

Open Space and Environmental Conservation

The quality of the natural environment plays a significant role in a community's quality of life. A healthy system of open space lands, natural resources, and habitat areas can help ensure clean air and water while providing recreational opportunities and promoting a healthier environment for residents and wildlife. While Carson has limited natural habitat areas, stewardship of environmental and cultural resources, and a focus on energy and water conservation can help enhance resource sustainability and availability to future generations.

This element seeks to protect and enhance open space, natural habitat, and biological and cultural resources and strategies to promote the wise use of energy and water while minimizing waste. Other elements related to this chapter include:

- **Chapter 5:** Recreation and Active Lifestyle addresses open space and parks for outdoor recreation;
- **Chapter 6:** Community Health and Environmental Justice addresses similar topics related to public health, equity, and environmental considerations;
- **Chapter 7:** Community Services, Education, and Safety Element addresses environmental hazards which can affect open space, biological resources, air quality, and greenhouse gases; and
- **Chapter 9:** Noise.

The Open Space and Environmental Conservation Element consists of narrative and guiding and implementing policies to sustain and improve quality of the natural environment in Carson so as to:

- Improve water and air quality;
- Promote conservation of open space, biological, and water resources;
- Address and reduce impacts caused by climate change; and
- Reduce solid waste accumulation and improve utility access.





RELATIONSHIP TO STATE LAW

Government Code Section 65302(d) requires general plans to include a conservation element for the conservation, development, and utilization of natural resources and Section 65302(e) requires an open space element for the preservation of open space for natural and cultural resources. In accordance with State law, this element satisfies the statutory requirements for both conservation and open space requirements as it addresses the conservation of Carson's natural resources.

RELATIONSHIP TO GUIDING PRINCIPLES

The Open Space and Environmental Conservation Element most closely furthers the following guiding principles as it relates to open space and environmental conservation:

- **Guiding Principle 6:** Foster harmony between industrial and residential land uses.
- **Guiding Principle 7:** Improve public health and sustainability.
- **Guiding Principle 8:** Promote development of a cohesive open space system.

8.1 Open Space Resources

At one point in time, the land that is now Carson was a part of Rancho Dominguez, with ample open spaces and natural resources within its boundaries. As the southern Los Angeles region grew, many of these natural resources were consumed by urban development, which included housing as well as heavy industrial, oil extraction and refinement, and landfills. Government Code Section 65560 requires six different types of open space for the preservation of natural resources be incorporated into the General Plan which are described in this section.

OPEN SPACE FOR THE PRESERVATION OF NATURAL RESOURCES

State law requires that policies addressing open space for the preservation of natural resources be incorporated into the General Plan. Such resources include areas required for the preservation of plant and animal life, areas of ecological and other scientific study value, rivers, streams, bays and estuaries, coastal beaches, and lake shores. The only such area identified within the Planning Area is a wooded riparian area along an unimproved drainage within the Carson Harbor Village Mobile Home Park, which is private land and inaccessible to the public. This area, covering approximately 17 acres, provides habitat for a variety of plants and small animals.

OPEN SPACE FOR THE PRODUCTION OF RESOURCES

In Carson, open space used for the production of resources includes agricultural lands and areas used for the production and management of oil and petroleum products.

Excluding small agricultural areas along utility transmission corridors, there are approximately 62 acres of land within the City that have agricultural uses on them. These areas are designated for light industrial or park/open space uses in the General Plan.

Portions of Carson are located within the Dominguez and Wilmington Oil Fields. As a result, there are large areas of the City devoted to the management and production of oil and petroleum products. These areas are designated Heavy Industrial on the Land Use Diagram due to the nature of activities associated with these uses. Due to the industrial uses on these sites, these open spaces typically do not provide significant plant or animal habitat.



OPEN SPACE FOR OUTDOOR RECREATION

This category includes open space that is used for outdoor recreation, including, but not limited to, areas of outstanding scenic, historic, and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas that serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.

There are about 343 acres of parks and recreational facilities in Carson, including those that are owned by the City, those owned by Los Angeles County, private parks, and parks available through joint-use agreements with school districts. Most parks incorporate spaces for passive and active recreation; additional information on parks can be found in Chapter 5: Recreation and Active Lifestyle. In addition, open space for outdoor recreation is provided by the California State University Dominguez Hills (CSUDH) campus, which has existing and planned recreational open space, and cemeteries like Lincoln Memorial Park Cemetery. Both areas are designated as Public/Institutional in the Land Use Diagram.

There are approximately 148 acres of parks/open space designated in the Land Use Diagram that are within utility easements or adjacent to channels that are intended to expand and connect Carson's open space network.

OPEN SPACE FOR PUBLIC HEALTH AND SAFETY

This open space category is for public health and safety, including, but not limited to, areas that require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs, and areas required for the protection and enhancement of air quality.

There are a few open spaces that require special management that are not explicitly designed for parks or open spaces, such as the Bixby Marshland that is a part of Sanitation Districts of Los Angeles County Joint Water Pollution Control Plant.

Use of the 15 closed landfills in Carson is subject to State and federal regulations. Of those closed landfills, eight have been remediated to varying degrees (e.g., properly capped, appropriate collection systems installed, etc.). The remaining landfills are either vacant and un-remediated, used as a golf course (i.e., Victoria Golf Course), or are slated for development (like at the District at South Bay).

The Avalon-Compton Fault Zone occupies a small area in the northeastern area of the city. A site-specific geotechnical report is required for construction within 1/8 mile on either side of the Fault Zone.

OPEN SPACE FOR MILITARY INSTALLATIONS

This open space category addresses land that has been set aside or adjacent to military installations, training routes, underlying restricted airspace that can provide additional buffer zones to military activities and complement the resource values of the military lands. As Carson does not have any military installations or near military airports, there is no open space or restricted airspace land related to military installations.

OPEN SPACE FOR PROTECTION OF PLACES

This open space category is for the protection of places, features, and objects that are identified as part of the Native American heritage and tribal cultural resources. While Native American settlements existed in the Planning Area in the past, there are no open spaces dedicated to the protection of tribal places.

OPEN SPACE OPPORTUNITIES

Open space generally is limited to recreational opportunities found in publicly maintained parks and utility line rights-of-way. Opportunities to expand open space are limited because the city is virtually built-out, and vacant land—aside from closed landfills that require remediation—is scarce. In addition to the joint use of public school facilities and commercial recreational uses, lands that may be suitable for new recreational open space in the City include: utility transmission corridors, areas along the banks of drainage channels, closed landfills or heavy industrial areas (after appropriate remediation), and development of greenways by increasing street trees and greenery along arterial rights-of-way. Redevelopment of the Shell site on East Del Amo Boulevard and South Wilmington Avenue as well as planned conversion of Victoria Golf Course to recreational opportunities will also increase future park and open space. See Chapter 5: Recreation and Active Lifestyle for more information about these projects.



8.2 Biological Resources

The majority of land within the Planning Area is developed, primarily with industrial uses, residential communities, commercial businesses, schools, roads, and parks. There are very few natural biological resources remaining within the City Limits. There are some areas within the city that may support biological resources, which are regulated by State and federal statutes or should otherwise be addressed as part of environmental review for future entitlements. These areas include: a wooded riparian area along an unimproved drainage within the Carson Harbor Village Mobile Home Park, Wilmington Drain¹, the Dominguez Channel, and Compton Creek.

GENERAL LAND COVER IN THE PLANNING AREA

Although primarily developed with industrial, residential, and commercial uses, there are some open space areas, including parks, sports fields, The Links at Victoria Golf Course, and Lincoln Memorial Park Cemetery that are landscaped with ornamental vegetation and/or grass lawns. Undeveloped areas within the city include four large drainage channels (the unnamed drainage south of Carson Harbor Village Mobile Home Park, Wilmington Drain, Dominguez Channel, and Compton Creek) and associated undeveloped areas, some of which include native and non-native woodland vegetation that may provide habitat for wildlife species. Additionally, there are some undeveloped disturbed areas consisting of non-native grasslands and forbs, or areas that generally lack vegetation due to previous human disturbances. These vegetation communities are described below.

- **Mixed riparian woodland** consists of planted or naturalized, non-native trees intermixed with native tree and shrub species. Species within this community include native willows (*Salix* spp.), mule fat (*Baccharis salicifolia*), and non-native carrotwood (*Cupaniopsis anacardioides*), ash (*Fraxinus uhdei*), Mexican fan palm (*Washingtonia robusta*), ornamen-

tal pines (*Pinus* sp.), Peruvian pepper (*Schinus molle*), and castor bean (*Ricinus communis*). Mixed riparian woodland occurs in the Carson Harbor Village Mobile Home Park in the northwest part of the city, as well as within a portion of The Links at Victoria Golf Course where the unnamed drainage flows to the south and becomes an unimproved, earthen-bottomed stream before it outlets into the Dominguez Channel. This community also occurs within the area east of Wilmington Drain.

- **Non-native woodland** typically consists of planted, non-native trees, often characterized by a dominance of eucalyptus (*Eucalyptus* spp.). Other non-native species found in association with this community include Mexican fan palm, ornamental pines, other eucalyptus species, bougainvillea (*Bougainvillea* sp.), tree tobacco (*Nicotiana glauca*), and Russian thistle (*Salsola tragus*). Within the City, non-native woodland occurs along Wilmington Drain just east of Interstate 110 (I-110) in the southwest part of the city.
- **Open Water, Marshland, and Riparian Vegetation.** Open water occurs within improved drainages that are concrete-lined channels with standing water. There is generally no vegetation associated with these areas; however, portions of these channels may support some limited vegetation rooted in accumulated sediment on the top of the concrete channel invert, or growing up through cracks in the concrete lining, and often locate near outfall structures.. Within the city, this community is found within the unnamed drainage south of Carson Harbor Village Mobile Home Park, Wilmington Drain, Dominguez Channel, and Compton Creek.
- **Non-native grassland** consists of dense to sparse annual grasses less than three feet high, typically dominated by brome (*Bromus* spp.) and oat (*Avena* spp.) species. Non-native grassland is located in the western portion of the city, south of Del Amo Boulevard.

¹ The segment of Wilmington Drain within City limits runs parallel to the I-110 on the east side of the freeway in the southwest corner of Carson. Outside Carson, the waterway extends southward on the west side of the freeway, toward Harbor Park Golf Course, Ken Malloy Harbor Regional Park, and Los Angeles Harbor College.



- **Disturbed** areas support little to no vegetation and have been physically altered by previous human activity and are therefore no longer able to support a recognizable native or naturalized vegetation association. The soil is often highly compacted or frequently disturbed. Although most of the city is developed, there are a few fragmented patches of disturbed areas found within the central and southern portions of the city, including areas around Shell Oil Products and the Goodyear Blimp Base Airport.
- **Developed** urban areas and suburban areas have been physically altered to the point where they can no longer support native vegetation and includes areas with permanent or semipermanent structures, pavement or other hardscape, and landscaped areas that require irrigation. Developed land constitutes the majority of the land throughout the city as well as localized areas of the SOI. It includes industrial uses, residences, businesses, schools, parks, freeways and other roads, sidewalks, and irrigated landscapes. Within the areas called out as developed land cover, there may be some oak trees, walnut trees, or other small pockets of native habitat. However, these pockets are generally too small and isolated to support other than urban- and suburban-adaptive wildlife species.

WILDLIFE

Although there is little native habitat remaining within the Planning Area, the vegetation communities discussed above provide habitat for some species of wildlife, particularly those wildlife species that are highly tolerant of urban environments, such as avian species that have adapted to living within or adjacent to developed areas.

Wildlife movement corridors are generally defined as connections between blocks of habitat that allow for the physical movement and genetic exchange between otherwise isolated animal populations. Movement corridors may be local, such as between foraging and nesting or denning areas, or they may be regional in nature, allowing animals to access alternative territories as fluctuating dispersal pressure dictate. In the absence of wildlife corridors, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because such conditions preclude the infusion of new individuals and genetic information into isolated populations.²

Within the city, limited wildlife movement is expected due to the prevalence of developed areas and lack of native habitats. However, the riparian woodland communities may support movement on a smaller or “local” scale for

² England, S. and S. Nelson. 1976. Land Capability/Suitability Study Los Angeles County General Plan Revision Program: Significant Ecological Areas Report.

species of invertebrates, amphibians, reptiles, birds, and small-to-medium mammals, primarily those with high urban tolerance. The home range of many of these species may be entirely contained within the isolated patches of riparian woodland habitat remaining within the city. However, on a larger regional scale, movement is not expected except for some limited movement along the improved, channelized waterways that may attract avian species and urban-adapted wildlife following these aquatic resources to areas where patches of habitat may be present.

SPECIAL-STATUS SPECIES AND HABITATS

Special-status plants include those listed, or candidates for listing, by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW), as well as species considered sensitive by the California Native Plant Society (CNPS), particularly Rare Plant Ranks (CRPR) 1A, 1B, 2A, and 2B. Special-status wildlife species include those species listed as endangered or threatened under the Federal Endangered Species Act or California Endangered Species Act, candidates for listing by USFWS or CDFW, and species that are considered State Species of Special Concern, Fully Protected, or on the Watch List of Special Animals by CDFW.

Based on a review of the California Natural Diversity Data Base (CNDDDB), which contains records of the occurrences of special status habitats and plant and animal species from the vicinity of the city, there are no plant communities documented within the city's boundaries that are considered sensitive or of high priority for study by CDFW due to their scarcity and/or because they support special status plant and wildlife species. The city also does not support USFWS-designated critical habitat for any federally-listed species (i.e., endangered or threatened species). Although several special-status plant and wildlife species were reported in the CNDDDB to have potential to occur within the city and surrounding area, most of these species are not expected to be present within the Planning Area due to the prevalence of development, or because suitable habitat to support the species is not present within the city. Table 8-1 provides a summary of the special-status plant and wildlife species with a low, moderate, or high potential of occurring within the city based upon their known geographic ranges, distributions, and preferred habitats.



TABLE 8-1: SPECIAL-STATUS PLANT AND WILDLIFE SPECIES

| <i>Species</i> | <i>Federal/State/ CRPR Status</i> | <i>Habitat Requirements</i> | <i>Potential to Occur</i> |
|---|---------------------------------------|---|--|
| Southern tarplant (<i>Centromadia parryi</i> <i>ssp. australis</i>) | 1B.1 | Marshes and swamps (margins), valley and foothill grassland, vernal pools. Often in disturbed sites near the coast at marsh edges; also in alkaline soils sometimes in association with saltgrass. | High. In 2009, this species was documented to occur within the city scattered along both banks of Dominguez Channel on either side of Interstate 110, north of Interstate 405. |
| Tricolored blackbird (<i>Agelaius tricolor</i>) | SC | Freshwater marsh, swamp, wetland. Highly colonial species that requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony. | Low. Marginally suitable habitat may present within the city within stands of tules and cattails; known populations of this species have been documented within the vicinity in Harbor (Machado) Lake, downstream portion of Wilmington Drain. ¹ |
| Least Bell's vireo (<i>Vireo bellii pusillus</i>) | FE/SE | Known to occur in riparian forest, scrub, and woodland habitats. Nests primarily in willow, baccharis, or mesquite habitats. | Moderate. Suitable habitat is present within the city; known populations of this species have been documented within the vicinity in a downstream portion of Wilmington Drain. |
| Western mastiff bat (<i>Eumops perotis californicus</i>) | SSC | Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Can roost in crevices in cliff faces, high buildings, trees and tunnels. | Low. Suitable habitat is present within the city; known populations of this species have been documented within the vicinity in a downstream portion of Wilmington Drain. |

Notes:

FE = Federally Endangered

SE = State Endangered

SC = State Candidate

SSC = State Species of Special Concern

- As noted above, these species have a potential to occur within the city and surrounding area. For example, Harbor (Machado) Lake and Wilmington Drain are just southwest of city limits, but the area of potential occurrence from these places overlap with Carson.

Sources: CDFW, 2017; CNPS, 2017; USFWS, 2017



8.3 Mineral Resources

Mineral resources include existing surface mining activities and known deposits of commercially-viable minerals and aggregate resources, as well as areas suitable for the drilling for and production of energy resources, including crude oil and natural gas. Carson is located within a major oil-producing district in Southern California, the Los Angeles Basin. The city is located within the Wilmington, Torrance, and Dominguez oil fields.³ There are still active oil wells operating within the city. Oil production is regulated by the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR).

The Los Angeles metropolitan area produces and consumes more construction aggregate than any other metropolitan area in the country. The county depends on the California Geological Survey to identify deposits of regionally significant aggregate resources. These clusters or belts of mineral deposits are designated as Mineral Resource Zones (MRZ-2s). No MRZ-2s are identified in the city.

³ State of California State Water Resources Control Board, 2015. GeoTracker Website Oil/Gas Field Boundaries. Online. <http://geotracker.waterboards.ca.gov/map/>. Accessed November 2017.

8.4 Cultural Resources

CULTURAL AND NATURAL SETTING

ETHNOGRAPHIC SETTING – THE GABRIELINO

The city is located within Gabrielino (Gabrieleño, Tongva, or Kizh) territory. According to Bean and Smith⁴, the Gabrielino, with the exception of the Chumash to the north, “were the wealthiest, most populous, and most powerful ethnic nationality in aboriginal Southern California.” Named after the San Gabriel Mission, the Gabrielino occupied sections of Los Angeles, Orange, and San Bernardino counties, and the islands of San Nicolas, Santa Catalina, and San Clemente. Availability of water and floral and faunal resources dictated seasonal migration rounds with more permanent villages and base camps being occupied primarily during winter and spring months. In the summer months, the village populations divided into smaller units that occupied seasonal food procurement areas. The more permanent settlements tended to be near major waterways and food sources and various secular and sacred activities, such as food production and storage and tool manufacturing, were conducted at these areas.⁵

⁴ William C. Sturtevant, Robert F. Heizer, Lowell J. Bean, and Charles R. Smith, *Handbook of North American Indians* (Smithsonian Institution, 1978), Volume 8, pp. 538.

⁵ *Ibid.*

SUANGNA VILLAGE

The village of Suangna is known to be located within the City Limits. Historians have postulated that the village of Suangna was located around "... present-day Avalon Boulevard to Wilmington Avenue on the west and east, and from 230th Street to Sepulveda Boulevard on the north and south". The village was originally part of the Rancho San Pedro land grant given to Juan Dominguez.⁶ The village has been described as containing shell midden, burials, and artifacts such as tubular stone pipes, abrading stones, pottery, manos, metates, mortars, pestles, steatite bowls, etc.⁷ In 1971, Carson Councilman, Gilbert D. Smith formed the Carson Indian Historical Advisory Committee. The Committee along with students and researchers from California State University (CSU) Dominguez Hills completed an application to designate the village as a Point of Historical Interest. In 1972, a ceremony was held by the City of Carson and Watson Industrial Properties, to commemorate the village as a Point of Historical Interest. The artifacts recovered from the village are curated at CSU Dominguez Hills.⁸

THE ARCO BURIAL SITE (CA-LAN-2682)

The Arco burial site, designated as CA-LAN-2682 is also located within the City Limits at the ARCO Oil Refinery.⁹ It is estimated that approximately 50 individuals of both genders were exposed and recovered during mechanical trenching at the refinery. Two separate burial episodes are believed to have occurred. The lower grouping of burials consists of individuals that were carefully laid out, some of which still held burial items. The upper grouping consisted of individuals which appeared to have been buried "hastily

in random positions and directions."¹⁰ Among the 500 plus artifacts recovered include shell beads, projectile points, bone awls, glass trade beads, steatite pipe fragments, and other steatite objects.¹¹

EARLY HISTORY OF THE CITY OF CARSON

The city was once part of Rancho San Pedro, one of the first land grants awarded to Juan Jose Dominguez.¹² It included more than 75,000 acres and stretched from the Los Angeles River, all the way west to the Pacific Ocean and encompassed the present-day cities of Carson, Torrance, Redondo Beach, Lomita, Wilmington, and portions of San Pedro. Dominguez was a soldier who first served under Pedro Fages and later escorted Junipero Serra and his Franciscan padres while they established missions. Upon Dominguez' death, the Rancho was divided between his nephew (Jose Cristobal Dominguez) and a ranch helper.¹³

10 Bonner, Wayne H. n.d. Human Burials. Online. https://scahome.org/publications/proceedings/Proceedings_13BonnerW1.pdf. Accessed September 2017.

11 Department of Parks and Recreation Site Form for P-19-002682/CA-LAN-2682. On file at the South Central Coastal Information Center.

12 Beck, Warren A., and Ynez D. Haase., 1974. Historical Atlas of California. University of Oklahoma Press, Norman, Publishing Division of the University. First edition, 1974.

13 City of Carson, 2006-2016. Our City's Spanish Rancho Heritage. Online. <http://ci.carson.ca.us/AboutCarson/SpanishRancho.aspx>. Accessed November 2017.

6 South Bay History. 2015. The Suangna Native American Village in Carson. Online. <http://blogs.dailybreeze.com/history/2015/01/17/the-suangna-native-american-village-in-carson>.

7 Jay K. Sander. 2000. Department of Parks and Recreation Site Form for P-19-000098/CA-LAN-98. On file at the South Central Coastal Information Center.

8 South Bay History. 2015. The Suangna Native American Village in Carson. Online. <http://blogs.dailybreeze.com/history/2015/01/17/the-suangna-native-american-village-in-carson>.

9 Bonner, Diane F. Geoarchaeology at the Arco Burial Site, Carson, California. Online. <http://blogs.dailybreeze.com/history/2015/01/17/the-suangna-native-american-village-in-carson/>. Accessed September 2017.



Dominguez Adobe Museum

By 1859, Manuel Dominguez (son of Jose Cristobal Dominguez) obtained the first Patent of Title from the United States government and was confirmed as the owner of the Rancho, which now includes the present-day cities of Carson, Torrance, Redondo Beach, and the L.A. Harbor. The Dominguez Rancho Adobe Museum, located in the Planning Area's sphere of influence, is a natural history museum dedicated to the Rancho. Built in 1826, the Dominguez Adobe is California Historical Landmark Number 152 and in 1976 was placed on the National Register of Historic Places by the United States Department of the Interior.¹⁴

Maria Victoria (daughter of Manuel Dominguez) married the successful businessman, George Henry Carson. Maria and George had a son, John Manuel Carson. The City of Carson was named after John Manuel Carson, who was head of the Dominguez Water Corporation and an important figure in the development of the area.¹⁵

Beginning with Juan Jose Dominguez and his descendants, ranching became a tradition in the Carson area that lasted for more than a hundred years. By the end of the 19th century, Dominguez' heirs began leasing and selling some of the Rancho land to small farmers.¹⁶ By 1923, the city started growing with the arrival of Southern California Edison and the Southern California Gas Company. By 1926, the city had a general store, a lumber yard, a church, a bar, and a café. During World War II (WWII), the city was either developed, under cultivation or under petroleum production and processing. The city changed after WWII and agricultural pursuits were replaced by industrial, residential, and commercial businesses. By 1967, the Dominguez Estate Company announced over \$58,500,000 of real estate property for sale in the city. The majority of real estate property ended up being purchased by the Union Pacific Railroad, Northwestern Mutual Life Insurance, Watson Land Company, Carson Estate Company, the State of California (for the formation of California State College at Dominguez Hills), and an unknown buyer. In 1968, the

Carson area was incorporated as the City of Carson.¹⁷

GEOLOGICAL AND PALEONTOLOGICAL SETTING

The city is located within the Los Angeles Basin, or the Coastal Plain of Los Angeles and also within the northerly end of the Peninsular Ranges geomorphic province.¹⁸ The Peninsular Ranges province encompasses areas from the Los Angeles Basin south of the Santa Monica Mountains to the tip of Baja California and includes the San Jacinto and Santa Monica Mountain Ranges and Santa Catalina Island.¹⁹

The most noticeable landforms within the city are the Dominguez Hills and the Dominguez Gap. The Dominguez Hills are located in an area between SR-91 and on the north and Del Amo Boulevard on the south and represents the central portion of the Newport-Inglewood fault zone. The Dominguez Gap is situated between the Dominguez Hills and the northwestern extension of Signal Hill and represents the area's northwest-trending faults and folds.²⁰

RESOURCES IDENTIFIED WITHIN THE CITY AND VICINITY

ARCHAEOLOGICAL AND BUILT ENVIRONMENT RESOURCES

The results of the cultural resources records search indicated that a total of 143 cultural resource studies have been conducted within the one-half mile radius of the city. Of these 143 studies, 83 have been conducted within the City Limits. The results of the cultural resources records search also indicated that a total of 51 cultural resources (see Table 8-2) have been recorded within the one-half mile radius of the city. Of the 51 cultural resources previously

14 Dominguez Rancho, History of Dominguez Rancho Adobe Museum. Online. <https://dominguezrancho.org/domingo-rancho-history/>. Accessed September 2021.

15 William Self Associates, Inc. 2001. (LA-05971) California Energy Commission Application for Certification BP 5th Train Project, City of Carson, Los Angeles County, California. Report on file at the South Central Coastal Information Center.

16 County of Los Angeles Public Library, 2017. History of Carson. Online. <https://colapublib.org/history/carson/faq.html>. Accessed November 2017.

17 URS, 2008. Watson Cogeneration Steam and Electric Reliability Project. Section 5.7 Cultural Resources. Online. http://www.energy.ca.gov/sitingcases/watson/documents/applicant/afc/Section%205.07_Cultural%20Resources.pdf. Accessed November 2017.

18 State of California Regional Water Quality Control Board. 2014. Existing Conditions, Regional Geological Setting for the Former Kast Property Tank Farm Site Remediation Project.

19 Carson General Plan Environmental Impact Report. 2002. Environmental Setting, Geology (4.6.1). Online. <http://ci.carson.ca.us/content/files/pdfs/planning/generalplan/EIR.pdf>. Accessed October 2017.

20 State of California Regional Water Quality Control Board. 2014. Existing Conditions, Regional Geological Setting for the Former Kast Property Tank Farm Site Remediation Project.

TABLE 8-2: PREVIOUSLY RECORDED CULTURAL RESOURCES

| <i>Permanent No. (P19-)</i> | <i>Trinomial (CA-LAN)</i> | <i>Description</i> | <i>Date Recorded</i> | <i>Eligibility</i> |
|-----------------------------|---------------------------|---|---------------------------------|--------------------|
| 000088* | 000088 | Prehistoric archaeological site consisting of shell midden, "workshop" and "flint chips". | 1939 | N/A |
| 000098* | 000098 | Prehistoric archaeological site consisting of the Gabrielino village of Suangna. The village was originally recorded as containing a shell midden, burials, and artifacts such as tubular stone pipes, abrading stones, pottery, manos, metates, mortars, pestles, steatite bowls, etc. The village was designated as LAN-013, a County Point of Historical Interest in 1972. | 1939; 1972; 1977; 2000 | N/A |
| 000099 | 000099 | Prehistoric archaeological site consisting of broken manos and mortars. | 1939 | N/A |
| 000101 | 000101 | Prehistoric archaeological site consisting of burials and unspecified artifacts | 1939 | N/A |
| 000106* | 000106 | Prehistoric archaeological site consisting of shell, points, mortars, shell beads, projectile points, etc. | 1939 | N/A |
| 000122 | 000122 | Unspecified archaeological site; no information available on DPR Site form. | 1952 | N/A |
| 000389 | 000389 | Prehistoric archaeological site described as a possible seasonal village or camp site with artifacts consisting of chert flakes, shell fragments, and steatite fragments. | 1969 | N/A |
| 000390 | 000390 | Historic and prehistoric archaeological site described as a surface aboriginal site with "end scrapers" and shell fragments. | 1969 | N/A |
| 000794* | 000794 | Prehistoric archaeological site consisting of a scatter of shell and artifacts. | 1977 | N/A |
| 000795* | 000795 | Prehistoric archaeological site described as a scatter of flakes, shell, bone, and other artifacts. | 1977 | N/A |
| 002682* | 002682 | Protohistoric archaeological site consisting of a burial ground with midden soil and over 500 plus artifacts made up of shell beads, projectile points, bone awls, glass trade beads, steatite pipe fragments, and other steatite objects. | 1998 | N/A |
| 002788 | 002788 | Prehistoric archaeological site consisting of a burial, shell beads, and shell fragments. | 1999 | N/A |
| 002942* | 002942H | Historic archaeological site consisting of wooden posts found during construction of rail lines. | 2001 | N/A |
| 003063* | 003063H | Historic archaeological site consisting of a wood box culvert exposed during grading. | 2001 | N/A |
| 003064* | 003064H | Historic archaeological site consisting of a septic tank exposed during construction. | 2002 | N/A |
| 003065* | 003065H | Historic archaeological site consisting of 10 wooden railroad trestle piles exposed during grading below current railroad grade. | 2002 | N/A |

TABLE 8-2: PREVIOUSLY RECORDED CULTURAL RESOURCES

| <i>Permanent No. (P19-)</i> | <i>Trinomial (CA-LAN)</i> | <i>Description</i> | <i>Date Recorded</i> | <i>Eligibility</i> |
|-----------------------------|---------------------------|--|----------------------|--------------------|
| 003066* | 003066H | Historic archaeological site consisting of a brick septic tank and concrete foundation | 2002 | N/A |
| 003067* | 003067H | Historic archaeological site consisting of two concrete features likely associated with the former Southern Pacific Railroad tracks. | 2001 | N/A |
| 004357* | - | Prehistoric archaeological site consisting of a dispersed shell deposit. | 1979 | N/A |
| 177451 | - | Built environment resource consisting of the First United Methodist Church. | 1981 | N/A |
| 180782* | - | Built environment resource consisting of a one-story family dwelling. | 1994 | N/A |
| 180783* | - | Built environment resource consisting of a one-story frame building for the Pacific Electric Watson Station. | 1994 | N/A |
| 180785* | - | Built environment resource consisting of a complex (Van Vorst Furniture Company) of three industrial buildings. | 1994 | N/A |
| 186868* | - | Built environment resource consisting of the Kinder Morgan Tank Storage Terminals, LLC – made up of a storage tank facility site for oil products, utility and office structures, pump facilities, roads, etc. | 2003 | N/A |
| 187085* | - | California Historical Landmark # 963 –The Mojave Road which starts near Los Angeles Harbor to Cajon Pass and across the Mojave Desert to Nevada State Line. This landmark has been described as unique for its significance as an Indian trail, a federal government supply, a freight and emigrant wagon route, and a recreational trail. | 1989 | N/A |
| 187682 | - | Built environment resource consisting of a maintenance shop. | 1993 | N/A |
| 187683 | - | Built environment resource consisting of a long rectangular single-story building. | 1993 | N/A |
| 187684 | - | Built environment resource consisting of a long rectangular single-story building. | 1993 | N/A |
| 187687 | - | Built environment resource consisting of the Savannah Family Housing area made up of 199 identical duplex units. | 1993 | N/A |
| 187689 | - | Built environment resource consisting of a one-story rectangular building. | 1993 | N/A |
| 187690 | - | Built environment resource consisting of a storage building constructed in 1940. | 1993 | N/A |
| 187691 | - | Built environment resource consisting of a building constructed in 1942 and currently used as a Child Care Center. | 1993 | N/A |
| 187898 | - | Built environment resource consisting of Fire Station No. 79. | 2004 | N/A |
| 187942* | - | Built environment resource consisting of the Union Pacific Railroad Bridge. | 2006 | 6Y |
| 188395* | - | Built environment resource consisting of the Dominguez Refinery, Shell Oil Company. | 2007 | N/A |

TABLE 8-2: PREVIOUSLY RECORDED CULTURAL RESOURCES

| <i>Permanent No. (P19-)</i> | <i>Trinomial (CA-LAN)</i> | <i>Description</i> | <i>Date Recorded</i> | <i>Eligibility</i> |
|-----------------------------|---------------------------|--|----------------------|--------------------|
| 188402 | - | Built environment resource consisting of the Willow Street Under Union Pacific Railroad Bridge built in 1932. | 2007 | N/A |
| 188476* | - | Built environment resource consisting of the 7-Eleven Olympic Velodrome –concrete cycling track. | 2000 | N/A |
| 188477 | - | Historic structure consisting of an electrical transmission tower for the Lighthipe La Fresa 220kV transmission system. | 2009 | 6Z |
| 189246 | - | Historic structure consisting of an electrical transmission tower known as the Lighthipe Long Beach Tower #M5/T2. | 2007 | 6Y |
| 189309* | - | Historic archaeological site consisting of two circular brick structures identified as standpipes used for flood irrigation. | 2011 | N/A |
| 189868 | - | Built environment resource consisting of the Carson Senior High School Gymnasium. | 2011 | N/A |
| 189955 | - | Built environment resource consisting of a modern public utility building. | 2011 | N/A |
| 189988 | - | Built environment resource consisting of the Southern California Edison Long Beach Transmission Towers. | 2011 | N/A |
| 190077 | - | Built environment resource consisting of a commercial building. | 2012 | N/A |
| 190096 | - | Built environment resource consisting of a utility pole. | 2012 | N/A |
| 190277 | - | Built environment resource consisting of a steel lattice SCE Transmission Tower #M2-T2. | 2013 | N/A |
| 190979 | - | Built environment resource consisting of a steel lattice SCE Transmission Tower known as SCE M5-T1 Fresa-Laguna Bell | 2014 | N/A |
| 192309 | - | Built environment resource consisting of the Long Beach-Laguna Bell 60kV and 220kV Transmission Lines. | 2016 | 2S2 |
| 192337 | - | Built environment resource consisting of the Will J. Reid Scout Park and former Boy Scouts of America campground. | 2014 | N/A |
| 192344 | - | Built environment resource consisting of the Los Angeles Port Embarkation Station Hospital. | 2016 | 3B |

Notes:

*Resources within the city boundaries

3B: Appears eligible for National Register (NR) both individually and as a contributor to a NR eligible district through survey evaluation.

6Y: Determined ineligible for NR by consensus through Section 106 process – Not evaluated for California Register (CR) or local listing.

2S2: Individual property determined eligible for NR by a consensus through Section 106 process. Listed in the CR.

6Z: Found ineligible for NR, CR or local designation through survey evaluation.

Source: SCCIC, 2017

recorded, 22 are located within the City Limits. These 22 resources consist of six prehistoric archaeological sites, one protohistoric archaeological site, seven historic-period archaeological sites, seven built environment resources, and one California Historical Landmark.

The Sacred Lands File (SLF) records search revealed that no known Native American resources from the NAHC database have been recorded within the city; however, the NAHC noted "that the absence of specific site information in the SLF does not indicate the absence of Native American cultural resources in any Area of Potential Effect (APE)."²¹

PALEONTOLOGICAL RESOURCES

The results of the paleontological records search indicated that seven vertebrate localities (LACM 1165, 1643, 1919, 3319, 4129, 3823 and 3085) from older Quaternary deposits are located within the boundaries of the city and that several other localities from the same sedimentary deposits occur nearby. Old lagoonal deposits (from the Dominguez Channel) are located at the surface in the northwestern portion of the city. In the central and eastern portions of the city there are surface deposits composed of younger Quaternary alluvium. Otherwise, surface deposits in the city (including the elevated terrain of the Dominguez Hill) consist of older Quaternary Alluvium. The younger Quaternary deposits are not known for being fossiliferous in the uppermost layers; however, at depth these deposits are underlain by older Quaternary deposits, which have produced an assortment of vertebrate fossil localities.²²

LACM 1643 located in the northern portion of the city (near the intersection of 190th Street and Annalee Avenue) yielded a fossil specimen of mammoth at a depth of 8 to 10 feet below the surface. LACM 1919 located in the central-southern portion of the city (south of 223rd Street and west of Wilmington Avenue) yielded a fossil specimen of mammoth at 10 feet below the surface. LACM 1165,

3319 and 4129 located along the southeastern portion of the city (and east of LACM 1919) yielded a fossil specimen of mammoth at 30 feet below surface. LACM 3823 located in the southwestern portion of the city yielded a specimen of fossil camel at 12 to 14 feet below street level. Lastly, LACM 3085 (probably from the marine late Pleistocene San Pedro Sand) located in the southwestern portion of the city produced fossil specimens of ray and dolphin at an unknown depth.²³

The National History Museum of Los Angeles County (NHMLAC) has indicated that grading or shallow excavations in the upper feet of the old lagoonal deposits or the younger Quaternary Alluvium deposits are unlikely to uncover fossil vertebrate remains. However, deeper excavations in the city reaching down into older Quaternary deposits, as well as excavations in older Quaternary deposits found at the surface have the potential for producing vertebrate fossils. As a result, the NHMLAC recommends that any substantial excavations in the city should be monitored by a qualified paleontologist.²⁴

²³ Ibid.

²⁴ Ibid.

²¹ Totton, Gayle. 2017. Sacred Lands File search results for the Proposed Carson General Plan Update Project, City of Carson; Carson, Long Beach, and South Gate USGS Quadrangles, Los Angeles County, California.

²² McLeod, Samuel. 2017. Paleontological Records Check for the proposed Carson General Plan Update Project, in the City of Carson, Los Angeles County, project area.





8.5 Water Quality

Protecting ground and surface water quality is key to a healthy community and is vital to both plant, animal, and human habitats. Water is essential to the development of housing, commerce, industry, and agriculture, provides recreational opportunities, and supports healthy fish and wildlife habitats. The Dominguez Channel and Compton Creek are the major water resources in the Planning Area.

Ground and surface water quality protection is a multi-jurisdictional effort, engaging with various local, county, State, and federal agencies, including monitoring and protection efforts from the Los Angeles Regional Water Quality Control Board (RWQCB). Another important program that helps regulate water quality is National Pollutant Discharge Elimination System (NPDES) Permit Program which regulates the discharge of pollutants—such as rock, sand, dirt, and agricultural, industrial, and municipal waste—from point sources into waterways.

GROUNDWATER

Carson is located within the West Coast sub-basin of the Los Angeles Coast Groundwater Basin, which is characterized by Quaternary-age sediments deposited from erosion of nearby hills and mountains as well as beaches and shallow ocean floors that covered the area in the past. The underlying Pliocene Pico Formation basement rocks generally do not provide sufficient quantities of groundwater, and the Newport-Inglewood fault zone that passes through the north-central portion of the City of Carson is a major water barrier that separates the Central and West Coast sub-basins of the Los Angeles Coastal Plain. Groundwater recharge in the West Coast Basin is done primarily through injection wells, while the Rio Hondo and San Gabriel rivers recharge the Central Basin. These two sub-basins together supply over 40 percent of the water used by the Los Angeles region.²⁵

²⁵ Water Replenishment District of Southern California, 2020. Regional Groundwater Monitoring Report Water Year 2019-2020. Online. https://www.wrd.org/sites/pr/files/2020%20RGWMR%20Final_2.pdf. Accessed June 2021.

The West Coast Basin covers approximately 160 square miles and extends southwesterly along the coast from the Newport-Inglewood Uplift to the Santa Monica Bay. The basin provides groundwater to eleven cities and unincorporated areas in Los Angeles County. In 1961, the basin was adjudicated (i.e., the amount to be extracted each year has been determined by a court decision), which limits the amount of water that can be withdrawn to prevent seawater intrusion and unhealthy groundwater levels. Aquifers in the West Coast Basin are generally confined and receive most of their natural recharge from adjacent groundwater basins or from the Pacific Ocean (seawater intrusion). Groundwater flows within the city generally in a southwest direction. The basin has an annual average production of approximately 52,000 acre-feet (AF) per year, which accounts for about 20 percent of total retail demand.²⁶

Several aquifers occur within the vicinity of the City of Carson, including the deeper Lynwood, Silverado, and Sunnyside aquifers of the lower Pleistocene San Pedro Formation. Other shallower aquifers, which locally produce potable water, include the Gage and Gardena aquifers of the upper Pleistocene Lakewood Formation. The Silverado Aquifer is typically the main producing aquifer in the West Coast Basin, followed by the Lynwood and Sunnyside aquifers.²⁷

The Water Replenishment District (WRD) annually analyzes its monitoring well network to test for more than 100 water quality constituents, focusing on 11 key constituents that represent overall groundwater quality in the basins: total dissolved solids (TDS), iron, manganese, chloride, nitrate, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, hexavalent chromium, and 1,4-dioxane. Since 2018, WRD has also completed a District-wide assessment for presence of per fluoroalkyl and polyfluoroalkyl substance (PFAS) constituents, which are also included in their water quality reports. Overall, groundwater in the Los Angeles Coast Basin continues to be of high quality that is suitable for potable and non-potable uses, with only some areas facing poor water quality due to natural or anthropogenic sources that WRD monitors.²⁸

26 West Basin Municipal Water District, 2020. West Coast Groundwater Basin. Online. <https://www.westbasin.org/water-supplies/groundwater/west-coast-groundwater-basin/>. Accessed June 2021.

27 Water Replenishment District of Southern California, 2020. Regional Groundwater Monitoring Report Water Year 2019-2020.

28 Ibid.

SURFACE WATER

The 2014-2016 Clean Water Act Section 303(d) List of Impaired Waters, approved by the United States Environmental Protection Agency (US EPA) in 2018 and current as of 2021, is a combined list of all water quality limited segments (WQLSs) and associated pollutants identified by the SWRCB as requiring a total maximum daily load (TMDL) under Section 303(d). There are 128 water bodies in Los Angeles County on this list; of these, Dominguez Channel is the only water body located within the City of Carson. TMDLs, or the maximum amount of a pollutant that a water body can receive and still safely meet water-quality standards, have been developed for the Dominguez Channel, which is impaired by pollutants due to the watershed's large, dense population and the amount of impervious ground surfaces. Pollutants present in the parts of the Dominguez Channel within City Limits that require a TMDL or have completed a TMDL approved by the US EPA include:

- Benthic Community Effects;
- Fecal Indicator Bacteria;
- Metals/Metalloids: Copper, Lead;
- Organics: Benzo(a)anthracene, Benzo(a)pyrene (3,4-Benzopyrene -7-d), Chrysene (C1-C4), Polychlorinated biphenyls (PCBs), Phenanthrene, Pyrene;
- Pesticides: Chlordane (tissue), DDT (tissue and sediment), Dieldrin (tissue); and
- Toxicity.

Only Fecal Indicator Bacteria still requires a TMDL; the other pollutants are being addressed by an established and approved TMDL.





8.6 Utilities

Carson is characterized as a dry-summer, Mediterranean climate that is like the Los Angeles Basin but slightly cooler due to proximity to the Pacific Ocean. However, with changing climate and increasing frequency and severity of extreme heat, wildfire, and drought events throughout the county and California as a whole, managing water resources effectively and planning for resilient systems are particularly critical. This section covers important aspects to wet utilities—including water supply, wastewater, stormwater, flooding, and water conservation—and dry utilities within Carson.

The City’s water supply and infrastructure planning are covered within Urban Water Management Plans (UWMP) that are created by individual water districts and depend on service boundaries. Carson is within two water districts, California Water Service Company’s Rancho Dominguez District and the Golden State Water Company, both of which have UWMPs that cover portions of the city. In addition, Carson is also a part of the West Basin Metropolitan Water District (MWD) which also has its own UWMP. These documents are updated every five years on behalf of the water provider.

WATER SUPPLY AND DEMAND

Carson’s water supply comes from the Metropolitan Water District (MWD), the California Water Service Company’s (Cal Water) Dominguez District, and the Golden State Water Company (GSW). Cal Water serves most of Carson through a combination of local groundwater and surface water purchased from MWD, which is imported from the Colorado River and the State Water Project in northern California. The Cal Water Dominguez water system includes 374 miles of pipeline, nine active wells, 12 storage tanks and seven MWD connections.²⁹ GSW serves portions of Carson, primarily the northwest corner. They provide a blend of groundwater from the West Coast and Central groundwater basins and imported water from the California River Aqueduct and State Water Project imported from MWD.³⁰

29 California Water Services, 2021. Rancho Dominguez District Information. Online. <https://www.calwater.com/about/district-information/rd/>. Accessed June 2021

30 Golden State Water Company, 2020. Southwest Water System Consumer Confidence Report on Water Quality for 2020. Online. <https://www.gswater.com/sites/main/files/file-attachments/water-quality-southwest.pdf?1622073098>. Accessed June 2021.

TABLE 8-3: CALIFORNIA WATER SERVICE DOMINGUEZ DISTRICT TOTAL RETAIL WATER DEMAND

| Use Typew | Projected Water Use (AF) | | | | |
|--------------------------|--------------------------|---------------|---------------|---------------|---------------|
| | 2025 | 2030 | 2035 | 2040 | 2045 |
| Single Family | 8,298 | 8,281 | 8,353 | 8,414 | 8,551 |
| Multi-Family | 2,477 | 2,466 | 2,482 | 2,502 | 2,533 |
| Commercial | 5,548 | 5,417 | 5,356 | 5,311 | 5,275 |
| Industrial | 9,350 | 9,350 | 9,350 | 9,350 | 9,350 |
| Institutional/Government | 1,064 | 1,045 | 1,037 | 1,030 | 1,024 |
| Other Potable | 21 | 21 | 21 | 21 | 21 |
| Losses | 1,613 | 1,528 | 1,550 | 1,573 | 1,595 |
| Total | 28,371 | 28,110 | 28,149 | 28,200 | 28,349 |

Notes:

1. Volume of potable demands are net of indirect potable reuse for groundwater recharge.

Source: California Water Service, 2021.

As required under the Urban Water Management Planning Act and amended by the Water Conservation Act of 2009, SB X7-7, and the 2018 Water Conservation Legislation (SB 606 and AB 1668), water suppliers must create Urban Water Management Plans (UWMPs) that are long-range plans for water supply and system planning (including for water conservation and climate resilience) and are updated every five years, most recently for 2020. The Cal Water Dominguez District's 2020 UWMP reports on historical and projected water demands, water supplies, supply reliability and potential vulnerabilities, water shortage contingency planning, and demand management programs. Table 8-3 shows Cal Water's projected demands for potable and non-potable water use within the Dominguez District. In general, forecasts show a modest increase in demand proportional with population growth, though a small amount of water conservation reduction has also been accounted for to reflect improved plumbing and design standards.

As a wholesale water supplier, Cal Water is not required to establish and meet baselines and targets for daily per capita water use. However, they can support retail water suppliers by adopting policies and programs that encourage demand reduction in their areas. The Dominguez District has coordinated its demand reduction policies and programs with the West Basin and Central Basin municipal water districts.

WASTEWATER

In 2006, the SWRCB adopted Statewide General Waste Discharge Requirements (WDRs) and a Monitoring and Reporting Program for sanitary sewer systems in response to growing public concern about the water quality impacts of sanitary sewer overflows (SSOs), particularly those that cause beach closures, adversely affect other bodies of water, or pose serious health and safety or nuisance problems. In compliance with the requirements of the WDRs, the City of Carson prepared its Sewer System Management Plan (SSMP), which was last updated in 2015.

The City's Public Works Department manages the sanitary sewer collection system, which consists of 181.73 miles of gravity sewer lines and three pump stations operated and maintained by the County of Los Angeles Consolidated Sewer Management District (CSMD). The City's local sewers discharge into the Sanitation Districts of Los Angeles County facilities for conveyance, treatment, and disposal.

According to the 2018 SSMP Audit, Carson has not experienced SSOs since the last audit was performed in 2015. During this period, approximately 9,000 feet of defective sewer pipes were identified and rehabilitated using pipe lining material, and several pump station repair/upgrade projects were completed. There were no sewer-capacity issues identified in the City's system during this audit peri-

od, and CSMD and the City have maintained a Very Good to Excellent rating in the overall effectiveness rating of the certified SSMP. Recertification of the SSMP was due in 2020 but has not yet occurred to date. However, a comprehensive, citywide sewer and storm drain line evaluation has been proposed as a project component of the City Utilities Master Plan, identified in the City's 5-Year Capital Improvement Program (CIP) for the fiscal years 2021-2026, to determine capacity for future development.³¹

Wastewater is treated at the Joint Water Pollution Control Plant, which is located in Carson and operated by the Los Angeles County Sanitation Districts. The plant treats an average of 260 million gallons of wastewater per day, with a design capacity of 400 million gallons per day, and serves over 4.8 million residents, businesses, and industries. The treatment process allows the plant to be energy self-sufficient: All solids from the Joint Outfall System are processed and anaerobically digested to produce methane gas, which is burned in the Total Energy Facility to produce enough electrical power to run the entire plant. After treatment, the effluent (wastewater) is chlorinated and discharged through two ocean outfalls a mile and a half offshore.³²

31 City of Carson Public Works Department, Overview and Capital Improvement Projects: Effective Dates: July 1, 2021 – June 30, 2022, <https://ci.carson.ca.us/content/files/pdfs/publicworks/Public%20Works%205%20Year%20CIP%20Summary%20FY%2021-26.pdf>, accessed April 20, 2022.

32 Los Angeles County Sanitation Districts, 2021. Wastewater Treatment Process at the JWPCP. Online. <https://www.lacsd.org/services/wastewater/wwfacilities/wwtreatmentplant/jwpcp/wwtreatmentprocessjwpcp.asp>. Accessed June 2021.

STORMWATER

The Los Angeles County Department of Public Works is the agency responsible for flood control protection within Los Angeles County. Drainage in the City of Carson includes storm drains that lead to the various flood control channels, including the Dominguez Channel, Torrance Lateral, Wilmington Drain, McKinley Avenue Drain, Del Amo Channel, and Compton Creek,³³ which are used exclusively for flood control and storm runoff.

Stormwater runoff within the Planning Area is typical of urbanized areas and includes pollutants from motor vehicles and other transportation related uses (parking lots), including hydrocarbons, oil, grease, sediment and heavy metals. Pollutants associated with landscape maintenance are also likely to be present in stormwater runoff such as nutrients from fertilizers and herbicides and pesticides. Other typical pollutants such as trash and fecal coliform bacteria may also be present in stormwater runoff from land uses similar to those within the city. In 2015, the City of Carson entered through an addendum into the Enhanced Watershed Management Program for the Dominguez Channel Watershed Management Area Group (DC EWMP) with the cities of Los Angeles, El Segundo, Hawthorne, Inglewood, and Lomita and the County of Los Angeles and the Los Angeles County Flood Control District (LACFCD). The DC EWMP identifies Watershed Control Measures, which are strategies, institutional measures, and best management practices that will be implemented through the DC EWMP individually or collectively at a watershed-scale to address Water Quality Priorities.

WATER CONSERVATION STRATEGIES

The City partners with the West Basin Municipal Water District to encourage residents to conserve water through programs such as the Water for Tomorrow Program, which seeks to protect the district's existing water supply as well as diversify and augment its sources. The program also has educational and outreach components including the Catch the Rain and Water Savings program that offers free rain barrels to help conserve water by reducing stormwater

33 County of Los Angeles Department of Public Works, 2017. Los Angeles County Storm Drain System. Online. <http://dpw.lacounty.gov/fcd/stormdrain/index.cfm>. Accessed December 2017.

loads and reusing the rainwater efficiently in addition to plant fairs and free children's workshops that also provide incentives for West Basin residents to contribute to water conservation.

Carson also requires projects to comply with CARSON-SCAPE, the City's Model Water Efficient Landscape Ordinance (MWELO), which promotes the values and benefits of landscaping practices that integrate conservation and efficient use of water through planning, design, installation, maintenance, and management of water-efficient landscapes in new construction and rehabilitated projects.

Water providers in Carson such as Cal Water also promote water conservation through rebates, conservation kits (which include high-efficiency showerheads, hose nozzles, faucet aerators, and toilet leak tablets), the Smart Landscape Tune-Up Program, and the H2O Challenge educational program.

REGIONAL RECYCLED WATER PROGRAM

The Regional Recycled Water Program (RRWP), a partnership with the Los Angeles County Sanitation Districts, seeks to purify wastewater to produce high quality water that could be used again.³⁴ The RRWP would produce up to 150 million gallons per day of purified water from the Joint Water Pollution Control Plant in Carson for groundwater replenishment, industrial use, and potentially raw water augmentation. The agencies have been working together for over 10 years on the program.

As a first step toward full implementation, Metropolitan and the Sanitation Districts cooperated to complete the Advanced Purification Center in 2019. The Advanced Purification Center, which is located at 24501 South Figueroa Street in Carson, is a 0.5 million gallon per day demonstration facility that will generate information needed for the potential future construction of a full-scale recycled water facility. It uses a unique application of membrane bioreactors designed to significantly increase efficiency in

water recycling. Scientists and engineers will test the process, utilizing full-scale treatment modules, to ensure the resulting purified water meets the highest water quality standards. Once approved by regulators, this innovative process could be used throughout California and even applied around the globe.

Metropolitan and the Sanitation Districts are continuing to move forward with the program, to enhance their partnership and begin the next phase of the program. Metropolitan's Board approved proceeding with the environmental planning phase of the project in November 2020.

DRY UTILITIES

Carson is part of the 50,000-square-mile Southern California Edison (SCE) Service Area for electric utilities. The SCE grid is powered by a mix of different energy sources, the largest proportion of which comes from eligible renewable resources including solar, wind, geothermal, eligible hydroelectric, and biomass/biowaste. The second largest contributing category is unspecified sources of power which includes electricity that has been purchased through open market transactions and is not traceable to a specific generation source. Natural gas, nuclear, and large hydroelectric are other significant energy resources.³⁵

The total electric usage in 2020 for the five zip codes in Carson—90220, 90248, 90745, 90746, and 90810—was about 1.3 billion kilowatt-hours (kWh), of which commercial and industrial customers were the largest users (43 and 35 percent, respectively). Industrial customers had the highest monthly average of electric usage (about 821,950 kWh) than any other category, and commercial customers had an average of about 6,140 kWh. Residential customers account for about 20 percent of the city's energy usage and have an average of about 480 kWh per month.³⁶

35 Southern California Edison, 2020. 2019 Power Content Label. Online. https://www.sce.com/sites/default/files/inline-files/SCE_2019PowerContentLabel.pdf. Accessed June 2021.

36 Southern California Edison, 2020. Quarterly Customer Data Reports, Electric Usage by Zip Code, 2020. <https://www.sce.com/regulatory/energy-data---reports-and-compliances>. Accessed June 2021.

The Metropolitan Water District of Southern California, 2021. 2020 Urban Water Management Plan. Online. <https://www.mwdh2o.com/media/21641/2020-urban-water-management-plan-june-2021.pdf>. Accessed August 2021. 34

Although wildfire hazard safety concerns and extreme heat days have led to power outages or service reductions in past years, SCE is dedicated to maintaining a high level of reliability through demand-response programs and energy efficiency programs. These conservation strategies, in combination with SCE’s continued advances in technology and renewable sources ensure safe, quality services in the SCE service area.

Gas-only utilities in Carson are provided by the Southern California Gas (SoCalGas) Company. SoCalGas is the principal distributor of natural gas in Southern California and serves residential, commercial, and industrial markets. Gas supply comes from several sedimentary basins in the western U.S. and Canada which are stored in four natural gas storage facilities throughout Southern California that are owned and operated by SoCalGas.

In 2019, residential demand for gas totaled 237.5 Bcf in the SoCalGas service area, servicing 5.61 million active meters. On average, single-family customers used about 468 therms per meter, and multi-family customers used 292 therms. Commercial market demand totaled 101.1 Bcf, of which restaurant businesses are the largest category (24.5 percent), followed by health services (12.4 percent). Industrial demand was 164.0 Bcf. Based on the 2020 California Gas Report, SoCalGas projects total gas demand to decline one percent annually from 2020-2035 due to modest economic growth, State energy efficiency standards and programs, renewable electricity goals, decline in core commercial and industrial demand, and other regulatory factors. Overall, all markets are projected to decline in demand, despite modest growth in meters.³⁷

37 Southern California Gas Company, 2020. 2020 California Gas Report. https://www.socalgas.com/sites/default/files/2020-10/2020_California_Gas_Report_Joint_Utility_Biennial_Comprehensive_Filing.pdf. Accessed June 2021.

8.7 Solid Waste and Recycling

Residential solid waste collection in Carson is provided by Waste Resources. Waste Resources is a private hauler servicing commercial businesses and residents that collects construction and demolition waste, trash, recycling, and green waste on a weekly basis, as well as bulky items, used motor oil and filters, manure, and sharp items upon request. Planning Area residents are encouraged to drop off hazardous household waste at a collection center operated by the City of Los Angeles in San Pedro. The City of Carson also offers senior citizens meeting certain criteria discounts for trash collection services. Commercial recycling is provided by EDCO Disposal and Waste Management Services on a weekly basis. Both companies offer recycling, hazardous waste, and bulky item disposal services for large amounts of waste. Carson does not have a composting ordinance in its Municipal Code, but it does discuss solid waste and recyclable materials in Article V Chapter 2.





In 2020, about 38 percent went to H.M. Holloway Inc. Landfill in Lost Hills, about 29 percent of Carson's solid waste went to the El Sobrante Landfill in Corona, 21 percent went to Chiquita Canyon Sanitary Landfill in Castaic, and the remaining 12 percent went to 17 other landfills throughout the Los Angeles area.³⁸ According to CalRecycle, the H.M. Holloway Inc. Landfill has a remaining capacity of about 7 million tons and is expected to remain in operation until 2030. The El Sobrante Landfill has a remaining capacity of about 144 million tons, and it is expected to remain in operation until 2051. The Chiquita Canyon Sanitary Landfill has a remaining capacity of 60 million tons and is expected remain in operation until 2047.³⁹ In 2019, the most recent year data was available, Carson disposed about 14.1 pounds per resident per day (PPD) of waste to landfills. Although the annual per capital disposal rate has been increasing since 2014, both the per resident and per employee disposal rates are less than their respective targets calculated by CalRecycle (19.3 and 37.3, respectively, as of June 2021).⁴⁰

38 CalRecycle, 2021. Jurisdiction Disposal By Facility. Online. <https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility>. Accessed June 2021.

39 CalRecycle Solid Waste Information System, 2014. SWIS Facility/Site Activity. Online. <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details>. Accessed June 2021.

40 CalRecycle, 2021. Jurisdiction Diversion/Disposal Rate Summary, 2007-Current. Online. <https://www2.calrecycle.ca.gov/LGCentral/DiversionProgram/JurisdictionDiversionPost2006>. Accessed June 2021.

8.8 Air Quality

The City of Carson is located within the South Coast Air Basin (Basin), which includes Orange and Los Angeles counties, in addition to parts of San Bernardino and Riverside counties. The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency that regulates air quality standards within the Air Basin through air quality management plans (AQMPs). California Air Resources Board (CARB) also coordinates air quality monitoring and implementation of air pollution reduction actions and strategies with SCAQMD, including the Community Air Protection Program (CAPP) established by Assembly Bill (AB) 617. More information about AB 617 and its impacts on the Planning Area are detailed below. Additional information regarding air quality, including its impact on vulnerable communities, is addressed in Chapter 6: Community Health and Environmental Justice.

GEOGRAPHICAL CONTEXT

The Basin is an approximately 6,745-square-mile area, topographically bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The terrain and geographical location determine the distinctive climate of the Basin: It lies in the semi-permanent high-pressure zone of the eastern Pacific Ocean, which usually provides a mild climatological pattern, interrupted by periods of hot temperatures, winter storms, or Santa Ana winds. The extent and severity of pollutant concentrations in the Basin is a function of the area's natural physical characteristics

(weather and topography) and man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the Air Basin, making it an area of high pollution potential.

The Basin’s meteorological conditions, in combination with regional topography, are conducive to the formation and retention of ozone, which is a secondary pollutant that forms through photochemical reactions in the atmosphere. Thus, the greatest air pollution impacts throughout the Basin typically occur from June through September. This condition is generally attributed to the emissions occurring in the Basin, light winds, and shallow vertical atmospheric mixing. These factors reduce the potential for pollutant dispersion causing elevated air pollutant levels. Pollutant concentrations in the Basin vary with location, season, and time of day. Concentrations of ozone, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the Basin and adjacent desert.

CRITERIA POLLUTANTS

Certain air pollutants have been designated as “criteria” air pollutants because they are common and widely distributed, and they are known to have adverse human health effects and/or cause adverse impacts to the environment either directly or through reactions with other pollutants. Criteria air pollutants indicators of ambient air quality include: ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), respirable or breathable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM10), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM2.5), and lead. The criteria pollutants are regulated by the US EPA at the national level and by the California Air Resources Board (CARB) at the state level, and they are subject to respective ambient air quality standards (AAQS) adopted by both agencies. Areas or basins in which air pollutant concentrations exceed national or State AAQS are classified as nonattainment for that specific pollutant.

The SCAQMD maintains a network of air quality monitoring stations located throughout the Basin to measure ambient pollutant concentrations. The monitoring station most representative of the City of Carson is the South Los Angeles County Coastal Monitoring Station 033 in the City of Long Beach. Criteria Pollutants monitored at this station include ozone, NO2, SO2, CO, and PM10. The South Los Angeles County Coastal Monitoring Station 077 in south Long Beach collects data for PM2.5 and lead. The most recent data available from the SCAQMD for these monitoring stations are from 2020.⁴¹

The South Coast Air Basin is an area designated as non-attainment because it does not currently meet NAAQS for certain pollutants regulated under the Clean Air Act, as seen in Table 8-4. The Basin previously exceeded the NAAQS for PM10 but has met effective July 26, 2013.⁴² The Basin does not meet the NAAQS for O3 and PM2.5 and is classified as being in nonattainment for these pollutants. The Los Angeles County portion of the Basin is designated as non-attainment for the lead NAAQS; however, this was due to localized emissions from two previously operating lead-acid battery recycling facilities located in the City of Vernon and the City of Industry.⁴³ These facilities are no longer operating and would not affect the Planning Area.

In addition to federally identified pollutants, the State AAQS identifies additional criteria pollutants which are listed in Table 8-4. The Basin meets standards for sulfates, hydrogen sulfide, and vinyl chloride pollutants and is classified as being in attainment. Visibility reducing particles is currently unclassified for the Basin.

41 South Coast Air Quality Management District, Historical Data by Year. Online. <http://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year>. Accessed June 2021.

42 Federal Register, Vol. 78, No. 123, June 26, 2013, 38223-38226.

43 South Coast Air Quality Management District, Board Meeting, Agenda No. 30, Adopt the 2012 Lead State Implementation Plan for Los Angeles County, May 2012.

TABLE 8-4: SOUTH COAST AIR BASIN ATTAINMENT STATUS (LOS ANGELES COUNTY)

| <i>Pollutant</i> | <i>National Standards</i> | <i>California Standards</i> |
|-------------------------------|--------------------------------------|-----------------------------|
| Ozone (1-hour standard) | N/A ¹ | Nonattainment |
| Ozone (8-hour standard) | Nonattainment – Extreme ² | Nonattainment |
| Carbon Monoxide | N/A ¹ | Attainment |
| Nitrogen Dioxide | N/A ¹ | Attainment |
| Sulfur Dioxide | Attainment | Attainment |
| PM10 | Attainment | Nonattainment |
| PM2.5 | Nonattainment – Serious | Nonattainment |
| Lead | Nonattainment (Partial) ³ | Attainment |
| Visibility Reducing Particles | N/A | Unclassified |
| Sulfates | N/A | Attainment |
| Hydrogen Sulfide | N/A | Attainment |
| Vinyl Chloride | N/A | Attainment |

Notes:

N/A = not applicable

1. The NAAQS for 1-hour ozone was revoked in 2005. NO₂ and CO nonattainment areas are maintenance areas as of 2010.
2. While listed, the NAAQS for 8-hour ozone was revoked in 2015.
3. Partial Nonattainment designation – Los Angeles County portion of the Air Basin only for near-source monitors.

Source: United States Environmental Protection Agency, *The Green Book: Criteria Pollutant Nonattainment Summary Report, 2021*. California Air Resources Board, *Area Designations for State Ambient Air Quality Standards, 2019*.

INVENTORY AND SOURCES OF CRITERIA AIR POLLUTANT EMISSIONS

The main focus of the 2016 AQMP is to bring the basin into attainment with NAAQS for 24-hour PM_{2.5} and 1- and 8-hour ozone by partnering with CARB and US EPA to reduce emissions from mobile sources, which are the primary contributors to air quality challenges in the basin. The plan encourages accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies and also includes transportation control measures from the 2016 Regional Transportation Plan/Sustainable Communities Strategy developed by the Southern California Association of Governments (SCAG).

The 2022 AQMP update is underway and will be developed with the intention to meet the recently updated NAAQS for ground-level ozone by 2037.

The SCAQMD prepares emissions inventories for regulatory and SIP performance tracking as well as for the AQMP. These estimates include stationary sources (e.g., generators, boilers, industrial sources) and mobile sources (e.g., transportation). Stationary sources are further subdivided into area sources (e.g., landscaping, consumer products, fugitive emissions, and construction-related sources) and point sources. The latest emissions inventory for the South Coast Air Basin was prepared in 2018.

Point sources are permitted facilities with one or more emission sources at an identified location (e.g., power plants, refineries). These facilities generally have annual emissions of four tons or more of either VOC, NO_x, SO_x, or total PM, or annual emissions of over 100 tons

of CO. Facilities are required to report their criteria pollutant emissions pursuant to Rule 301 and selected air toxics to SCAQMD on an annual basis. Stationary sources of criteria pollutants include commercial and light industrial uses. Such sources may include emergency backup generators, large boilers, and other point sources that require permitting from SCAQMD. According to SCAQMD's Facility Information Detail (FIND) database, there are 746 active permitted facilities within the City of Carson as of June 2021.⁴⁴

Mobile, or transportation, sources are typically the largest contributors to criteria pollutants within Southern California and include passenger vehicles, trucks, buses, motorcycles, aircraft, trains and boats. Major freeways including I-405, I-91, and I-110 pass through or run adjacent to the city. Carson also contains high volume arterial roadways such as Main Street, Avalon Boulevard, Del Amo Boulevard, Carson Street, 223rd Street, and Sepulveda Boulevard, and has significant freight and trucking operations. Other sources of transportation emissions sources include mass transit buses operated by Los Angeles County Metropolitan Transportation Authority (MTA) and the Carson Circuit and other buses travelling throughout the city.

TOXIC AIR CONTAMINANTS

The emission of toxic substances into the air can be damaging to human health and to the environment. Human exposure to these pollutants at sufficient concentrations and durations can result in cancer, poisoning, and rapid onset of sickness, such as nausea or difficulty in breathing, in addition to less measurable effects include immunological, neurological, reproductive, developmental, and respiratory problems. Pollutants deposited onto soil or into lakes and streams affect ecological systems and eventually human health through consumption of contaminated food. The carcinogenic potential of toxic air contaminants (TACs) is a particular public health concern because many scientists currently believe that there is no "safe" level of exposure to carcinogens; any exposure to a carcinogen poses some risk of contracting cancer.

TACs are generally defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. The California Office of Environmental Health Hazard Assessment (OEHHA) identifies specific TACs. Many factors—such as the amount of the chemical, its toxicity, and how it is released into the air, the weather, and the terrain—influence whether the emission could be hazardous to human health. TACs are emitted by a variety of industrial processes such as petroleum refining, electric utility and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust and may exist as PM10 and PM2.5 or as vapors (gases). TACS are also emitted during construction projects due to diesel particulate matter emissions associated with heavy-duty equipment. TACs include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources.

To date, the most comprehensive study on air toxics in the Basin is the Multiple Air Toxics Exposure Study (MATES), conducted by the SCAQMD. The most recent release is MATES V, which focuses on measurements from 2018 through 2019 and uses comprehensive modeling analysis and emissions inventory based on 2018 data. The study found that the levels of air toxics have continued to decline over time, with the air toxics cancer risk at the ten MATES V monitoring locations ranging from 239 to 462 per million. Diesel particulate matter is the largest contributor to overall air toxics cancer risk; however, the average levels of diesel particulate matter are 50 percent lower than was found in the previous MATES IV study.⁴⁵ Reductions in air toxics are attributed largely to air quality control regulations and improved emission control technologies.

The MATES study also includes a series of maps that show regional trends in estimated outdoor inhalation cancer risk from toxic emissions as part of an ongoing effort to provide insight into relative risks. The estimated cancer risk within the Basin is approximately 424 cancers per million (53 percent less than in MATES IV). In comparison,

44 South Coast Air Quality Management District, Facility Information Detail (FIND). Online. <http://www3.aqmd.gov/webappl/fim/prog/searchresults.aspx>. Accessed June 2021.

45 South Coast Air Quality Management District, Draft MATES V Report Executive Summary, 2021. Online. http://www.aqmd.gov/docs/default-source/planning/mates-v/draft-mates-v-executive-summary_v2.pdf?sfvrsn=6. Accessed June 2021.

the Wilmington-Carson-West Long Beach community is higher, with 612 per million.⁴⁶ Generally, the risk from air toxics is lower near the coastline: it increases inland, with higher risks concentrated near large diesel sources (e.g., freeways, airports, and ports).

SENSITIVE LAND USES

Certain population groups, such as children, elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases), are considered more sensitive to the potential effects of air pollution than others. Sensitive land uses would include areas where these populations tend to spend a majority of their time, such as residential, recreational, and educational areas. The southwestern, central, and eastern portions of the City of Carson consist of residential zoning, which are considered sensitive land uses for the purposes of air quality. Within the City of Carson, the Los Angeles Unified School District (South District) and Compton Unified School District are responsible for operating public schools within the city. These schools are considered sensitive uses in addition to the number of private schools and day care centers. Additionally, there are a variety of senior care and assisted living establishments within the city that are also considered sensitive uses.

COMMUNITY AIR PROTECTION PROGRAM (ASSEMBLY BILL 617)

In response to Assembly Bill (AB) 617, CARB established the Community Air Protection Program (CAPP), which seeks to reduce air pollution in communities that experience disproportionate burdens by measuring air pollution and reducing associated health impacts. Carson is part of the Wilmington-Carson-West Long Beach community, which is one of six communities in the air district that was designated in 2018 (also referred to as “first year” communities) for development of Community Air Monitoring and Emissions Reduction plans.

46 South Coast Air Quality Management District, Draft MATES V Report Chapter 4: Regional Modeling and Evaluation, 2021. Online. <http://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-chapter-4---15april-345pm---footnote-version.pdf?sfvrsn=8>. Accessed June 2021.

Following extensive community outreach and guidance by the Community Steering Committee (CSC), six priority air pollution concerns were identified: Refineries; Ports; Neighborhood Truck Traffic; Oil Drilling and Production; Railyards; and Schools, Childcare Centers, and Homes. There are 18 actions and 43 goals pertaining to these priorities that seek to reduce air pollution from local sources in the Wilmington-Carson-West Long Beach community. Emissions reduction targets are seven percent for Nitrogen Oxide and 10 percent for Diesel particulate matter by 2024 and 35 percent for Nitrogen Oxide and 22 percent for Diesel particulate matter by 2030. Actions to achieve these goals include:

- Reducing nitrogen oxides, sulfur oxides, and volatile organic compounds from refineries by 50 percent;
- Using advanced monitoring at ports and oil production facilities;
- Conducting focused enforcement on truck idling; and
- Developing Indirect Source Rules for rail yards and warehouses.⁴⁷

Disproportionate burden and health impacts related to air pollution in disadvantaged communities are also covered in Chapter 6: Community Health and Environmental Justice.

SCAQMD RULE BOOK (RULE 2305)

The SCAQMD has a legal obligation to enforce air pollution regulations to ensure that the surrounding or ambient air meets federal and State air quality standards. The SCAQMD also has broad authority to regulate toxic and hazardous air emissions, and these regulations are enforced in the same manner as those which pertain to the AAQS. The SCAQMD has a series of rules, known as the Rule Book, to assist with compliance and regulation. In May 2021, the SCAQMD approved a new indirect source rule, Rule 2305 and accompanying Rule 316, which attempt to reduce nitrogen oxide (NO_x) and diesel emissions by regulating warehouses as “indirect” sources of emissions.

Rule 2305 seeks to collect revenue from distribution and

47 South Coast Air Quality Management District, Annual Report, 2019. Online. <http://www.aqmd.gov/docs/default-source/annual-reports/2019-annual-report.pdf?sfvrsn=9>. Accessed June 2021.

fulfillment warehouses at least 100,000 square feet in size unless those facilities are able to earn “points” by attracting a sufficient number of zero-emission (ZE) and near-zero emission (NZE) trucks to their facilities, making substantial investments in new ZE and NZE on-site equipment and charging infrastructure, and/or installing solar panels. Rule 2305 aims to reduce NOx emissions and diesel particulate matter (DPM) in the Basin by up to 15 percent over the next three years. The companion Rule 316 requires warehouse owners and operators that fail to meet the minimum points criteria to pay “mitigation fees” that purport to reimburse SCAQMD for administrative costs associated with ensuring compliance with Rule 2305. As warehousing is a large industry in Carson and the resulting truck exhaust generates DPM, Rule 2305 could impact these industries and potentially improve air quality.

8.9 Greenhouse Gas Reduction and Climate Change Adaptation

Climate change refers to a change in global and regional weather patterns, particularly the change apparent from the mid-to-late 20th century to present day. This recent change is primarily attributed to an increase in the amount of greenhouse gases (GHGs) that trap heat in the Earth’s atmosphere caused by rapid industrialization and other human activities. The effects of climate change in Southern California include temperature increases, reduced precipitation, more extreme wildfires, and reduced water supply. While climate change is a world-wide phenomenon, action at the local scale is needed to plan for adaptation and enact resiliency measures to reduce the increasing effects of climate change. In Carson, climate change can have a significant impact on public health, including hotter temperatures impacting people that are sensitive to heat and increasingly severe drought conditions affecting access to water. This section provides a background on GHG emissions and an overview on strategies the City can take to reduce its environmental impact on climate change.

GREENHOUSE GASES

GHGs are released during energy production and consumption. Principal GHGs include carbon dioxide, methane, nitrous oxide, ozone, and water vapor. The primary sources of GHG emissions in the United States are electricity production (30 percent of 2014 GHG emissions), transportation (26 percent), and industry (21 percent). Though the greenhouse effect is a natural process, the confluence of an excessive amount of GHGs in the atmosphere leads to climate change. Reducing the carbon content of the fuel source (e.g., solar or wind power versus fossil fuel) or reducing energy consumption (e.g., using energy efficient appliances or designing buildings for solar access) may limit negative impacts on global climate change.



METHANE GAS

Methane gas occurs in the shallow subsurface of some areas of Carson. Methane can originate from leaking pipelines, old landfills, or natural sources. The Los Angeles region and the city have oil and gas fields that run under them and, therefore, have naturally occurring methane. The city also has old landfills which can release methane if not remediated and closed. Methane could accumulate beneath developed areas where concrete and asphalt surfaces prevent the natural migration of methane gas to the atmosphere. If the methane gas migrates through cracks in the concrete foundations, it could accumulate in the interior of the structure creating the potential for an explosion or fire.

Because of the city's methane sources, the city has adopted building codes governing development and redevelopment projects.⁴⁸ The requirements are intended to protect health and safety of workers, residents, and the surrounding community. It requires that structures within 1,000 feet of a methane producing site (fill containing rubbish or other decomposable material) and/or within 300 feet of active, abandoned, or idle oil or gas well(s) be designed in accordance with a report by a licensed civil engineer and/or licensed petroleum engineer, to evaluate and remediate potential methane gas hazards.

48 Carson Municipal Code, 2016. Article VIII Building Regulations – Sewage and Waste, Chapter 1 Building Codes

Additionally, the County of Los Angeles Methane Gas Mitigation Standards,⁴⁹ which the City of Carson has adopted, establish requirements for buildings and enclosed structures located in areas classified as being either in a methane zone or methane buffer zone. The County has prepared a Methane Package that details the codes and laws that pertain to methane gas for the County of Los Angeles.⁵⁰ The County also provides maps of major waste systems and oil/gas well locations within the County of Los Angeles. Pursuant to the County mapping, parts of the City of Carson are located within methane zones or methane buffer zones.⁵¹

CARSON GHG EMISSIONS INVENTORIES

The City's 2015 Climate Action Plan (CAP) discusses GHG emissions, forecasts, and reduction targets. As shown in Table 8-5 below, Carson emitted 2,577,341 metric tons CO₂e (MTCO₂e) in 2005, the baseline year used in the CAP for setting the emissions reduction targets discussed below. Between 2005 and 2012, the City of Carson decreased its GHG emissions by about 17 percent. The largest source of emissions in 2012 was commercial energy, on-road transportation and solid waste, for a total of 2,136,321 MT CO₂e.

STATE AND CARSON GHG REDUCTION TARGETS

The State of California has set goals for GHG emissions reductions based on the International Panel on Climate Change's analysis of what is needed to avert "catastrophic" global climate change. According to the Global Warming Solutions Act (AB 32, 2006), the State aims to reduce emissions to 1990 levels by 2020, which it is expected to

49 Los Angeles County Code Title 26, Ordinances 110.3 and 110.4. Online. <https://dpw.lacounty.gov/epd/swims/docs/pdf/methane/Methane%20Code%20-%20Ordinance%20110.3%20and%20Ordinance%20110.4.pdf>. Accessed December 2017.

50 <https://dpw.lacounty.gov/epd/swims/docs/pdf/methane/Methane%20Packet.pdf>

51 Los Angeles County Department of Public Works Solid Waste Information Management System, Do I Need Methane Mitigation: Online. <https://dpw.lacounty.gov/epd/swims/OnlineServices/search-methane-hazards-esri.aspx>, Accessed December 2017.



TABLE 8-5: COMMUNITY GHG EMISSIONS BY SECTOR FOR 2005 AND 2012

| Sector | 2005 (MT CO ₂ e) | 2012 (MT CO ₂ e) | Percent Change 2005 to 2012 |
|------------------------|-----------------------------|-----------------------------|-----------------------------|
| Commercial energy | 1,731,106 | 1,335,338 | -22.9% |
| On-road transportation | 397,662 | 391,466 | -1.6% |
| Solid waste | 295,391 | 275,936 | -6.6% |
| Residential energy | 107,418 | 102,385 | -4.7% |
| Water | 44,837 | 29,115 | -35.1 |
| Off-road sources | 559 | 1,803 | 222.5% |
| Wastewater | 368 | 278 | -24.5 |
| TOTAL | 2,577,341 | 2,136,321 | -17.1% |

Source: City of Carson Energy Efficiency Climate Action Plan, 2015.

achieve.⁵² In addition, California Executive Order S-3-05 establishes the goal of reducing emissions 80 percent below 1990 levels by 2050, which will require a much faster rate of emissions reduction than the rate needed to reach the 2020 target.⁵³

Per AB 32, the City's 2015 CAP sets a 2020 emissions goal of 2,190,740 MTCO₂e. The City is expected to meet its 2020 target through efforts and legislation existing at the time the CAP was adopted in 2015. The CAP sets a 2035 emissions goal of 1,314,444 MTCO₂e. To reach its 2035 target, the City will implement new GHG reduction measures and augment current GHG reduction efforts detailed in the CAP. These efforts focus on energy efficiency in buildings, generation of renewable energy, and conservation of water, which is energy-intensive to transport and heat. Since the adoption of the CAP, the State has passed

new legislation and the Governor has issued several executive orders that set higher reduction targets. The following is a summary of some of the requirements related to GHG emissions reduction.

SENATE BILL 375

To help reach GHG emissions reduction goals, the State adopted the Sustainable Communities and Climate Protection Act (SB 375, 2008), which requires each major region of the state to adopt a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The SCS integrates land use, transportation, and housing planning to improve proximity and connectivity of jobs and housing to reduce GHG emissions from passenger vehicles and to meet State-mandated regional GHG emissions reduction targets. The 2020 Southern California Association of Governments RTP/SCS adopted per SB 375 promotes compact, mixed-use commercial and residential development that is walkable, bikeable, and close to public transit, jobs, schools, shopping, parks, recreation, and other amenities. The plan provides a strategy for meeting 51-55 percent of the region's future housing growth in High Quality Transit Areas, which are areas near public transit with high service frequency during peak commuting hours.

CARB SCOPING PLAN

Pursuant to SB 32, CARB updated the prior AB 32 Scoping Plan to address implementation of GHG reduction strategies to meet the 2030 reduction target. The final plan was approved in December 2017. The 2017 plan continues the discussion from the original scoping plan and 2014 update of identifying scientifically-backed policies within six of the state's economic sectors to reduce GHGs. The updated Scoping Plan includes various elements, including doubling energy efficiency savings, increasing the low carbon fuel standard from 10 to 18 percent, adding 4.2 million zero-emission vehicles on the road, implementing the Sustainable Freight Strategy, implementing a post-2020 Cap-and-Trade Program, creating walkable communities with expanded mass transit and other alternatives to traveling by car, and developing an Integrated Natural and Working Lands Action Plan to protect land-based carbon sinks. The updated Scoping Plan recommends that local governments target six metric tons of carbon dioxide equivalent (MTCO₂e) per capita per year in 2030 and two MTCO₂e per capita per year in 2050.

52 California Air Resources Board. First Update to the Climate Change Scoping Plan: Building on the Framework pursuant to AB 32. 2014.

53 Governor's Office of Planning and Research. 2015 Draft General Plan Guidelines. Online. https://www.opr.ca.gov/docs/DRAFT_General_Plan_Guidelines_for_public_comment_2015.pdf.

GOVERNOR'S EXECUTIVE ORDER B-55-18

Executive Order B-55-18 (EO B-55-18), issued in 2018, established a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter. EO B-55-18 is established in addition to the existing statewide targets of reducing GHG emissions. To achieve this target, remaining emissions must be offset by equivalent net removals of CO₂ from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

TITLE 24 BUILDING STANDARDS & CALGREEN

Title 24 is California's Building Energy Code, which is updated every three years. In 2010, Title 24 was updated to include the "California Green Building Standards Code," referred to as CALGreen. CALGreen requires that new buildings reduce water consumption, increase system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. CALGreen has mandatory measures that apply to non-residential and residential construction. The most recent 2019 CALGreen code was adopted in 2018 and became effective in 2020. A notable change under this update is the requirement for installation of solar photovoltaics on all new residential buildings. CALGreen contains voluntary Tier 1 and Tier 2 levels, which are designed to exceed energy efficiency and other standards by 15 percent or 30 percent.

CLIMATE CHANGE ADAPTATION

Although reducing GHGs is necessary to avoid the most catastrophic consequences of climate change, a certain amount of climate change within the planning horizon of this General Plan is unavoidable due to existing emissions and concentration of GHGs in the atmosphere. According to online visualization tools provided by Cal-Adapt,⁵⁴ the average number of days per year with a high temperature above 104 degrees in California will increase from 4.3 days between 1961 and 1990 to 13 days between 2017 and 2035, if global emissions of GHGs continue at the current rate. Warmer years overall will continue to affect the snowpack in the Sierra Nevada Mountains, as more of the

region's annual precipitation falls as rain rather than snow, and as the snow that does fall melts at higher rates and earlier in the year. The Sierra Nevada spring snowpack is estimated to decrease from an annual mean of four inches between 1961 and 1990 to just over one inch between 2017 and 2035. The change in precipitation patterns could result in reduced water supplies, seasonal flooding changes, and impacts to hydropower generation.

In the Planning Area, some residents will be more vulnerable to the effects of climate change. For example, young residents, seniors, persons with disabilities, lower-income households, those living in social isolation, and the homeless are at a much higher risk for heat-related health problems. Geographically, some locations in the Planning Area may be more susceptible to certain effects of climate change. Urban areas are more likely to experience "heat island" effects, development and human activities contribute to temperatures that are higher than surrounding rural areas. Heat islands are typically the result of dark surfaces, building materials that absorb and radiate heat, loss of vegetation, and energy usage.

In addition to mitigating climate change by reducing GHG emissions, Carson can help prepare for and adapt to the effects of climate change and build resiliency so that its residents can continue to enjoy a high standard of living.



54 Cal-Adapt is a resource for climate data and visualization tools developed by the Geospatial Innovation Facility at University of California, Berkeley with funding and advisory oversight by the California Energy Commission.



8.10 Guiding and Implementing Policies

GUIDING POLICIES

Open Space Resources

See additional guiding policies related to parks and open space in Chapter 5: Recreation and Active Lifestyle.

OSEC-G-1 Maintain a balanced and well integrated open space system reflecting a variety of considerations: resource conservation, production of resources, recreation, and aesthetic and community identity—and ensuring synergies between various open space components and compatibility with land use planning.

OSEC-G-2 Seek opportunities for the restoration of natural open space during redevelopment of industrial or remediated landfills—including land currently used to produce resources—to create open space that supports outdoor recreation, protects public health and safety, and improves plant and animal habitat.

Biological Resources

OSEC-G-3 Support efforts to improve the biodiversity of plant and animal habitats within Carson by creating natural habitat areas when feasible. Support efforts to restore channelized creeks to naturalized flows, with supportive open space development that promotes healthy riparian habitat.

OSEC-G-4 Recognize and support the preservation of wildlife migration routes and special status species that are State or federally listed as Endangered, Threatened, or Rare.

OSEC-G-5 Promote ecology and avian habitat creation by supporting a strong urban forest.

Cultural Resources

OSEC-G-6 Identify, protect, and preserve important archaeological, paleontological, tribal, and historic resources for their aesthetic, scientific, educational, and cultural values.

OSEC-G-7 Celebrate Carson’s unique cultural history by promoting an understanding and appreciation of its history with residents.

OSEC-G-8 Recognize the Tribal Nations who first lived in the Carson area and preserve their identity, culture, and artifacts. Consistent with State law, consult with local Tribal Nations and the Native American Heritage Commission to protect tribal cultural resources including sites, features, places, cultural landscapes, sacred places, or objects with cultural value to the tribes that is on or eligible for inclusion in the California Register of Historic Resources or a local historic register.

The State of California has adopted regulations that establish guidance and clear procedures for contacting and consulting with local tribes regarding proposed land use decisions for the purpose of protecting tribal cultural resources. Senate Bill 18 (SB 18) requires local governments to notify and consult with Native American tribes regarding tribal cultural places (otherwise known as sacred sites) prior to adopting or amending a General Plan or designating land as open space. Assembly Bill 52 (AB 52) requires that Native American tribes be offered the opportunity to consult on CEQA documents and take an active role in the CEQA process

Water Quality

OSEC-G-9 Maintain the quality of surface water and groundwater resources and prevent their contamination.

Utilities

OSEC-G-10 Provide for utilities and infrastructure to deliver safe, reliable services for current and future residents and businesses.

OSEC-G-11 Maintain environmentally appropriate stormwater management practices.

OSEC-G-12 Promote water conservation strategies in the community by increasing awareness and expanding access to programs.

OSEC-G-13 Encourage integration of water conservation measures for both existing and new development, and promote utilization of recycled water for appropriate uses.

OSEC-G-14 Promote sustainable energy generation practices to support energy security that is resilient to blackouts and other climate or anthropogenic disasters.

OSEC-G-15 Implement programs and work with jurisdictional partners to increase sustainable energy production and energy security.

Solid Waste and Recycling

OSEC-G-16 Reduce the generation of solid waste, including hazardous waste, and promote recycling of materials to reduce waste accumulation slow in local and regional landfills.

Air Quality

See additional guiding policies related to Air Quality in Chapter 6: Community Health and Environmental Justice.

OSEC-G-17 Support regional efforts to reduce pollution from significant sources that negatively affect the City, such as port and truck pollution from the ports of Los Angeles and Long Beach.

OSEC-G-18 Continue to work with South Coast Air Quality Management District (SCAQMD) to reduce generation of air pollutants, improve air quality, and meet all national and State ambient air quality standards.

OSEC-G-19 Seek to reduce mobile sources of air pollution by creating denser and walkable neighborhoods, promoting transit-oriented development, and improving bicycle infrastructure, with the goal to reduce the number of miles traveled in cars and improve regional air quality.

OSEC-G-20 Seek to reduce air quality impacts of industrial and commercial uses, like oil refineries and trucking, for both mobile and stationary sources of pollution.

OSEC-G-21 Lessen exposure of sensitive uses to pollutants emitted by mobile sources by buffering freeways, major arterials, and truck routes with trees and vegetation.

OSEC-G-22 Promote clean and alternative fuel combustion in City-owned mobile equipment and vehicles.

Greenhouse Gas Reduction and Climate Change Adaptation

OSEC-G-23 Undertake initiatives outlined in the Climate Action Plan to enhance sustainability by reducing the community’s greenhouse gas (GHG) emissions and fostering green development patterns—including buildings, sites, and landscapes.

OSEC-G-24 Incorporate green infrastructure design in new projects to promote sustainability in the built environment.

Green infrastructure is the use of open spaces, permeable pavement, street tree rain gardens, and other natural approaches to capture infiltrate, and reuse rainwater. As opposed to single-purpose gray stormwater infrastructure—conventional piped drainage and water treatment systems—which is designed to move urban stormwater away from the built environment, green infrastructure reduces and treats stormwater at its source thus reducing strain on infrastructure while delivering environmental, social, and economic benefits.⁵⁵

OSEC-G-25 Demonstrate leadership by reducing the use of energy and fossil fuel consumption in municipal operations, including transportation, waste and water reduction, recycling, and by promoting efficient building design and use.

OSEC-G-26 Plan for extreme weather events by incorporating the potential effects and threats of climate change into emergency management planning.

OSEC-G-27 Reduce the impacts of extreme heat events resulting from global warming and climate change by diminishing urban heat island effects. Explore heat mitigation strategies including planting trees, limiting the use of heat-absorbing pavement, encouraging use of cool roofs and reflective pavements, and providing cooling elements in public spaces such as shade structures and water features.

Heat islands are urbanized areas that experience higher temperatures than outlying areas. Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun’s heat more than natural landscapes such as forests and water bodies. Urban areas, where these structures are highly concentrated and greenery is limited, become “islands” of higher temperatures relative to outlying areas. Daytime temperatures in urban areas are about 1–7°F higher than temperatures in outlying areas and nighttime temperatures are about 2–5°F higher.⁵⁶

OSEC-G-28 Promote sustainable practices as well as environmental remediation for heavy industrial areas and seek to reduce trucking emissions.

55 US Environmental Protection Agency (EPA). “What is Green Infrastructure?”. Accessed via web 7/2021. <https://www.epa.gov/green-infrastructure/what-green-infrastructure>

56 US Environmental Protection Agency (EPA). “Heat Island Effect”. Accessed via web 7/2021. <https://www.epa.gov/heatislands>



IMPLEMENTING POLICIES

Open Space Resources

See additional policies related to recreational open space in Chapter 5: Recreation and Active Lifestyle.

- OSEC-P-1** Work with the County, the Los Angeles Department of Water and Power, and Southern California Edison to promote use of flood control facilities and electric transmission corridors within the City as trails where feasible.
- OSEC-P-2** Seek public access to open space areas where consistent with applicable access restrictions. When natural open lands are privately held or held by a separate government agency, such as the Los Angeles County Department of Public Works (LACDPW) which owns the flood channels, acquire or negotiate for public access if the land could be used for unprogrammed recreational uses. Public access shall not be provided where sensitive resources may be threatened or damaged, where public health and safety may be compromised or where access would interfere with the managed production of resources, such as oil fields.
- OSEC-P-3** Support urban agriculture and local initiatives to grow food, such as community supported agriculture (CSA) farms and community gardens.

Biological Resources

- OSEC-P-4** Support reclamation of natural habitat in heavily disturbed locations, including closed landfills, channels, and when industrial areas are redeveloped, to improve the biodiversity of the City, increase resident's access to nature and outdoor recreation, restore plant and animal habitat, and assist with environmental remediation.

This policy is intended to bring more greenery into the city and seeks to improve biological resources with reducing environmental impacts such as the heat island affect, improve air quality, assist with environmental remediation, and further environmental justice initiatives.

- OSEC-P-5** Recognize the importance of the urban forest to the natural environment in Carson and support the expansion of the tree canopy on public and private property throughout the community. Undertake a program to increase Carson's "urban forest", with emphasis on planting street trees along Greenway Corridors and Boulevards, in mixed-use areas with greater concentration of pedestrians, and adjacent or close to freeways and along arterials with high truck traffic.

OSEC-P-6 Enhance tree health and the appearance of streets and other public spaces through regular maintenance as well as tree and landscape planting and care of the existing canopy.

OSEC-P-7 Promote awareness among property owners, businesses, and developers of larger sites that may undergo redevelopment or sites located along creeks that may be naturalized about the possibilities for environmental improvement, such as landscape, maintenance, and irrigation practices that foster habitat creation for wild-life species and improve the urban forest.

This would particularly apply to any properties adjacent to Dominguez Channel if that were to be naturalized, as called for in policy OSEC-P-19.



Cultural Resources

OSEC-P-8 Development projects shall comply with State and federal law that upon discovery of Native American remains or archaeological artifacts during construction, all activity will cease until qualified professional archaeological examination and reburial in an appropriate manner is accomplished.

OSEC-P-9 For development and redevelopment proposals in archaeologically- or culturally-sensitive areas of Carson, require an assessment of the potential presence of archaeological and tribal cultural resources, including a site survey and a records search of the California Historical Resources Information System at the South Central Coastal Information Center (SCCIC). As warranted by the results of the assessment, require additional studies to identify and address project-specific impacts on archaeological and tribal cultural resources.

The City should incorporate the study recommendations as project conditions of approval to ensure that impacts on archaeological and/or tribal cultural resources are mitigated to the extent possible. Studies should be prepared according to National Register Bulletin 24: Guidelines for Local Surveys: A Basis for Preservation Planning and the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.

OSEC-P-10 Using an annually updated Archaeological Resource Sensitivity Map, review proposed development projects to determine whether a site contains known prehistoric or historic cultural resources and/or to determine the potential for discovery of additional cultural resources.

- OSEC-P-11** Proactively coordinate with the area's native tribes in the review and protection of any tribal cultural resources discovered at development sites.
- OSEC-P-12** Prior to development of projects that involve ground disturbance or excavations in undisturbed native soils, the project proponent shall retain a paleontologist meeting the Society of Vertebrate Paleontology's standards for qualified professional paleontologist to conduct a paleontological resources assessment including: a site-specific database search at the Natural History Museum of Los Angeles County and/or other appropriate facilities; geologic map and scientific literature review; a pedestrian field survey, where deemed appropriate by the qualified professional paleontologist; assessment of the project area's paleontological sensitivity and paleontological monitoring requirements; and preparation of a technical report that documents the methods and results of the study. The report shall be prepared prior to the City of Carson's approval of project plans.
- OSEC-P-13** The City shall require paleontological resources monitoring for any project that has a high potential for encountering subsurface paleontological resources. The location, depths, duration, and timing of monitoring shall be determined by the qualified professional paleontologist based on the sensitivity assessment required as part of OSEC-P-12. Prior to the start of ground disturbance, the project proponent shall retain a qualified monitor meeting the Society of paleontological resource monitors, and who shall work under the direct supervision of the qualified professional paleontologist. In the event that paleontological resources are unearthed during ground-disturbing activities, the monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the discovery un-

til the qualified professional paleontologist has determined its significance and provided recommendations for preservation in place or recovery of the resource. The monitor shall keep daily logs detailing the types of activities and soils observed, and any discoveries. After cessation of ground disturbance, the qualified professional paleontologist shall prepare a report that details the results of monitoring.

Water Quality

- OSEC-P-14** Support Los Angeles Regional Water Quality Control Board (RWQCB) regulations and standards to maintain and improve the quality of both surface water and groundwater resources.
- OSEC-P-15** Continue working with the Los Angeles RWQCB in implementation of the National Pollutant Discharge Elimination System (NPDES) program. As part of the NPDES permitting process, require developments to incorporate structural and non-structural best management practices (BMPs) to mitigate or reduce the projected increases in pollutant loads. Do not allow post-development runoff from a site that would cause or contribute to an exceedance of receiving water quality objectives or has not been reduced to the maximum extent practicable.
- OSEC-P-16** Prepare and implement applicable plans such as a Water Quality Improvement Plan, Integrated Regional Water Management Plan, Load Reduction Plan or others as needed to comply with applicable regulations.
- OSEC-P-17** Coordinate with the U.S. EPA, CalEPA, LA RWQCB, and other related jurisdictions on monitoring industrial discharges to ensure that wastewater quality continues to meet various federal, State, and regional standards.

- OSEC-P-18** Establish and implement best management practices in the Carson Addendum to Dominguez Channel Watershed Management Area Group for protection of surface and ground-water quality. Review and update as needed.
- OSEC-P-19** Strive to adopt a Master Plan for the Dominguez Channel through partnerships with the Los Angeles County Flood Control District to improve the water quality, including potentially naturalizing the creek, and create an amenity for the community.
- OSEC-P-20** Where feasible, support the restoration and rehabilitation opportunities of channelized waterways and promote the usage of naturalized drainage channels within the city.
- OSEC-P-21** Coordinate the needs of pollution management with the overlapping (and sometimes competing) habitat management, flood management, capital improvement projects, development, aesthetic, and other open space needs.
- OSEC-P-22** OSEC-P-22 information about the potentially harmful effects of toxic chemical substances in the water supply and safe alternative measures, including information about safe alternatives to toxics for home and garden use.

Utilities

- OSEC-P-23** Safely manage the water supply and services, wastewater, sewer, recycled water, and storm drain infrastructure in a manner that provides for future growth of the City.
- OSEC-P-24** Prepare an updated Sewer System Management Plan that meets Statewide General Waste Discharge Requirements and qualifies as a Monitoring and Reporting Program for sanitary sewer systems. Conduct audits every three years and update the plan every five years or as necessary.

- OSEC-P-25** Through partnership with the Los Angeles County Sanitation Districts, promote utilization of recycled water created under the RRWP for non-potable water needs.
- OSEC-P-26** Work with California Water Service Company, Golden State Water Company, and Metropolitan Water District to ensure adequate availability of water to meet future needs.
- OSEC-P-27** Promote education for residents and businesses on the benefits of conserving water and explore incentives for lowering water usage.
- OSEC-P-28** Establish guidelines and standards for water conservation and actively promote the use of water-conserving devices and practices in both new construction and major alterations as well as additions to existing buildings. Strategies include:
 - Requiring water-conserving design and equipment in new construction
 - Encouraging retrofitting with water-conserving devices
 - Requiring Low Impact Development principles and guidelines during site design
 - Promoting the use of greywater in large developments for non-potable water uses



OSEC-P-29 Promote renewable energy generation and storage to decrease reliance on outside sources and minimize impacts from blackouts.

Potential strategies include:

- *Incentivize solar panel deployment beyond State’s mandates and pursue State, regional, and federal funding programs designed to reduce energy demand through conservation and efficiency. Establish guidance on placement of solar panels to minimize impacts to aesthetic resources.*
- *Promote renewable energy generation on City-owned sites and deployment of micro-grids for energy independence and lifeline operations in the event of power shutdowns.*
- *Reduce reliance on backup generators that rely on fossil fuels by establishing citywide program to transition to more climate friendly options including battery storage, solar-powered generators, and small-scale wind turbines in appropriate areas.*
- *Promote alternative modes of electricity generation—such as wind, solar, biomass, geothermal, and hydroelectric—and invest in electric storage infrastructure at the city-wide level.*
- *Increase installation of electric vehicle charging stations with funding from State and federal sources.*
- *Convert street lighting, water pumping, water treatment, and other energy-intensive operations to more efficient technologies.*

Solid Waste and Recycling

OSEC-P-30 Continue to work toward reducing solid waste, increasing recycling, and complying with the Los Angeles County Integrated Waste Management Plan.

OSEC-P-31 Expand educational outreach about solid waste reduction and recycling programs and work to provide programs and informational materials in multiple languages.

OSEC-P-32 Further the City’s goals to promote recycling, composting, and source reduction services for residential and commercial uses to divert 75% (or more) of waste from landfills by 2022 and maintain diversion at 75% or greater through 2040. *See Assembly Bill No. 341 for additional information regarding waste diversion.*

Air Quality

See additional policies related to Air Quality in Chapter 6: Community Health and Environmental Justice.

Regional Coordination with South Coast Air Quality Management District

OSEC-P-33 Work with SCAQMD on compliance with Rule 2305 Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions (WAIRE) for operators of warehouse distribution centers with greater than or equal to 100,000 square feet of indoor floor space in a single building.⁵⁷

OSEC-P-34 Continue to encourage and assist employers in developing and implementing work trip reduction plans, employee ride sharing, modified work schedules, preferential car-pool and vanpool parking, or any other trip reduction approach that is consistent with the SCAQMD.

⁵⁷ South Coast Air Quality Management District, Rule 2305. Adopted May 7, 2021. <http://www.aqmd.gov/docs/default-source/rule-book/reg-xxiii/r2305.pdf?sfvrsn=15>

OSEC-P-35 Cooperate with the SCAQMD on regional air quality management plans, programs, and enforcement measures to achieve emissions reductions for nonattainment pollutants and their precursors—including diesel, ozone, PM2.5, and PM10—by implementing air pollution control measures as required by State and federal statutes.

OSEC-P-36 Cooperate with federal and State agencies and the SCAQMD in their efforts to reduce exposure from railroad, truck, and port emissions.

Design and Land Use Planning

OSEC-P-37 Continue to enforce ordinances which address dust generation and mandate the use of dust control measures to minimize this nuisance as part of requirements for grading and construction permits, with inclusion of appropriate dust monitoring and mitigation strategies to contain dust on-site.

OSEC-P-38 Consider requiring zero and near-zero space and water-heating technologies, and consider prohibiting use of natural gas in heating spaces and water for new and significantly-renovated buildings.

OSEC-P-39 Where feasible, require new sensitive receptors (e.g., schools, daycare centers, hospitals, and retirement homes) to be set back from highways and other high-volume roads, consistent with SCAQMD Guidelines, to reduce health risks associated with exposure to TACs, including exhaust emissions or particulate matter from diesel engines (DPM).

OSEC-P-40 For new sensitive receptors, require the installation of indoor air quality equipment such as high-efficiency particulate filters if the recommended siting distances cannot be attained.

OSEC-P-41 Encourage efficient, clean energy and fuel use through collaborative programs, award programs, and incentives, while also removing barriers to the expansion of alternative fuel facilities and infrastructure.

OSEC-P-42 Ensure that design guidelines and standards support operation of alternative fuel facilities, vehicles, and equipment.

Transportation-Related Emission Reduction

OSEC-P-43 Support SCAQMD efforts to reduce transportation-related emissions, including electric charging requirements for buildings including warehouses and truck idling restrictions.

OSEC-P-44 Utilize incentives, regulations and implement the Transportation Demand Management requirements in cooperation with other jurisdictions to eliminate vehicle trips which would otherwise be made and to reduce vehicle miles traveled for automobile trips which still need to be made.

See Chapter 3: Transportation and Connectivity for additional information regarding Transportation Demand Management requirements and other implementing policies for reducing automobile travel and exhaust.

OSEC-P-45 Require new developments to provide pedestrian and bicycle trails access to nearby shopping and employment centers, thereby encouraging alternate modes of transportation and reducing vehicle miles traveled.

OSEC-P-46 Continue to implement strategies to reduce government operation emissions, including City employee work trip reduction programs, work from home options, and use of alternative fuel vehicles. Strive to have the City-owned vehicle fleet to be 100 percent electric or alternative fuel by 2040 or sooner.

Monitoring and Project Review

- OSEC-P-47** Through the development review process, reduce air pollutant emissions impacts associated with facilities/industrial uses in Carson, to the greatest extent possible, by preparing air quality mitigation and monitoring measures, implementing reduction strategies, and limiting PM10 producers and other polluting industries from locating in the City.
- OSEC-P-48** Continue to work with industries and regulatory agencies to monitor, regulate, and provide quick response and communication with the community in the event of an emergency impacting air quality.
- OSEC-P-49** Use the City's development review process and the California Environmental Quality Act (CEQA) regulations or strategies and measured outlined in the CAP to evaluate and mitigate the local and cumulative effects of new development on air quality and GHG emissions.
- OSEC-P-50** Periodically update the inventory of community-wide GHG emissions and evaluate appropriate GHG emissions reduction targets, consistent with current State objectives, guidance, and regulations.

Greenhouse Gas Reduction and Climate



Change Adaptation

- OSEC-P-51** Use the CAP as the City's primary strategy to reduce GHG emissions, including strategies related to land use and transportation, energy efficiency, solid waste, urban greening, and energy generation and storage.
- OSEC-P-52** Update the City's Climate Action Plan as needed to synchronize GHG reduction targets with new State mandates and to incorporate new technology and strategies.
- OSEC-P-53** Require all new or substantially renovated gas stations to provide electric-charging stations and be future-ready to switch to electric charging stations only in future.
- OSEC-P-54** Outline a plan of mobile source enforcement methods, such as periodic mobile source (e.g., trucks) checkpoints, along major truck routes throughout the City to enforce emission opacity regulations. Technical assistance can be sought from California Air Resources Board (CARB) and the California Highway Patrol (CHP) on enforcement issues.
- OSEC-P-55** Enforce CARB's idling reduction strategies that requires school buses and other heavy-duty vehicle operators to turn off their engines if they are idling more than five minutes. Focus enforcement near schools, residential areas, and other sensitive uses as well as heavy truck trafficked areas. Further, design traffic plans, including the development of suggested routes, to minimize diesel truck idling.
- OSEC-P-56** To reduce transportation-related GHG emissions, promote active modes of transportation including transit, bicycling, and walking by providing infrastructure that supports each of these networks, such as adding or expanding bicycle lanes, exploring use of sidewalk bulb outs, increasing

bus service frequency, and exploring multi-modal connectivity between these types of transportation.

This topic is also covered in depth in Chapter 3: Transportation and Connectivity.

OSEC-P-57 Facilitate energy efficiency in building regulations, providing flexibility to achieve specified energy performance levels and requiring energy efficiency measures as appropriate.

OSEC-P-58 Support sustainability measures to reduce and conserve municipal and private energy uses, especially from commercial and industrial uses which consume 78 percent of the city's total electric usage.

OSEC-P-59 Coordinate with the business and industrial community to encourage energy efficiency in the City's largest energy users while supporting economic growth objectives.

OSEC-P-60 Support efforts to enhance Carson's urban forestry to help reduce ambient temperatures and an opportunity for residents to enjoy outdoor spaces by providing ecological benefits such as shade and some air filtration, in addition to economic benefits.

OSEC-P-61 Seek opportunities for funding and provide incentives to promote siting or use of clean air technologies (e.g., fuel cell technologies, renewable energy sources, UV coatings, hydrogen fuel).

