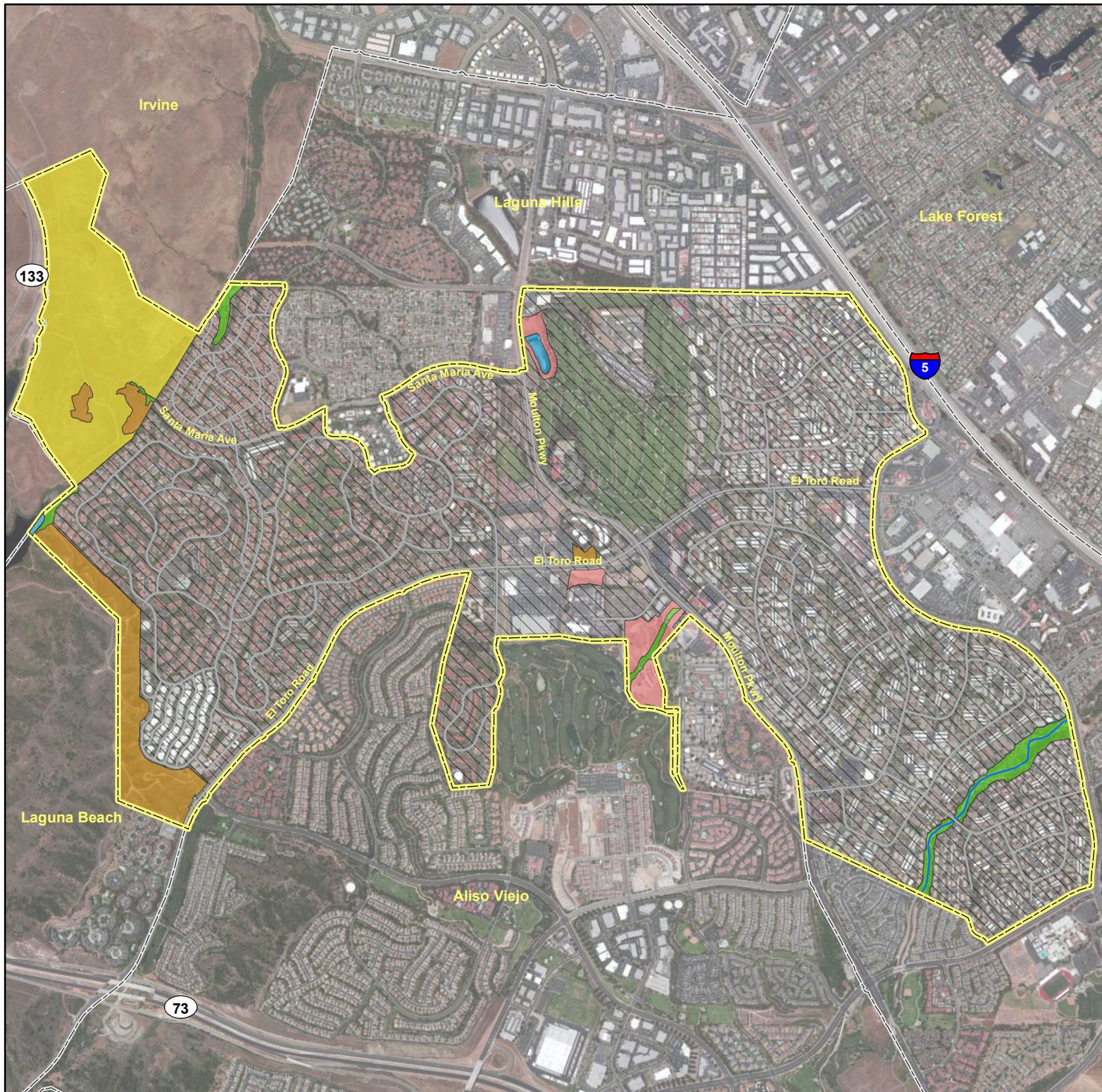


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Connectivity between open space areas is an important element of wildlife conservation. By joining sub-regional and regional biological resource areas that might otherwise be fragmented as a result of urbanization, wildlife corridors can help to maintain and re-establish wildlife populations, as well as to increase biodiversity within existing populations. In Laguna Woods, the Laguna Laurel and Aliso Creek biological resource areas act as wildlife corridors that help to facilitate movement between the Pacific Ocean, coastal wilderness parks, and Cleveland National Forest.

While not located within Laguna Woods, the City is a partner with the cities of Aliso Viejo, Laguna Hills, and Lake Forest in the regional Dairy Fork Constructed Wetlands Project located generally southwest of the intersection of Moulton Parkway and Aliso Creek Road in the city of Aliso Viejo. The Dairy Fork Constructed Wetland and its associated drainage (a portion of which originates in Laguna Woods) is tributary to Aliso Creek and, thereafter, the Pacific Ocean.

Goal CO-2. Preserve and enhance the environment to support biological resources.

Policy Objectives and Implementation Actions

CO-2.1. *Adopt and enforce regulations promoting biological resource goals.*

A. Adopt, review, update, and enforce regulations including, but not limited to:

- Regulations pertaining to the long-term maintenance of biological resource areas as open space areas with limitations on activities with the potential to adversely impact ecologically valuable vegetative communities or sensitive wildlife communities.
- Regulations pertaining to the minimization of the removal of ecologically valuable vegetative communities for new and significant redevelopment projects.
- Regulations pertaining to the prohibition of invasive plant species.

CO-2.2. *Protect and improve sustainable vegetative and wildlife habitats.*

- A. Manage the City's urban forest and landscaping in a changing climate through development and implementation of an Urban Forestry Management and Landscape Master Plan.
- B. Ensure that new and significant redevelopment projects within urbanized areas minimize the presence of areas conducive to mammalian predator habitation as practical.
- C. Coordinate with the Orange County Flood Control District/OC Flood to manage Aliso Creek-related flood issues in a manner that maintains as natural a physical condition as practical.
- D. Support the maintenance and operation of the Dairy Fork Constructed Wetland.

See also "Water Resources" priority issue for related considerations (page CO-15).

CO-2.3. *Support ecologically-minded use of the Laguna Coast Wilderness Park.*

- A. Collaborate with the Coastal Greenbelt Authority and other agencies and organizations with responsibilities related to the Laguna Coast Wilderness Park to ensure that it is managed and operated in a manner that is sensitive to the presence of biological resources.

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CO-2.4. *Promote connectivity between regional and sub-regional open space areas.*

- A. Participate in and support efforts by federal, state, and local agencies and organizations to establish and maintain regional and sub-regional wildlife corridors.
- B. Collaborate with OC Watersheds, Laguna Woods Village, and other agencies and organizations with responsibilities related to Aliso Creek to ensure that open water and riparian areas are maintained as habitat suitable to facilitate regional and sub-regional wildlife movement.

CULTURAL RESOURCES

Laguna Woods is a part of a region that was once populated by the Gabrielino and Luiseño Native American communities. It has a strong cultural heritage associated with Spanish missionaries and ranching activities dating back to the early Spanish land grants.

Archaeological Resources

Archaeology is the study of prehistoric human activities and cultures. 12 known archeological sites once existed in or immediately adjacent to Laguna Woods; however, all have been destroyed by development, some prior to complete excavation and analysis. The archeological sites contained one isolated prehistoric artifact and a variety of other objects, including lithic scatter, rock shelters/caves, habitation debris, fire affected rocks, and bedrock milling features.

Paleontological Resources

Paleontological resources include the fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils. Laguna Woods is underlain by Tertiary bedrock and covered by unconsolidated Quaternary sediments. Approximately 95% of Laguna Woods is mapped as paleontologically sensitive with numerous vertebrate fossil localities having been recorded.

Historical Resources

Historical resources, as described in the California Environmental Quality Act, include buildings, sites, structures, objects, and districts, each of which may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance and be listed or eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, or a local register of historical resources. No historical resources have been designated in Laguna Woods.

Goal CO-3. Preserve cultural resources.

Policy Objectives and Implementation Actions

CO-3.1. *Identify and protect archeological, paleontological, and historical resources.*

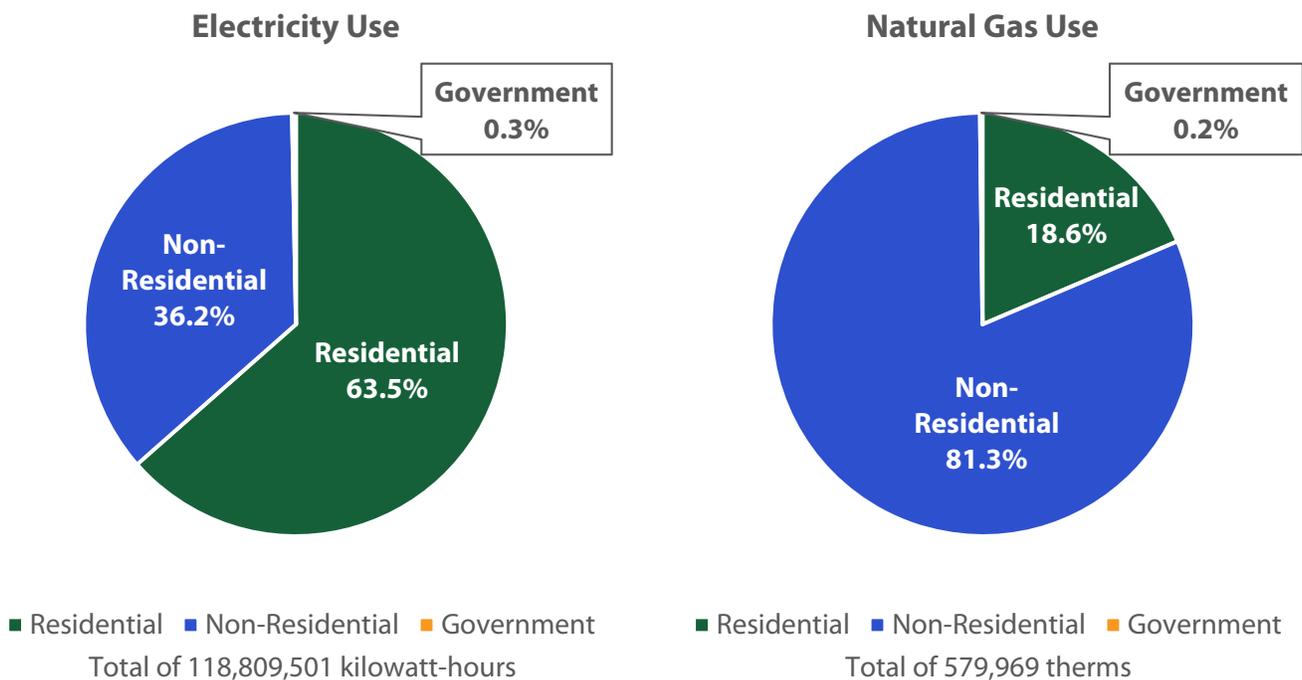
- A. Formalize local cultural resource preservation activities by implementing components of the National Park Service's Certified Local Government (CLG) program.

CONSERVATION ELEMENT

ENERGY RESOURCES

Electricity provided by Southern California Edison is the predominant source of energy in Laguna Woods with only a limited number of properties receiving natural gas service from the Southern California Gas Company. Residential uses account for the majority of local energy use, followed by commercial and other non-residential uses, and streetlights and other government uses.

Figures CO-3 and CO-4: 2012 Laguna Woods Energy Use



Goal CO-4. Increase energy resource independence.

Policy Objectives and Implementation Actions

- CO-4.1. *Maintain energy reliability and affordability through conservation, efficiency, and independence.*
 - A. Develop a protocol for monitoring electricity use.
 - B. Streamline development and permitting standards and programs to encourage renewable energy technologies and energy efficiency improvements.
 - C. Join one or more Property Assessed Clean Energy (PACE) programs.
- CO-4.2. *Demonstrate sustainable energy resource leadership.*
 - A. Develop and implement municipal renewable energy technology and energy efficiency improvement projects.
 - B. Provide and facilitate energy-related public education opportunities.

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LAND RESOURCES

While dry farming and cattle grazing once dominated portions of South Orange County, much of Laguna Woods and the surrounding area is now urbanized.

Forest Resources

Forest lands, as defined by the California Public Resources Code, include lands that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allow for the management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. No forest lands or forest-related resources are located in Laguna Woods, nor is any land zoned for timberland production pursuant to the California Timberland Productivity Act of 1982.

Soil Resources

Soil resources include soils with the potential for agricultural production based on Storie Index Soil Ratings, which assess crop suitability and associated hazards, such as wind erosion and expansive or collapsible properties. Approximately half of the soils in Laguna Woods are considered generally well-suited for agricultural purposes, although moderate to high soil erodability exists in certain areas, as well as deposits of soil with expansive and collapsible properties, which may imperil or effectively preclude agricultural potential. No commercial or large-scale agricultural uses exist in Laguna Woods. Additional soil analysis would be advisable prior to initiating agricultural uses.

Mineral and Other Resources

Mineral resources include non-fuel (e.g., gold, silver, iron, and copper) and industrial minerals (e.g., boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone), as well as construction aggregate (e.g., sand and gravel) and crushed stone. While the California Department of Conservation has determined that much of Laguna Woods contains no significant mineral deposits or a minimal likelihood of the same, available geologic information is insufficient to determine the presence of significant mineral deposits in other areas (see Figure CO-5).

No known production-grade oil, natural gas, or other subsurface resources are located in Laguna Woods; however, changes in extraction and refinement technologies may alter future conditions.

Goal CO-5. Balance land resource utilization with environmental concerns.

Policy Objectives and Implementation Actions

CO-5.1. *Adopt and enforce regulations promoting land resource goals.*

- A. Adopt, review, update, and enforce regulations including, but not limited to:
 - Regulations pertaining to mineral, oil, natural gas, and subsurface resource extraction operations with the potential to adversely impact the environment.

Figure CO-5
Mineral Resource Zones

LEGEND

 Laguna Woods Boundary

 Local Roads

 Municipal Boundaries

Mineral Land Classification

 MRZ-1

 MRZ-3

MRZ-1 are areas where no significant mineral deposits are present or little likelihood exists for their presence.

MRZ-3 are areas containing mineral deposits the significance of which cannot be evaluated from available data.

Sources:

Laguna Woods Boundary -
 City of Laguna Woods GIS,
 City_Boundary.shp

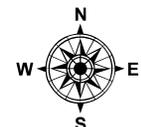
Municipal Boundary -
 Cal Atlas, Incorp12_1.shp

Local Roads -

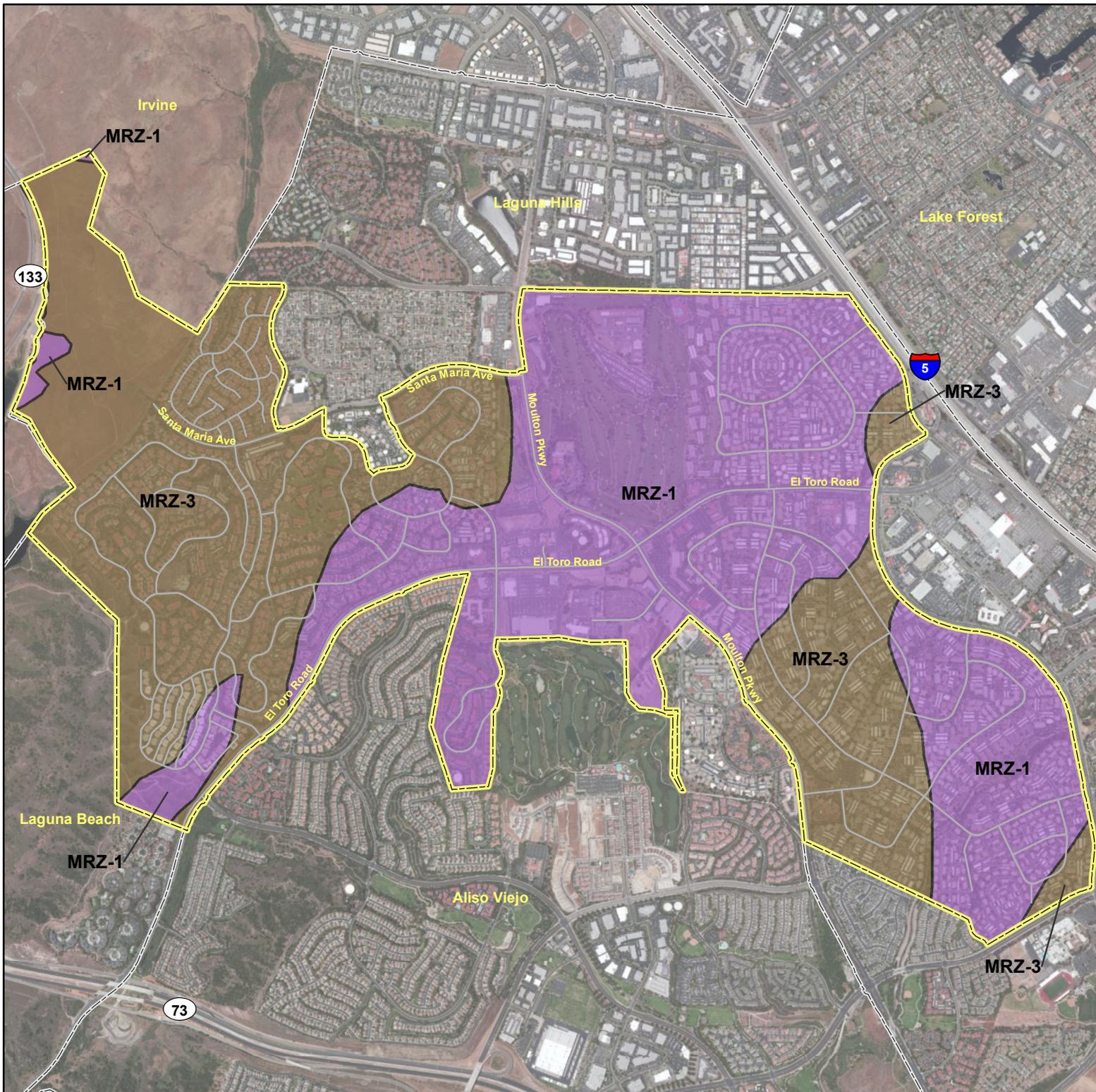
City of Laguna Woods GIS,
 merge of centerline files

Imagery - ESRI Basemap, ArcGIS 10

Mineral Resource Zones - CA Dept
 of Conservation, 1995



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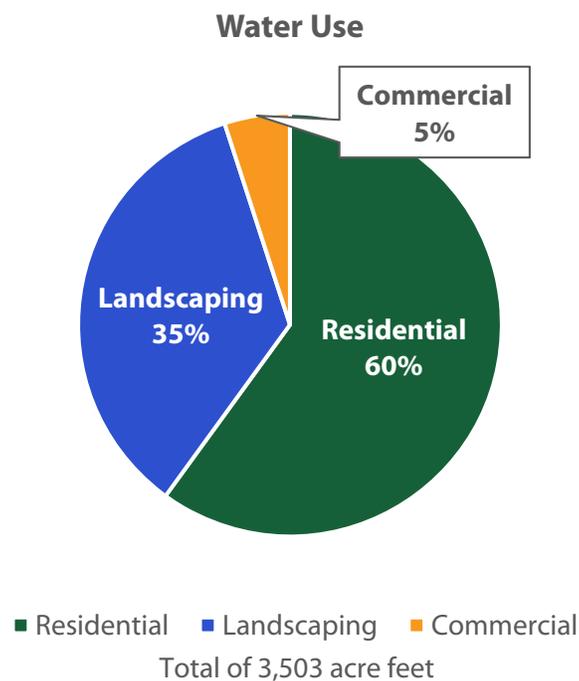
WATER RESOURCES

Water is fundamental to life and crucial to the health and well-being of Laguna Woods' residents, businesses, visitors, biological communities, and downstream neighbors. Like other communities in California, water resources are threatened by drought, climate change, and other conditions.

Water Supply

The El Toro Water District is responsible for providing water and wastewater services in Laguna Woods. Residential uses account for the majority of local water use, followed by landscaping and commercial uses. All potable water is imported by the El Toro Water District for local use.

Figure CO-6: 2014 Laguna Woods Water Use



Although the El Toro Water District is committed to developing local water resources, including the expansion of recycled water service, Laguna Woods will continue to be dependent on imported potable water from both the State Water Project and the Colorado River Basin for the foreseeable future. That dependence means that changes to precipitation levels, snowpack, or water demand in the Sierra Nevada or Colorado River Basin can have an effect on local water availability.

Laguna Woods is generally located at the southern terminus of the Orange County Groundwater Basin's coastal plain, which is a critical source of replenishable water for Orange County.

CONSERVATION ELEMENT

Goal CO-6. Increase water resource independence.

Policy Objectives and Implementation Actions

CO-6.1. *Adopt and enforce regulations promoting water resource goals.*

- A. Adopt, review, update, and enforce regulations including, but not limited to:
- Regulations pertaining to the minimization of water use in landscape improvements, as well as for new and significant redevelopment projects.

CO-6.2. *Maintain water reliability and affordability through conservation, efficiency, and independence.*

- A. Promote the retrofit of structures and irrigation systems with individual water meters through collaboration with other agencies and the pursuit of incentivizing measures.
- B. Join one or more Property Assessed Clean Energy (PACE) programs.

CO-6.3. *Demonstrate sustainable water resource leadership.*

- A. Manage the City's urban forest and landscaping in a changing climate through development and implementation of an Urban Forestry Management and Landscape Master Plan.
- B. Develop and implement municipal water efficiency improvement projects.
- C. Provide and facilitate water-related public education opportunities.

Water Pollution

Laguna Woods is located in the San Juan Hydrologic Unit and lies within the boundaries of three watersheds: Aliso Creek, Newport Bay, and Laguna Coastal Streams Watershed (see Figure CO-7). In addition to Aliso Creek, which transects the southeastern portion of Laguna Woods for one-half mile, Laguna Woods is tributary to San Juan Creek, the Pacific Ocean, and other receiving waters.

The National Pollutant Discharge Elimination System (NPDES) is a federal program authorized by the Water Pollution Control Act of 1972 and implemented locally by the State Water Resources Control Board and its regional water quality control boards. NPDES regulations, and the associated permits that regulate local governments, seek to control the discharge of pollutants into waters of the United States (e.g., wetlands, rivers, streams, lakes, ponds, and territorial seas). Laguna Woods is subject to a variety of NPDES regulations and permits, including two phase II municipal separate storm sewer system permits. A relatively unique attribute of Laguna Woods is that it is one of few cities in California to experience split NPDES regulation and permitting, as a result of its location at the southern limit of the Santa Ana Regional Water Quality Control Board's jurisdiction and at the northern limit of the San Diego Regional Water Quality Control Board's jurisdiction.

Laguna Woods is subject to a California Water Code Section 13225 Directive concerning Aliso Creek. The directive, which was issued on March 2, 2001 by the San Diego Regional Water Quality Control Board seeks to reduce fecal indicator bacteria levels in Aliso Creek and its tributaries. The presence of fecal indicator bacteria suggests a likelihood of viruses and other harmful pathogens.

Figure CO-7
Watershed Boundaries

LEGEND

-  Laguna Woods Boundary
-  Local Roads
-  Municipal Boundaries
-  Stream
-  303(d) Impaired Water Bodies
- Watersheds**
-  Aliso Creek
-  Laguna Coastal Streams
-  Newport Bay

Sources:
 Laguna Woods Boundary - City of Laguna Woods GIS, City_Boundary.shp
 Municipal Boundary - Cal Atlas, Incorp12_1.shp
 Local Roads - City of Laguna Woods GIS, merge of centerline files
 Imagery - ESRI Basemap, ArcGIS 10
 Watershed Boundary - Orange County, 2014
 Streams - CA Dept of Fish & Wildlife, 2014
 Impaired Waters - EPA, 2014

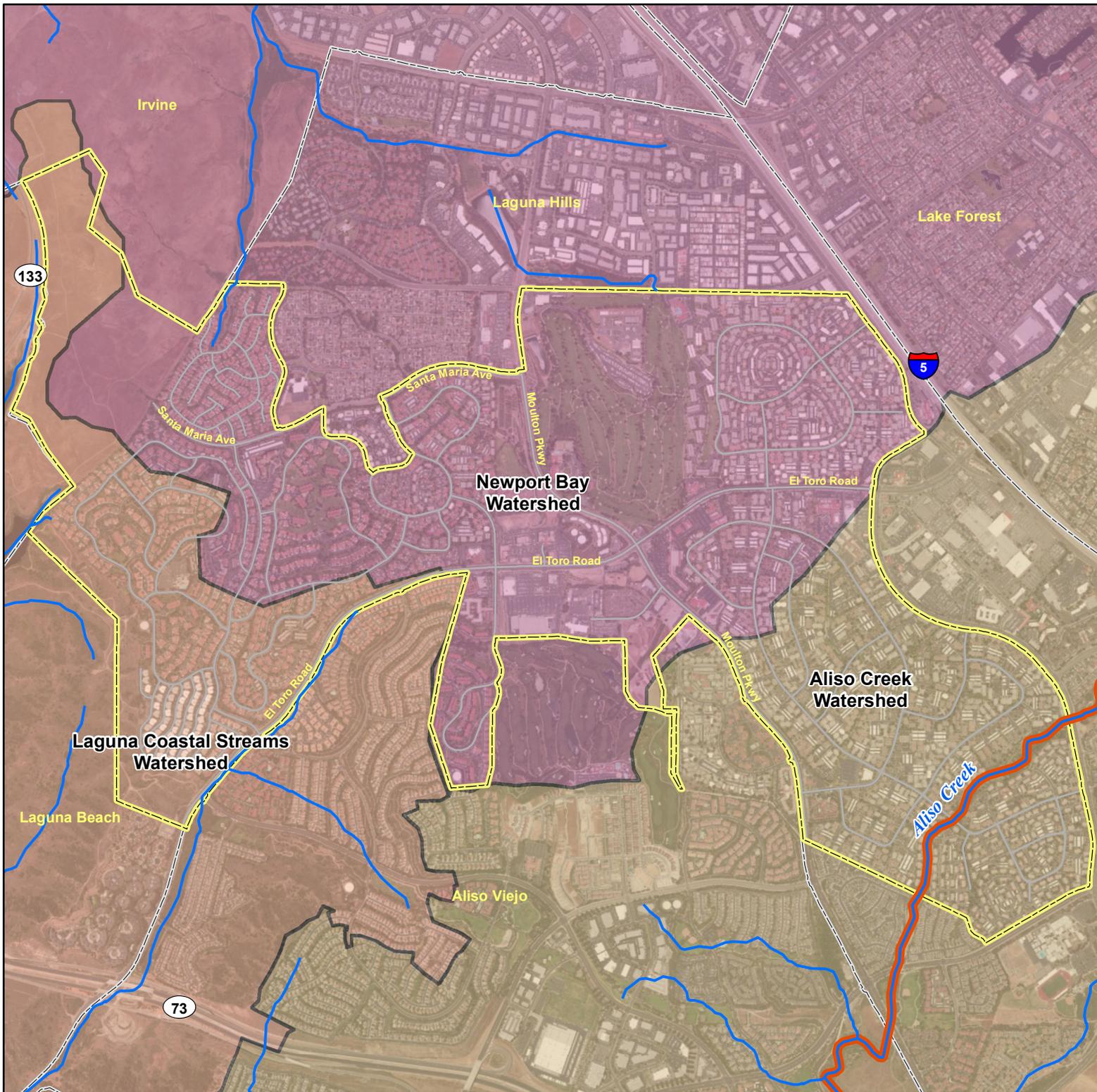


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Goal CO-7. Improve receiving water quality.

Policy Objectives and Implementation Actions

CO-7.1. *Adopt and enforce regulations promoting water resource goals.*

- A. Adopt, review, update, and enforce regulations including, but not limited to:
 - Regulations pertaining to the attainment of goals, targets, and standards established by National Pollutant Discharge Elimination System (NPDES) permits.

CO-7.2. *Demonstrate sustainable water resource leadership.*

- A. Ensure that municipal landscaping operations employ weed and pest management practices that minimize the application of herbicides and pesticides.
- B. Expand the use of structural best management practices in municipal infrastructure projects, including permeable pavement and low impact development where feasible.
- C. Develop and implement municipal water quality improvement projects.
- D. Support the maintenance and operation of the Dairy Fork Constructed Wetland.
- E. Provide and facilitate water-related public education opportunities.

GREENHOUSE GAS EMISSIONS

Greenhouse gases reflect heat back toward the earth's surface rather than allowing it to escape into space, in much the same way as the glass walls and ceiling of a greenhouse help to trap heat inside. As concentrations of greenhouse gases in the atmosphere increase, more heat is trapped, triggering changes in the global climate with cascading effects on the local climate. Greenhouse gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases.

Greenhouse gas emissions contribute to the phenomenon of climate change, which has both global and local climate implications. Extreme heat (heat waves) is believed to be the most likely climate change exposure facing Laguna Woods and among the climate change exposures with the highest degree of certainty regarding future change. Climate change may also affect annual precipitation, extreme storms and flooding, wind, wildfires, and water availability.

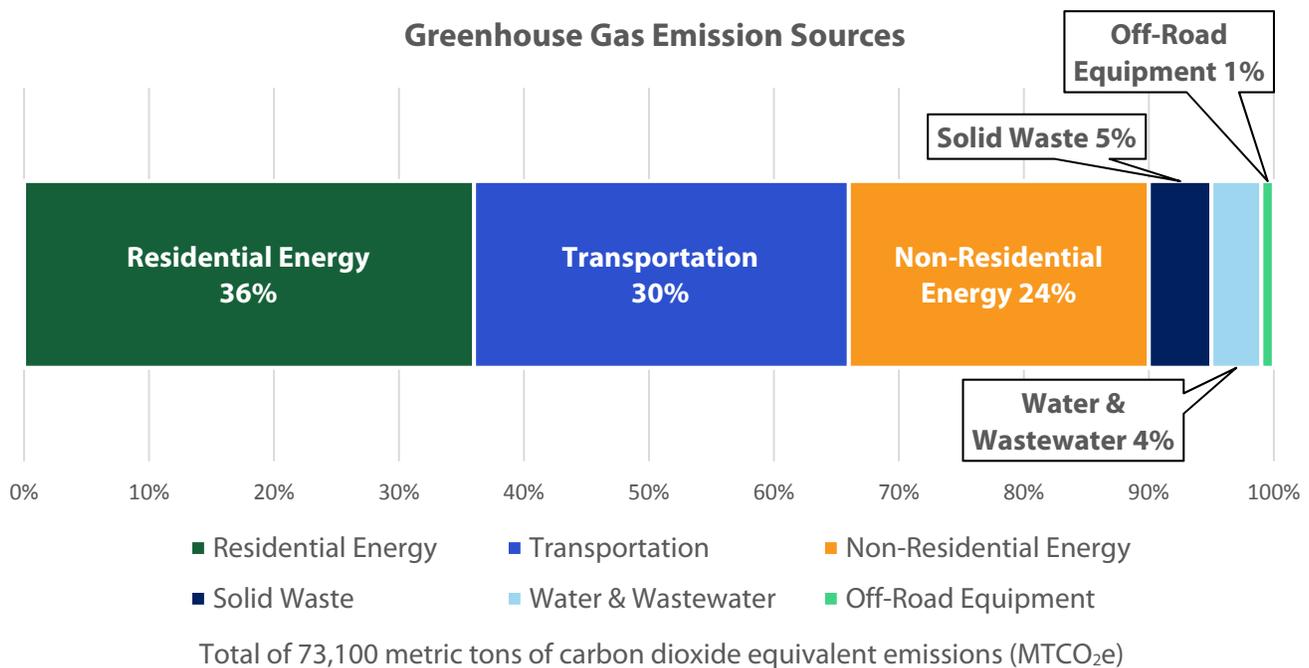
Greenhouse Gas Emissions Inventory

In order to quantify the type and amount of greenhouse gases emitted by Laguna Woods, the City has developed a greenhouse gas emissions inventory based on activities in 2012. Six sectors were inventoried, including residential energy, non-residential energy, transportation, solid waste, water and wastewater, and off-road equipment (e.g., lawn mowers and leaf blowers). While a portion of the inventoried emissions were calculated based on emissions physically emanating from within Laguna Woods, the majority of inventoried emissions occurred outside of Laguna Woods, but as a direct effect of local demands (e.g., energy production and water conveyance activities).

CONSERVATION ELEMENT

Energy and transportation account for the majority of local greenhouse gas emissions, followed by solid waste, water and wastewater, and off-road equipment.

Figure CO-8: 2012 Laguna Woods Greenhouse Gas Emissions



Goal CO-8. Reduce local greenhouse gas emissions.

Policy Objectives and Implementation Actions

CO-8.1. Control sources of greenhouse gas emissions.

- A. Develop and implement a Climate Action Plan that is aligned with federal and state standards and includes long-term strategies for reducing greenhouse gas emissions across all sectors.

CO-8.2. Demonstrate climate change leadership.

- A. Ensure that municipal solid waste handling services employ collection practices that minimize vehicle miles traveled and the consumption of fossil fuels.
- B. Incorporate climate adaptation into long-range planning documents.

See also the following priority issues for related considerations:

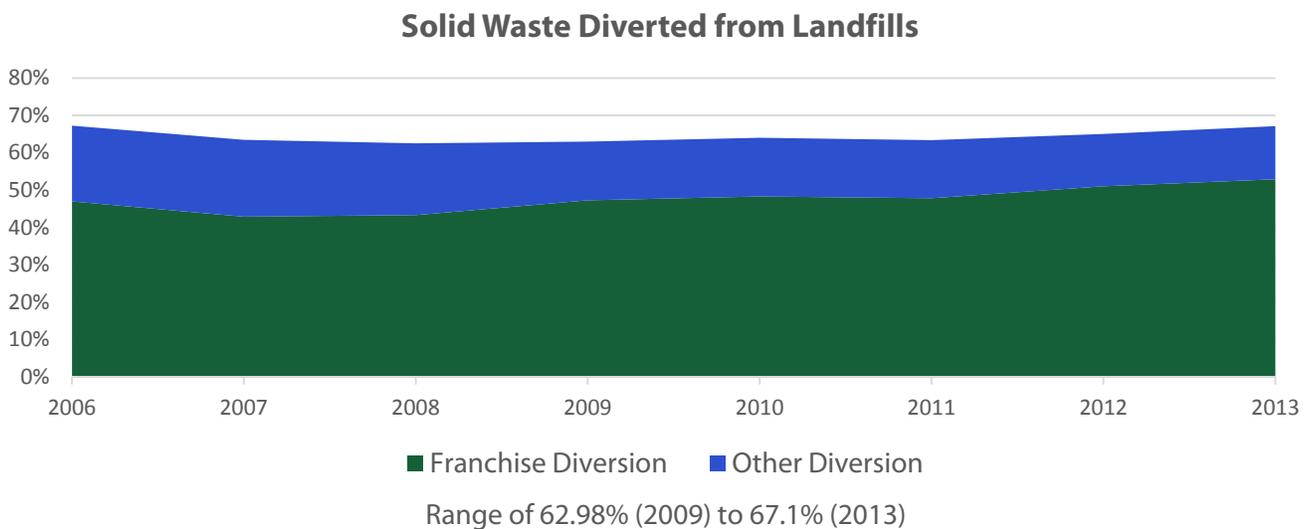
- Air Resources (page CO-5) – particularly, reduction of mobile source emissions
- Energy Resources (page CO-12) – particularly, increase of local energy generation
- Land Resources (page CO-13) – particularly, mitigation of adverse activity impacts
- Water Resources (page CO-15) – particularly, increase of local water production

CONSERVATION ELEMENT

WASTE AND RECYCLING

Waste and recycling services in Laguna Woods are primarily provided by franchise and other third-party contract service providers coordinated by the City. As of 2015, most of the waste that is not recycled or reused is transported to the 725-acre Frank R. Bowerman Landfill, located in the city of Irvine. The Frank R. Bowerman Landfill began operations in 1990 with 325 acres permitted for refuse disposal and is scheduled to reach capacity in approximately 2053.

Figure CO-9: Laguna Woods Solid Waste Diversion



Goal CO-9. Divert two-thirds of local waste from landfills.

Policy Objectives and Implementation Actions

CO-9.1. *Adopt and enforce regulations promoting waste and recycling goals.*

A. Adopt, review, update, and enforce regulations including, but not limited to:

- Regulations pertaining to the landfill diversion of construction and demolition waste.
- Regulations pertaining to limitations on the use of products lacking biodegradability.

CO-9.2. *Expand opportunities for recycling and reuse of waste.*

A. Simplify recycling opportunities through public education, special collections, and equipment designed with the needs and demographics of local residents and businesses in mind.

B. Develop and implement municipal waste and recycling programs, including an organic waste diversion program and programs that convert solid waste to energy or other products.

CO-9.3. *Demonstrate waste and recycling leadership.*

A. Ensure that municipal purchasing considers recycled and recyclable products as practical.