

4. Environmental Setting

The purpose of this section is to provide a “description of the physical environmental conditions in the vicinity of the Project, as they exist at the time the Notice of Preparation (NOP) is published, from both a local and a regional perspective” pursuant to CEQA Guidelines Section 15125(a). In addition to the summary below, detailed environmental setting descriptions are provided in each subsection of Section 5 of this Draft EIR.

4.1 PROJECT LOCATION

The Project site is 14.58 acres and located at 2300, 2310, and 2320 South Redhill Avenue in the City of Santa Ana and is identified by APN 430-222-01 and 430-222-16. The site is located at the southwest corner of Red Hill Avenue and Warner Avenue. Regional access to the Project site is generally provided via State Route (SR) 55 at the Dyer Road exit. The regional location of the Project site is shown in Figure 3-1 in Section 3.0, *Project Description*. Access to the Project site is provided by Red Hill Avenue and Warner Avenue.

The Project site is located within the southeastern most portion of the City of Santa Ana. Areas across from Red Hill Avenue (to the east) are within the City of Tustin and are part of the former Tustin Marine Corps Air Station (MCAS), now known as the Tustin Legacy. Areas across from Dyer Road (0.5 mile south of the site) are in the City of Irvine, within the Irvine Business Complex (IBC). The local vicinity is shown in Figure 3-2 in Section 3.0, *Project Description*.

4.2 PROJECT SITE DESCRIPTION

The Project site is relatively flat and approximately 60 feet above mean sea level (msl). The site is currently developed with three partially occupied industrial buildings, parking areas, and vehicle circulation drives. The site has little vegetation other than an approximately 2.5-acre undeveloped grass area at the corner of Red Hill and Warner Avenues, some ornamental trees scattered throughout the site, and street trees along Red Hill Avenue and Warner Avenue. The 3 existing buildings total 212,121 square feet and consist of the following structures:

- **2300 South Redhill Avenue:** 30,129 square foot building with a 3,330 SF square foot mezzanine and 6 loading docks
- **2310 South Redhill Avenue:** 68,992 square foot building with a 9,992 square foot mezzanine office and 6 loading docks
- **2320 South Redhill Avenue:** 113,000 square foot building with a 43,000 square foot mezzanine office and 7 loading docks

The buildings are currently utilized by various lessees, which include 119,121 square feet that is utilized by warehousing and distribution operations; 5,000 square feet that is utilized for research and development; and 30,000 square feet in the 2320 South Redhill Avenue building that is being utilized as a 200-bed temporary homeless shelter by the City of Santa Ana. The remaining 53,000 square feet of building area is currently vacant. The Project site was formerly occupied by Ricoh Electronics, Inc., a manufacturer and distributor of thermal paper and toner from approximately 1985 through 2017.

The existing buildings include two and three-story high concrete industrial buildings. Building exteriors are distinguished by detailing around the entrances that include steel framed or wood framed doorways, and various loading docks. Wire fencing currently surrounds the 2320 South Redhill Avenue building that is located on the northeastern portion of the Project site, and approximately 6-foot high retaining wall is

located on the western boundary of the Project site. Lighting is present in parking areas and on the exterior of the buildings, mainly focused on entrances and exits, as well as loading docks. An aerial photograph of the Project site is shown as Figure 3-3 in Section 3.0, *Project Description*.

The Project site has a General Plan Land Use designation of P (Professional) and is zoned Light Industrial (M-1).

4.3 AESTHETICS

Scenic Vistas: The Project site and surrounding areas are either urbanized or planned for urbanization and do not contain any sensitive scenic vistas. The General Plan Scenic Corridors Element identifies street corridors, watercourse corridors, inter-city corridors, City entries, and selected/screened views from a highway that are considered unique visual resources within the City. Exhibit 4 of the Scenic Corridors Element does not identify any scenic resources or vistas at or adjacent to the Project site. The nearest feature identified by the General Plan is Edinger Avenue, a “Secondary Street Corridor”, which is approximately 1 mile north of the site.

State Scenic Highways: There are no officially designated state scenic highways in the vicinity of the proposed Project (Caltrans 2019). The only officially designated scenic highway within Orange County is a portion of SR-91 that is located between SR-55 to east of the Anaheim city limit (Caltrans 2019), which is not in the vicinity of the Project site. Likewise, there are no County-designated scenic highways that run through the City of Santa Ana.

Visual Character of Project Site: The visual character of the Project site is urban and light industrial in nature. The Project site is developed with three large industrial buildings that total 212,121 square feet, parking areas, and vehicle circulation drives. Two of the industrial buildings are two-stories in height and one is three-stories in height. The vegetation on site consists of an approximately 2.5-acre undeveloped grass area at the corner of Red Hill and Warner Avenues, some ornamental trees scattered throughout the site, and street trees along Red Hill Avenue and Warner Avenue.

The exterior of the buildings are long and flat, without architectural treatments. The buildings have a typical boxy modern office/industrial structure appearance, with large dark tinted windows line the first and second floors of the 2310 South Redhill building and that make up a large portion of the front of the 2320 South Redhill building. The dark window tinting provides a black appearance from the outside. The 2320 building has exterior metal stairs to access the second story of the building and the 2310 building has very few windows, which adds to the industrial appearance. All three buildings have loading docks and industrial door openings. The buildings are surrounded by asphalt paved surface parking areas, as shown in Figure 5.1-1.

The site is surrounded by 5-foot high wrought iron fencing along Warner Avenue and Red Hill Avenue, which is setback from the roadways by landscaped setbacks and sidewalks. The other two sides of the Project site, that are adjacent to existing business park uses, are bound by 6-foot high cement walls.

Visual Character of Surrounding Area: The existing visual character of the area surrounding the Project site is urban. There is no consistent architectural or visual theme within the surrounding area and significant visual resources are limited. The parcel adjacent to the Project site on Red Hill Avenue is developed with 3-story high tilt-up cement light industrial buildings and associated parking areas.

Areas across Red Hill Avenue, which is a 6-lane arterial roadway, from the Project site are within the Tustin Legacy Specific Plan area and undergoing new urban development. Areas across from the site, on the northeast corner of Red Hill Avenue and Warner Avenue, are developed with two-story rectangular urban

buildings that are used for public and social service uses. In addition, the large airplane hangar that was previously used by the no longer existing Naval Air Station is located within middle ground views provides for an urban visual setting. Foreground views include screened chain linked fencing that surrounds a weedy open space area with a tall Tustin Legacy monument sign on the southeast corner of the Redhill Avenue and Warner Avenue intersection.

The area directly across Red Hill Avenue from the site currently consists of an undeveloped disturbed area that consists of bare ground, weedy vegetation, cement building pads that are remnants of previous development, areas that appear to be used for construction staging. Foreground views of the areas are dominated by the screened chained link fencing that surrounds the undeveloped area. Long range views include another large airplane hangar that was previously used by the Naval Air Station.

Areas across Red Hill Avenue to the southeast, also provides foreground views of the screened chained link fencing that surrounds the undeveloped area. However, middle ground views are of new four-story office structures that are rectangular and modern in design. Longer range views include a new 5-story hotel located on Barranca that also has a modern rectangular and boxy architecture.

The Project site is bounded to the north and northwest by Warner Avenue, which is a 6-lane arterial roadway with sidewalks and street trees. The parcel adjacent to the Project site on Warner Avenue is developed with one-story linear commercial and business park uses. These buildings have both a modern commercial appearance, with large store front type windows and parking adjacent to the front entrances of the businesses, and an industrial appearance with large roll up doors on the sides and rears of the buildings, some of which can be viewed from Warner Avenue.

Areas across the street from the Project site on Warner Avenue are developed with two-story office buildings that are surrounded by surface parking areas, as shown in Figure 5.1-8. These buildings have modern architecture and are rectangular with two-story high black-tinted windows at the building entrances, large rectangular windows on the sides of the building in between the stucco exterior. The character of the areas across Warner Avenue from the Project site are of an office park environment

Nighttime Lighting. The Project site is located within an urbanized area that generates the majority of light from vehicular traffic on local streets, street lighting, signage, interior lighting passing through windows, and exterior security lighting. The existing industrial uses on the Project site do not generate substantial light. Light generated by vehicular traffic is from Red Hill Avenue and Warner Avenue, which border the Project site. In addition, both roadways have existing street lighting.

4.4 AIR QUALITY

The Project site is located within the South Coast Air Basin (Basin), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The Basin is a 6,600-square-mile coastal plain bounded by the Pacific Ocean to the southwest and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, and all of Orange County.

The ambient concentrations of air pollutants are determined by the amount of emissions released by sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources.

The topography and climate of Southern California combine to make the Basin an area of high air pollution potential. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific

Ocean to the west and high mountains around the rest of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is disrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cool marine layer and inhibits the pollutants in the marine layer from dispersing upward. In addition, light winds during the summer further limit ventilation. Furthermore, sunlight triggers the photochemical reactions which produce ozone.

SCAQMD maintains monitoring stations that monitor air quality and compliance with associated ambient standards. In 2018, the federal and state ambient air quality standards (NAAQS and CAAQS) were exceeded on one or more days for ozone, PM₁₀, and PM_{2.5} at most monitoring locations.

4.4 CULTURAL RESOURCES

Historic

The Phase I Environmental Site Assessment that was prepared for the Project site (ESA 2018) describes that between the years of 1938 and 1972, prior to development of the existing site structures, the Project site and adjacent areas were used for agriculture, which resulted in shallow soil disturbances.

The Project site is currently developed with three industrial buildings that were developed in the early 1980s, less than 45 years ago. The buildings were previously occupied by Ricoh Electronics Inc. an imaging and electronics company. The onsite buildings are surrounded by loading docks, surface parking areas, and ornamental landscaping. The Project site does not include any historic structures or other resources.

In addition, the Project site is not adjacent to any historic structures. Areas surrounding the site consist of modern office, business park, modern public service facilities, and vacant land that is proposed for new development.

Archaeologic

Most researchers agree that the earliest occupation for the western Riverside County area dates to the early Holocene (11,000 to 8,000 years ago). The material culture related to this time included scrapers, hammer stones, large flaked cores, drills, and choppers, which were used to process food and raw materials.

Around 8,000 years ago, subsistence patterns changed, resulting in a material complex consisting of an abundance of milling stones (for grinding food items) with a decrease in the number of chipped stone tools. The material culture from this time period includes large, bifacially worked dart points and grinding stones, handstones and metates. This Encinitas Tradition includes the Sayles or Pauma cultures that were located in inland San Diego County and western Riverside County, where the Project is located. At approximately 3,500 years ago, Pauma groups in the general vicinity of the Project area adopted new cultural traits which transformed the archaeological site characteristics - including mortar and pestle technology. This indicated the development of food storage, largely acorns, which could be processed and saved for the leaner, cooler months of the year.

At approximately 1,500 years ago, bow and arrow technology started to emerge, and the Palomar Tradition is attributed to this time. The Palomar Tradition is characterized by soapstone bowls, arrowhead projectile points, pottery vessels, rock paintings, and cremation sites. The shift in material culture assemblages is largely attributed to the emergence of Shoshonean (Takic-speaking) people who entered California from the east.

The Geotechnical Report that was prepared for the Project describes that the previous excavation for development of the existing 3 buildings and removal of previous underground storage tanks involved removal of soils and backfill with artificial compacted fill soils ranging between 5 feet and 13 feet in depth, as described below (GEO 2019):

- During development of the 2300 South Redhill Avenue building, soils were excavated to depths of approximately 5 feet below existing grade and compacted fill soils were used to backfill the excavation area for the building foundation.
- During development of the 2310 South Redhill Avenue building, approximately 9 feet of fill was placed in the building pad area and fill soils were backfilled up to 15 feet beyond the limit of the building foundation (GEO 2019).
- The area of the 2320 South Redhill Avenue building pad was excavated to approximately 10 to 13 feet below the existing grade. The foundation was stabilized with approximately 24 inches of gravel and approximately 13 feet of artificial fill was placed under the building and up to 5 feet beyond the building foundations.
- During removal of an underground storage tank located between 2310 and 2320 South Redhill Avenue buildings, approximately 10 feet of crushed miscellaneous base and approximately 5 feet of onsite soils were backfilled into the previous underground storage tank location.

4.6 ENERGY

Electricity

The Southern California Edison Company (SCE) is the electrical purveyor in the City of Santa Ana. SCE provides electricity service to more than 14 million people in a 50,000 square-mile area of central, coastal and Southern California. California utilities are experiencing increasing demands that require modernization of the electric distribution grid to, among other things, accommodate two-way flows of electricity and increase the grid's capacity. SCE is in the process of implementing infrastructure upgrades to ensure the ability to meet future demands. In addition, as described by the Edison International 2018 Annual Report, the SCE electrical grid modernization effort supports implementation of California Senate Bill 32 that requires the state to cut greenhouse gas emissions 40 percent below 1990 levels by 2030 in order to help address global climate change. It describes that in 2018 Approximately 35% of power that SCE delivered to customers in 2018 came from renewable sources (SCE 2019).

The Project site is currently served by the electricity distribution system that exists adjacent to the Project site along Warner Avenue.

Natural Gas

The Southern California Gas Company (SoCalGas) is the natural gas purveyor in the City of Santa Ana and is the principal distributor of natural gas in Southern California. SoCalGas estimates that gas demand will decline at an annual rate of 0.5 percent from 2018 to 2035 due to modest economic growth, mandated energy efficiency standards and programs, renewable electricity goals, and conservation savings linked to advanced metering infrastructure (CGEU 2018). The gas supply available to SoCalGas is regionally diverse and includes supplies from California sources (onshore and offshore), Southwestern U.S. supply sources, the Rocky Mountains, and Canada (CGEU 2018). SoCalGas designs its facilities and supplies to provide continuous service during extreme peak demands and has identified the ability to meet peak demands through 2035 in its 2018 report (CGEU 2018).

The Project site is currently served by the natural gas distribution system that exists within the roadways that are adjacent to the Project site.

4.7 GEOLOGY AND SOILS

Regional Setting. The Project site is generally located within the Peninsular Ranges Geomorphic Province of California, at the eastern edge of the Los Angeles Sedimentary Basin. The Los Angeles Basin is a northwest-plunging synclinal sedimentary deposit that is bounded to the south of the Project site by the broadly uplifted coastal mesa of Newport Beach and the San Joaquin Hills, to the north by the foothills of the Santa Ana mountain range (GEO 2019).

The Project site is located on young alluvial fan materials that include previous floodplain deposits. A channelized portion of the Peters Canyon Creek passes approximately two miles away from the site to the east. The creek drains into Upper Newport Bay located south of the site (GEO 2019).

Faults and Ground Shaking. The Project site is not located within a State of California Earthquake Fault Zone and no active faults are known to cross the site. The closest known active faults are associated with the San Joaquin Hills Fault, located approximately 1.5 miles from the site; the Newport-Inglewood Fault Zone, approximately 8.4 miles southwest of the site; and the Elsinore Fault Zone, approximately 13.2 miles northeast of the site (GEO 2019).

However, all of southern California is seismically active. The amount of motion expected at a building site can vary from none to forceful depending upon the distance to the fault, the magnitude of the earthquake, and the local geology. Greater movement can be expected at sites located on poorly consolidated material such as alluvium located near the source of the earthquake epicenter or in response to an earthquake of great magnitude.

Soils. The Geotechnical Report describes that the site is underlain by older artificial fill soils and Quaternary aged young alluvial fan deposits. Older artificial fill was observed in the field explorations up to 7.5 feet below existing grade and consist of slightly moist to moist clays and silts with variable amounts of sand. The Quaternary young alluvial fan deposits underlie the older artificial fill, and consist of moist to wet, medium stiff to hard clays with variable sand content, as well as loose to medium dense, moist to wet clayey and silty sands to the maximum explored depth of approximately 50 feet below existing grade (GEO 2019). Areas of previous excavation and fill range from 5 feet to 13 feet below the existing grade.

Liquefaction, Lateral Spreading, Settlement, and Subsidence. The Geotechnical Report identifies that the Project site is located within a liquefaction hazard zone. Onsite soils include relatively isolated loose to medium dense sand layers, generally located approximately 40 to 50 feet below existing grade that are considered susceptible to liquefaction. In addition, the depth of groundwater is in the range of 24 to 33 feet below ground surface (bgs), but the historic high groundwater is approximately 10 feet below the existing grade (GEO 2019). The Geotechnical Report describes that based on the relatively flat topography of the site, lack of a free face nearby and general lack of potentially liquefiable layers in the upper 40 feet, the potential for lateral spreading on the site is low (GEO 2019).

Ground subsidence is the gradual settling or sinking of the ground surface with little or no horizontal movement. As described in the General Plan Seismic Safety Element, the potential for area and focal ground subsidence due to earthquakes is relatively low in Santa Ana. In addition, the Project site is not located within or near a potential subsidence area, as shown on Exhibit 4, Potential Subsidence Areas, in the General Plan Seismic Safety Element.

Expansive Soils. the onsite soils consist of moist to wet, medium stiff to hard clays with variable sand content, as well as loose to medium dense, moist to wet clayey and silty sands. Due to the clay content in the onsite soils, the site has the potential for expansion (GEO 2019).

Paleontological Resources. The Project site is underlain by Quaternary aged young alluvial fan deposits and older artificial fill. Quaternary alluvial materials in Orange County are assigned a low paleontological resource sensitivity due to their relatively recent age (Eisentraut and Cooper 2002). Likewise, the Orange County General Plan Figure VI-9 shows that the Project site is not located within an area of paleontological sensitivity.

4.8 GREENHOUSE GAS

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The major concern with GHGs is that increases in their concentrations are contributing to global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most in the scientific community agree that there is a direct link between increased emissions of GHGs and long-term global temperature increases.

The principal GHGs are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). The Project site for is currently developed with 3 industrial buildings. Greenhouse gas emissions associated with the existing buildings is approximately 8,520.07 CO₂E, as detailed in Section 5.6, *Greenhouse Gas Emissions*.

4.9 HAZARDS AND HAZARDOUS MATERIALS

The existing light industrial buildings on the site were developed in 1979 and 1981. All three buildings were formerly occupied by Ricoh Electronics Inc, an imaging and electronics company. The Ricoh operation included a thermal processing area in the 2320 South Redhill Avenue building, a machine shop in the 2310 South Redhill Avenue building, and toner manufacturing in the 2300 South Redhill Avenue building. The site was vacated by Ricoh in 2018 and the buildings are partially re-occupied and used for storage, electronics recycling, and as temporary housing for the homeless (Phase I 2019).

Former Underground Storage Tanks

The Phase II ESA (Phase II 2018) describes that three former underground storage tanks (UST) were located in the southwest portion of the Project site, behind the 2300 South Redhill Avenue building. The 2018 Phase II testing in this former UST area identified that approximately 5 feet of soil, impacted with petroleum hydrocarbons (TPH) above residential screening levels, exists from 14 to 19 feet below the ground surface (bgs) within a 4,500 square foot area. The Phase II ESA estimates approximately 850 cubic yards of contaminated soil would require excavation and disposal from this portion of the site.

In addition, the Phase II identified that another previous UST located at the northeast corner of the 2310 South Redhill Avenue building that tested positive for TPH-(diesel) concentrations in excess of typical regulatory action levels. It is estimated that roughly 50 cubic yards of TPH contaminated soil would require excavation and offsite disposal.

Vapor Intrusion

As described previously, the Project site was previously used for thermal processing, toner manufacturing, and utilized hazardous materials onsite. The Limited Phase II Subsurface Investigation that was conducted in 2019 indicated no detectable levels of Volatile Organic Compounds (VOC) in soil gas, and the levels of petroleum hydrocarbons and VOC in soil do not exceed residential use standards (Hilman 2019).

Asbestos

Asbestos and asbestos-containing materials (ACMs) are considered both a hazardous air pollutant and a human health hazard. The risk to human health is from inhalation of airborne asbestos, which commonly occurs when ACMs are disturbed during such activities as demolition and renovation. The buildings within the Project site were constructed in 1979 and 1981 when asbestos containing materials were commonly used and the Phase I identified that asbestos containing material are possible on the site (Phase 1).

Lead

The chief concern related to lead-based paint is its cumulative effect on body systems, primarily when paint chips containing lead are ingested. Lead dust is of special concern because the smaller particles are more easily absorbed by the body. Common methods of paint removal, such as sanding, scraping, and burning, create excessive amounts of dust. Lead dust is especially hazardous to young children because they play on the floor and engage in a great deal of hand-to-mouth activity, increasing their potential for exposure. Due to the age of the onsite buildings, it is possible that lead-based paint and other lead containing materials are present in the buildings on the Project site.

John Wayne Airport

John Wayne Airport (JWA) is located approximately 2.2 miles southwest of the Project site under the primary aircraft approach corridor. The Project site is not located within JWA's Airport Safety Zone, as shown in Figure 5.7-1. In addition, the Project site is located outside of both the airport's actual (2018) and planned 60 CNEL contours (Figures 5.7-2 and 5.7-3 in Section 5.7, *Hazards and Hazardous Materials*).

However, the Project site is located within the AELUP Notification area for JWA (shown on Figure 5.7-4 in Section 5.7, *Hazards and Hazardous Materials*), within the JWA planning area boundary, and under the FAR Part 77 Notification Imaginary Surface area, but outside of the 200-foot high surface area (shown on Figure 5.7-5 in Section 5.7, *Hazards and Hazardous Materials*).

4.10 HYDROLOGY AND WATER QUALITY

Watershed

The Project site is in the Santa Ana River Watershed and the Newport Bay subwatershed. The Santa Ana River Watershed includes much of Orange County, much of western Riverside County, part of southwestern San Bernardino County, and a small portion of Los Angeles County. The watershed is bounded by the Santa Margarita watershed to the south, on the east by the Salton Sea and Southern Mojave watersheds, and on the north and west by the Mojave and San Gabriel watersheds, respectively. The watershed covers approximately 2,800 square miles in area with about 700 miles of rivers. The Santa Ana River extends 96 miles from the San Bernardino Mountains in San Bernardino County to the Pacific Ocean at the boundary between the Cities of Huntington Beach and Newport Beach.

The Santa Ana Watershed is subdivided into several smaller watersheds, and the Project site is in the Newport Bay Watershed. The Newport Bay Watershed spans 152 square miles from the foothills of the Santa Ana Mountains in the north to the Pacific Ocean in the south and from the Cities of Santa Ana and

Costa Mesa on the west to the City of Lake Forest on the east. Runoff from the Project site flows through existing storm drains to the nearby Barranca Channel, which drains to San Diego Creek (Reach 1), then Upper Newport Bay, and discharges to the ocean at Balboa Beach (WQMP 2019).

Water Quality

Water Quality Impairments: The San Diego Creek Reach 1 is included on the Section 303(d) List of Water Quality Limited Segments for: fecal coliform, nutrients, pesticides, sedimentation, selenium, and toxaphene. The Upper Newport Bay is included on the Section 303(d) List of Water Quality Limited Segments for: chlordane, copper, DDT, metals, nutrients, PCBs, sediment toxicity, and sedimentation. Additionally, the Lower Newport Bay (to which the Upper Newport Bay drains) is included on the Section 303(d) List of Water Quality Limited Segments for chlordane, DDT, nutrients, PCBs, pesticides, and sediment toxicity (WQMP 2019).

Selenium Concentration Area: The Project site is located within the Selenium Concentration Area identified by the Orange County Water District (OCWD), as shown on Figure 5.8-1 in Section 5.8, *Hydrology and Water Quality* (WQMP 2019). In the Newport Bay watershed, selenium derived from ancient marine sediments in local foothills accumulated over the last several thousand years in the Swamp of the Frogs, which stretched from Upper Newport Bay almost to Red Hill Avenue. This ancient swamp, though now drained and filled, has become an active source of selenium because of the high-water table in the area (Meixner 2004). Thus, virtually any activity that mobilizes groundwater to the surface has the potential to increase selenium contamination of surface waters in the Newport Bay watershed.

South Basin Groundwater Protection Project: The Project site is located within the South Basin Groundwater Protection Project area, as shown on Figure 5.8-1 in Section 5.8, *Hydrology and Water Quality*, which implements groundwater remediation due to a comingled plume of groundwater pollutants that was generated by more than 20 industrial sites (OCWA 2018). The plume occurs predominately in the shallow aquifer at 100-foot depth which flows into a deeper Principal Aquifer, bringing VOC contaminants with it (OCWA 2018). Due to this condition, infiltration of groundwater is not allowed within the South Basin Groundwater Protection Project area.

Tustin Marine Air Base: The Project site is located adjacent to the Tustin Legacy Specific Plan area, which was previously used as a Marine Air Base. Past Air Base operations have resulted in releases of hazardous substances within the upper 50 feet of the shallow aquifer beneath the air base (MCAS Tustin). Hazardous materials were reportedly used in construction of the base and helium purification for blimp use. Daily operation and support activities for helicopters that were used on the Base included the use, storage, transfer, and disposal of hazardous waste that included oil, solvents, fuel, hydraulic fluid, antifreeze, paint thinner, and sludge from cleaning tanks and fuel filters. The federal government is in the process of implementing remediation programs related to this contamination from past hazardous waste disposal and hazardous material spills within the Air Base (MCAS Tustin). Due to this condition, infiltration of groundwater may not be allowed within the Tustin Marine Air Base area.

Groundwater Basin

The Orange County Basin underlies an area of approximately 350 square miles, bordered by the Coyote and Chino Hills to the north, the Santa Ana Mountains to the northeast, the Pacific Ocean to the southwest, and terminates at the Orange County line to the northwest, where the aquifer system continues to the Central Basin in Los Angeles County (WSA 2019). The OC Basin is recharged primarily by four sources including local rainfall, storm and base flows from the Santa Ana River (SAR), purchased MWD imported water; and highly treated recycled wastewater. Basin recharge occurs largely in 4 recharge basins that are in or adjacent to the City of Anaheim.

Groundwater Supply

Groundwater from the Orange County Basin provides approximately 71 percent of the City's water supply. The remaining supply comes from the Metropolitan Water District (28 percent) and recycled water (1 percent). As described by the Water Supply Assessment (WSA) prepared for the Project, the water production capability of the basin has increased as a result of operation of the Groundwater Replenishment System in Fountain Valley, which turns wastewater into potable drinking water that is used for basin replenishment. The system increases local low-cost water supply reliability (WSA 2019).

Storm Drainage Facilities

The Project site is currently 75 percent impervious and 25 percent pervious (WQMP 2019). The existing topography of the project site is relatively flat and generally drains from the north to the south. Currently, the Project site drains northwest where flows enter an existing catch basin. The catch basin connects to a six-foot-high by ten-foot-wide culvert that directs flows to an 84-inch storm drain that flows southeast to a flood control basin. Drainage from the flood control basin is conveyed to the Barranca Channel that connects to San Diego Creek Reach 1 that drains to Newport Bay and the Pacific Ocean (WQMP 2019).

Soil Infiltration

Onsite soils infiltration testing was performed during preparation of the Geotechnical Report, which determined that soils have an infiltration rate of 0.15 inches per hour which, is identified as a low infiltration rate and considered infeasible to support drainage on the Project site (GEO 2019).

Flood Zone, Tsunami, Seiche

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for the Project area (06059C0279J) shows that the Project site is located within "Zone X," which is an area of minimal flood hazard potential outside of the 0.2 percent annual chance flood. The Project site is over 8.5 miles from the Pacific Ocean, and outside of the Tsunami Hazard Zone identified by the California Department of Conservation (DOC 2019).

A seiche is a surface wave created when a body of water is shaken, usually by earthquake activity. Seiches are of concern relative to water storage facilities because inundation from a seiche can occur if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water. There are no water bodies in the vicinity of the Project site, and no existing risks related to seiche flood hazards exist on or near the site.

4.11 LAND USE AND PLANNING

Project Site

The Project site has a General Plan Land Use designation of PAO (Professional & Administration Office) and is zoned M-1 (Light Industrial), as shown on Figures 5.9-1 and 5.9-2. As described previously, the Land Use Element states that the existing PAO land use designation applies to those areas where professional and/or administrative offices are predominant, or where such development is being encouraged. The floor area ratio intensity standard applicable to this land use designation ranges from 0.5 to 1.0. The PAO areas are intended to provide a unique environment for office development in those areas of the City where office uses are the predominant land use and encourage major employment centers at locations which significantly lessen the impact to the City's local street system. The PAO designation includes a range of floor area ratios to differentiate development intensity and character in relation to adjacent land uses.

Surrounding Land Uses

The Project site is located within an urban area that is either fully developed or planned for urban development.

Northwest and Southwest: The site is bounded to the northwest and southwest by existing business park and industrial warehouse buildings, associated parking lot areas, and a portion of an abandoned BNSF rail line spur.

North: Warner Avenue (a 6-lane arterial roadway) bounds the site to the north, followed by commercial office uses. Areas across Warner Avenue from the site are within the City of Tustin.

East: Red Hill Avenue (a 6-lane arterial roadway) is adjacent to the site on the east. Areas across Red Hill Avenue from the site are within the City of Tustin and Tustin Legacy Specific Plan area.

Tustin Legacy Specific Plan

The Tustin Legacy Specific Plan area was formerly used as a U.S. Marine Corps Air Station (MCAS) and is a large area that is under redevelopment and planned by the City of Tustin to become a new mixed-use urban center providing: single-family residential, multi-family residential, mixed-use, commercial retail, office, schools, parks, and other public facilities.

The Tustin Legacy Land Use Plan consists of 13 Planning Areas and numerous sub-planning areas. Areas directly across Red Hill Avenue from the Project site are within Planning Area 9-12, which is also identified as Neighborhood E – Employment Center. The Tustin Legacy Specific Plan describes that the employment center is to provide a business park setting for a full range of professional offices, research & development, and commercial uses. Currently, this area has been approved for development of 870,000 square feet of modern creative office space and supporting retail that includes: a food hall, a conference center, and outdoor multi-use space. Of this, 470,000 square feet of office space, the food hall, and conference center has been developed and is operational.

Additionally, areas across the street from the site, on the northeast corner of Red Hill Avenue and Warner Avenue, are within Planning Area 1, Education Village (within Neighborhood A), which is designated to provide a range of public-serving uses that include education, training, park and recreation, and specific social service functions.

The Tustin Legacy Planning Areas further west, beyond Planning Areas 9-12 and 1, are identified for both single and multi-family residential uses. The Tustin Legacy is currently partially developed with these new planned uses, including residential units along Edinger Avenue, The District at Tustin Legacy commercial center at the northwest corner of Jamboree Road and Barranca Parkway, and public facilities to the northwest of the Red Hill and Warner intersection (Orange County Sheriff Training Academy, Orange County Animal Shelter). Overall, the Tustin Legacy Specific Plan is a large planned development area that is across Red Hill Avenue from the Project site that is planned to include urban development of residential, mixed-uses, commercial, and office space.

Irvine Business Complex

Areas 0.35 miles to the south and south east of the Project site, across from Dyer Road/Barranca Parkway are in the City of Irvine, within the Irvine Business Complex (IBC), which is a 2,800-acre master planned community that is a developed urban area. Typical land uses within the IBC include medium- to high-density residential, commercial, institutional, professional/medical offices, industrial manufacturing, research and development, support service retail, restaurants, and hotel/motels. Since early 2004, there has been substantial redevelopment of nonresidential uses to high-density, urban-style residential development sites

within in the IBC (IBC 2009). These areas have been traditionally occupied by smaller-scale office and industrial operations and have been evolving to mixed-use neighborhoods (IBC 2009).

The historical development and use of the Project site for industrial manufacturing was consistent with the original land uses within the adjacent IBC. The Project site is now being proposed for redevelopment into a mixed-use neighborhood, as described in Section 3.0, *Project Description*.

Since original development of the Project site was consistent with development in the MCAS and the IBC, it follows that current and future land use trends within the Tustin Legacy Specific Plan area and the IBC could influence land uses within its vicinity.

John Wayne Airport

John Wayne Airport (JWA) is located approximately 2.2 miles southwest of the Project site under the primary aircraft approach corridor, within the AELUP Notification area and planning area boundary, as detailed in Section 5.7, *Hazards and Hazardous Materials*.

Because the Project site is located within the AELUP Notification area and planning area boundary (shown on Figures 5.7-4 and 5.7-5 in Section 5.7, *Hazards and Hazardous Materials*), and the Project proposes a General Plan Amendment and a zone change, the City is required to refer the proposed Project to the ALUC for review, pursuant to the California Public Utilities Code Section 21676, as listed previously.

4.12 NOISE

Noise: The primary sources of noise in the Project area includes those related to urban development, such as vehicles on roadways and noise from operating land uses. In the Project area, current onsite noise levels are generated by vehicles and existing industrial uses. Ambient noise measurements identify that existing noise levels on and adjacent to the Project site are between 58.9 dBA CNEL and 65.1 dBA CNEL.

As described previously in Section 5.9, *Land Use and Planning*, the Project site is located within the JWA Planning Area's FAR Part 77 Notification Surface; but outside of the airport's 60 CNEL Contour.

Vibration: Aside from periodic construction work that may occur in the vicinity of the Project area, other sources of groundborne vibration include heavy-duty vehicular travel (e.g., refuse trucks and delivery trucks) on area roadways. Trucks traveling at a distance of 50 feet typically generate groundborne vibration velocity levels of around 63 VdB (approximately 0.006 in/sec PPV) and could reach 72 VdB (approximately 0.016 in/sec PPV) when trucks pass over bumps in the road.

4.13 POPULATION AND HOUSING

Population

The California Department of Finance estimates that the City of Santa Ana 2019 population is 337,716 persons, representing 10.8 percent of Orange County's total population. The Department of Finance data shows that the City's population increased by 13,069 residents (4.0 percent) between 2010 and 2019. In comparison the City of Tustin's population grew 7.7 percent, the City of Irvine's population grew by 31.9 percent, and the County of Orange had a 7.1 percent increase in population between 2010 and 2019, as shown on Table 4-1.

Table 4-1: Cities and County Population Estimates and Increase, 2010 - 2019

	2010	2019	2010 – 2019 Increase
City of Santa Ana	324,647	337,716	4.0%
City of Tustin	75,540	81,369	7.7%
City of Irvine	212,375	280,202	31.9%
County of Orange	3,010,232	3,222,498	7.1%

Source: CA Dept of Finance, E-5 Population and Housing Estimates, 2010 - 2019.

Additionally, it is projected that the population of the County will increase to 3,531,540 by 2040, which would be an increase of 9.6 percent over the County's 2019 population. As shown in Table 4-2, the Center for Demographic Research projects that the population of the City of Santa Ana to increase to 362,863 residents by 2040, which is a 7.4 percent (25,147 resident) increase over the City's 2019 population. However, the Cities of Tustin and Irvine are anticipated to have greater population increases of 11.3 percent and 14.7 percent.

Table 4-2: Cities and County Population Projections, 2019 - 2040

	2019	2040	2019 – 2040 Increase
City of Santa Ana	337,716	362,863	7.4%
City of Tustin	81,369	90,576	11.3%
City of Irvine	280,202	321,283	14.7%
County of Orange	3,222,498	3,531,540	9.6%

Source: Center for Demographic Research, Orange County Jurisdiction Demographics 2019.

Housing

The California Department of Finance estimates that the City of Santa Ana contained 78,563 housing units in 2019. As shown in Table 4-3, of the housing units within the City of Santa Ana 45.4 percent are detached single family housing units and 32.4 percent are multi-family units within buildings containing more than five units.

The housing types in Santa Ana compared to those in the Cities of Tustin and Irvine and the entire County are provided in Table 4-3, which shows that the County has a slightly higher percentage of detached single-family housing units and a lower percentage of multi-family housing units than the City. Conversely, the Cities of Tustin and Irvine have lower percentages of single-family housing, similar rates of multi-family units within buildings containing more than five units, and higher rates of attached single-family and multi-family 2-4 attached units.

Table 4-3: Cities and County Housing Estimates by Type in 2019

Unit Type	City of Santa Ana Housing Units		City of Tustin Housing Units		City of Irvine Housing Units		County of Orange Housing Units	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Single-family detached	35,692	45.4%	9,867	35.1%	41,798	39.5%	554,030	50.2%
Single-family attached	5,799	7.4%	3,578	12.7%	16,722	15.8%	131,446	11.9%
Multi-family (2-4 units)	7,563	9.6%	4,050	14.4%	6,696	6.3%	94,403	8.5%
Multi-family (5+ units)	25,460	32.4%	9,741	34.6%	39,477	37.3%	290,766	26.3%
Mobile homes	4,049	5.2%	909	3.2%	1,165	1.1%	33,519	3.0%
Total	78,563	100%	28,145	100%	105,858	100%	1,104,164	100%

Source: CA Depart of Finance, E-5 Population and Housing Estimates, 2010 – 2019.

The Census Factfinder 2017 information for the City identifies that married family households reside in 54.1 percent of the City's housing units and 53.1 percent of these families have household sizes of 4 or more persons. Likewise, the average household size is 4.4 persons per dwelling unit. The information also states that of the renter-occupied units 58.0 percent have 1 occupant or less per room, 21.9 percent have between 1.01 and 1.5 occupants per room, and 20.1 percent have more than 1.5 persons per room. In addition, the SCAG 2019 Local Profile for the City of Santa Ana states that in 2018, 46.9 percent of all City households had 3 people or fewer.

The California Department of Finance population and housing estimates for 2019 detail that the City of Santa Ana has a vacancy rate of 4.1 percent. In comparison, the vacancy rate in the City of Tustin is 4.9 percent, the rate in Irvine is 6.2 percent, and the Countywide rate is higher at 5.2 percent. The California Department of Finance estimates that number of housing units in the City increased by 1,617 units (2.1 percent) between 2010 and 2019. The City has developed fewer new housing units in comparison to the Cities of Tustin and Irvine and County, as shown in Table 4-4 that provides the California Department of Finance housing estimates for the City of Santa Ana and Orange County in 2010 and 2019. The City of Santa Ana is largely built out and most of the development within the City is similar to the proposed Project and consists of redevelopment of existing developed land uses. Conversely, the Cities of Tustin and Irvine and the County of Orange contains much larger areas of vacant developable land that has accommodated the past housing increases shown in Table 4-4.

Table 4-4: Cities and County Housing Increase, 2010 - 2019

	2010	2019	2010 – 2019 Increase
City of Santa Ana	76,919	78,536	2.1%
City of Tustin	26,467	28,145	6.3%
City of Irvine	81,110	105,858	30.5%
County of Orange	1,046,118	1,104,164	5.5%

Source: CA Depart of Finance, E-5 Population and Housing Estimates, 2010 - 2019.

Employment

The 2019 SCAG Local Profile for the City of Santa Ana identifies that in 2017, there were 163,503 jobs in the City of Santa Ana. Of these jobs, 23.1 percent are in the professional sector, 18.2 percent are in the education sector, and 11.4 percent are in the manufacturing sector. As shown in Table 4-5 the types of jobs within Santa Ana, Tustin, and Irvine are similar with the most jobs in the professional, education, and manufacturing sectors.

Table 4-5: Santa Ana, Tustin, and Irvine Jobs by Sector, 2017

Job Sector	City of Santa Ana	City of Tustin	City of Irvine
Professional	23.1%	17.7%	26.3%
Education	18.2%	16.0%	16.8%
Manufacturing	11.4%	11.0%	13.8%
Retail	8.5%	12.8%	8.5%
Leisure	8.0%	13.2%	8.9%
Wholesale	7.0%	5.9%	4.7%
Finance	7.0%	9.3%	9.0%
Construction	5.3%	6.4%	3.9%
Public	4.1%	1.0%	0.8%
Other	2.7%	3.8%	1.9%
Transportation	2.5%	1.4%	1.5%
Information	2.3%	1.3%	3.5%

Source: 2017 SCAG Local Profile for the City of Santa Ana, City of Tustin, and City of Irvine.

In addition, the Economic and Fiscal Analysis prepared for the proposed Project describes that there are 119,676 jobs within two-miles of the Project site within the Cities of Santa Ana, Tustin, and Irvine and that many of these jobs exist within the following sectors: construction, manufacturing, wholesale trade, finance and insurance, professional, scientific/technical services, administrative support, health care, retail, and accommodation services (AECOM 2019).

The SCAG 2019 Local Profile for Santa Ana identifies that only 20.8 percent of Santa Ana residents work and live in the City, while 79.2 percent commute to other places. Of the commuters residing in Santa Ana the largest percentage commute to the City of Irvine (12.2 percent), Anaheim (6.8 percent), Orange 5.5 (percent), and Costa Mesa (5.3 percent).

For Tustin, the SCAG 2019 Local Profile shows that only 7.3 percent of Tustin residents work and live in the City, while 92.7 percent commute to other places. Of the commuters residing in Tustin the largest percentage commute to the City of Irvine (18.6 percent), Santa Ana (10.4), Anaheim (5.5 percent), and Orange 5.2 (percent).

In comparison, the SCAG 2019 Local Profile for Irvine identifies that 30.6 percent of residents work and live in the City, while 69.4 percent commute to other places. Of the commuters residing in Irvine the largest percentage commute to the City of Santa Ana (6.5 percent), Newport Beach (5.6 percent), and Los Angeles (5.5 percent).

Jobs – Housing Ratio

SCAG considers an area balanced when the jobs-housing ratio is 1.36; communities with more than 1.36 jobs per dwelling unit are considered jobs-rich; those with fewer than 1.36 are housing rich (SCAG 2004). As shown in Table 4-6, the City of Santa Ana is jobs rich with 2.08 jobs per housing, which is anticipated to increase to 2.13 jobs per housing unit by 2040. Similarly, the Cities of Tustin and Irvine are anticipated to continue to be jobs rich. In 2040, the City of Tustin is projected to have 2.38 jobs per housing units and the City of Irvine is projected to have 2.59 jobs per housing unit. Hence, the Santa Ana, Tustin, and Irvine region of the County is jobs rich; and the Project site is located at the center of this regional location.

In contrast, Table 4-6 shows that Orange County as a whole has a jobs-housing ratio of 1.56, which is closer to the SCAG preferred jobs – housing ratio of 1.36. However, the SCAG projections anticipate that the

number of jobs within the County will increase more than the number of housing units (10 percent increase in jobs versus a 4.4 percent increase in housing units); thus, the County's jobs – housing ratio is anticipated to increase to 1.65 by 2040.

Table 4-6: Jobs – Housing Balance

	Year	Employment	Housing Units	Jobs – Housing Ratio
City of Santa Ana	Existing	163,503	78,563	2.08
	2040 (projected)	166,000	78,000	2.13
City of Tustin	Existing	50,169	28,145	1.78
	2040 (projected)	66,400	27,900	2.38
City of Irvine	Existing	269,502	105,858	2.55
	2040 (projected)	320,000	123,400	2.59
County of Orange	Existing	1,726,003	1,104,164	1.56
	2040 (projected)	1,898,900	1,152,300	1.65

Source: SCAG 2019 Local Profiles for Santa Ana and Orange County, SCAG 2016 Growth Projections, CA Depart of Finance, E-5 Population and Housing Estimates, 2010 - 2019.

4.14 PUBLIC SERVICES

Fire

Fire protection and emergency medical services in the City of Santa Ana are provided by the OCFA through a contract for services. The OCFA provides fire suppression, emergency medical, rescue, fire prevention, hazardous materials coordination, and wildland management services. OCFA serves 23 cities in Orange County and all unincorporated areas. Within the City of Santa Ana, OCFA provides services from 10 city-owned fire stations. There are currently 6 city-owned fire stations located within 3.5 miles of the Project site. Station 79, which is located 1 mile from the Project site is the first responding unit. The location, equipment, and staffing of the fire stations near the Project site are provided in Table 4-7.

As provided by the OCFA 2018 Statistical Annual Report, there were 33,983 calls for service from the 10 fire stations in the City in 2018. Of the calls for service, 65 percent (21,952) were for emergency medical calls, 1.7 percent (565) were for fire incidents, and 13.8 percent (4,703) were for other incidents, which includes: cancelled service calls, ruptures, hazardous conditions, false alarms, and miscellaneous calls.

OCFA's Standard of Cover for fire services in urban areas, such as the City of Santa Ana, are listed below. Response times are from receipt of the service call to a unit on scene:

- First-in engines should arrive on-scene to medical aids and/or fires within 7 minutes and 20 seconds 80 percent of the time.
- First-in truck companies should arrive on-scene to fires within 12 minutes 80 percent of the time.
- First-in paramedic companies should arrive on-scene at all medical aids within 10 minutes 80 percent of the time.

Table 4-7: Santa Ana Fire Stations Near the Project Site

Fire Station	Location	Distance from Site	Equipment	Staffing
Station 79	1320 East Warner	1 mile	1 Paramedic Engine	1 Fire Captain, 1 Engineer, 2 Firefighters
Station 37	15011 Kensington Park Avenue	1.8 miles	1 Paramedic Engine	1 Fire Captain, 1 Engineer, 2 Firefighters
Station 6	3180 Barranca Parkway	2.2 miles	1 Paramedic Engine	1 Fire Captain, 1 Engineer, 2 Firefighters
Station 28	17862 Gillette Avenue	2.5 miles	1 Paramedic Engine, 1 Paramedic Truck	2 Fire Captain, 2 Engineer, 4 Firefighters
Station 74	1427 S. Broadway Street	2.8 miles	1 Paramedic Engine	1 Fire Captain, 1 Engineer, 2 Firefighters
Station 76	950 W. MacArthur Boulevard	3.5 miles	1 Paramedic Truck	1 Fire Captain, 1 Engineer, 2 Firefighters

Source: OCFA 2019.

Station 79, which is located 1 mile from the Project is the first responding station to the site. In 2018, Station 79 had 1,995 incidents in its first response area with an on-scene response time of 7:42 minutes, 80 percent of the time. Station 37, which is the 2nd responding station at 1.8 miles from the Project site had 1,656 incidents in its first response area in 2018 with an on-scene response time of 8:12 minutes, 80 percent of the time.

Law Enforcement

The Santa Ana Police Department provides police services throughout the City, including the Project area. The Police Department headquarters is located west of City Hall (60 Civic Center Plaza), which is approximately 4.7 miles northwest of the Project site. The Police Department also has a Southeast Substation located at 1780 East McFadden Avenue, which is approximately 2.2 miles from the Project site; and a Westend Substation located at 3750 West McFadden Avenue, which is 6.4 miles from the Project site. The Police Department has divided the City into two policing divisions; East and West. These are further divided into four districts overseen by two District Commanders. The Project site is located within the Southeast District, which consists of the City of Santa Ana lands that are south of First Street and east of Flower Street.

In 2018, the Santa Ana Police Department had 565 personnel, which included 316 sworn and 249 non-sworn positions. Based on the California Department of Finance estimate that 339,192 residents lived within the City in 2018, the City's sworn officer to population ratio is 1.07 officers per 1,000 population.

In 2018, officers responded to 125,681 calls for service and initiated 48,365 policing activities, which totals 174,046 policing activities. Within 2018, the Police Department had the following responses times per service call priority:

- Priority One – 8 minutes 10 seconds
- Priority Two – 11 minutes 21 seconds
- Priority Three – 31 minutes 46 seconds

- Priority Four – 35 minutes 56 seconds
- Priority Five – 47 minutes 39 seconds

School Services

The Project site is located within the Santa Ana Unified School District (SAUSD) boundary, which serves a 24 square mile area and has a total of 57 schools, including: thirty-six elementary schools, nine intermediate schools, and six high schools, three educational options secondary schools school, two early college high schools, and one special needs development center (SAUSD 2019).

Santa Ana Unified School District's school facilities has an enrollment of 51,482 students in the 2018/2019 school year (CDE 2019). The Project site is in the attendance areas of James Monroe Elementary School (417 E. Central Ave), which is approximately 1.8 miles from the Project site; McFadden Intermediate (2701 S. Raitt Street), which is approximately 3.8 miles from the Project site; and Century High School (1401 S. Grand Avenue), which is approximately 1.8 miles from the Project site (SAUSD 2019). Table 4-8 shows the total capacity, the 2018-2019 school year enrollments, and the remaining capacity of the schools that would serve students residing on the Project site. As shown on Table 4-8, each of the schools have remaining capacity to serve between 275 and 986 additional students.

Table 4-8: Existing School Capacity of Schools Serving the Project Site

School	Total Capacity	2018-19 Enrollment	Remaining Capacity
James Monroe Elementary	575	300	275
McFadden Intermediate	1,512	1,184	328
Century High	2,646	1,660	986
Total	4,733	3,144	1,589

Sources: cde.ca.gov and SAUSD Facilities Master Plan

4.15 PARKS AND RECREATION

The Open Space, Parks, and Recreation Element of the Santa Ana General Plan states that the City has approximately 400 acres of public parks and recreational space. Based on the 2019 population estimate of 337,716 residents, the City has approximately 1.2 acres of public park and/or recreational space per every 1,000 residents. The closest park and recreation facilities (within 3 miles of the project site) in the City of Santa Ana that would be most utilized by the residents of the Project are listed in Table 4-9. As shown, the City has 11 existing parks that provide 81.88 acres of parkland within 3 miles of the Project site.

Table 4-9: Santa Ana Park and Recreation Facilities Within Three Miles of the Project Site

Park and Address	Amenities	Acreage	Miles from Project Site	Travel Time from Project Site*
Delhi Park 2314 S. Halladay	Ball Diamond, Basketball Courts, Multi-purpose Field, Parking, Playground, Restrooms, Handball courts	10.40 acres	1.4 miles	Driving: 5 minutes Walking: 28 minutes
Maple & Occidental Maple and Occidental St.	Exercise Equipment	0.43 acre	2.2 miles	Driving: 8 minutes Walking: 42 minutes
Memorial Park 2102 S. Flower	Ball Diamond, Basketball Courts, Handball courts. Multi-purpose Field, Parking, Playground, Picnic	17.0 acres	2.5 miles	Driving: 8 minutes Walking: 48 minutes

Park and Address	Amenities	Acreage	Miles from Project Site	Travel Time from Project Site*
	Tables, Restrooms, Swimming Pool, Exercise Equipment			
Madison Park 1528 S Standard Avenue	Ball Diamonds, Basketball Courts, Concession Stand, Multipurpose Field, Multi-purpose Court, Playground, Parking, Picnic Tables, Restrooms	6.06 acres	2.5 miles	Driving: 9 minutes Walking: 49 minutes
Sandpointe Park 3700 S. Birch Street	Restrooms, Basketball Courts, Hiking & Exercise Trail, Multi-purpose Field, Playground, Picnic Tables, Tennis Courts, Volleyball	6.63 acres	2.8 miles	Driving: 9 minutes Walking: 57 minutes
Segerstrom Triangle 1000 W. Hemlock Wy.	Open Space	1.22 acres	3.0 miles	Driving: 9 minutes Walking: 59 minutes
Pacific Electric	Playground, Picnic Shelter/Tables, Restrooms, Exercise Equipment, Community Garden	1.39 acres	2.9 miles	Driving: 10 minutes Walking: 56 minutes
Lillie King Park 500 West Alton Avenue	Multi-purpose Field, Parking, Playground, Picnic Tables	9.60 acres	3.0 miles	Driving: 10 minutes Walking: 57 minutes
Bomo Koral Park 900 W MacArthur Boulevard	Ball Diamonds, Multi-purpose Field, Parking, Picnic tables	10.40 acres	3.0 miles	Driving: 10 minutes Walking: 62 minutes
Prentice Park 1801 E. Chestnut Ave.	Playgrounds, picnic area	18.75 acre	3.0 miles	Driving: 10 minutes Walking: 63 minutes
Total Acreage of Parkland		81.88 acres		

Source: City of Santa Ana Parks, Recreation and Community Services Website, 2019.

* Per Google Earth.

In addition, there are 9 existing City of Tustin park facilities that provide 92.9 acres of parkland and 3 existing City of Irvine park facilities within 3 miles of the Project site that provide 63.6 acres of park and recreation space, as listed in Table 4-10. Thus, the total existing parkland within 3 miles of the Project site is 238.38 acres.

Table 4-10: Tustin and Irvine Park and Recreation Facilities Within Three Miles of the Project Site

Park and Address	Amenities	Acreage	Miles from Project Site	Travel Time from Project Site*
City of Tustin Parks				
Tustin Legacy Park Red Hill Avenue and Barranca Parkway	Passive Park, with Trails, and Open Space Area	26 acres	0.7 mile	Driving: 3 minutes Walking: 13 minutes
Veterans Sports Park Lansdowne Road and Valencia Avenue	Basketball, Football, Racquetball, Soccer Softball, Tennis, Volleyball, Open Space, Veterans Memorial, Playground	31.5 acres	0.9 mile	Driving: 3 minutes Walking: 15 minutes
Centennial Park 14722 Devonshire Avenue	Basketball Court, BBQs, Large Turf Area, Picnic Tables, Playground, Restrooms, Sand Volleyball Court	8.0 acres	1.6 miles	Driving: 5 minutes Walking: 32 minutes
Victory Park 3300 Park Avenue	Large Turf Area, Pavilion, Picnic Shelters	4.7 acres	1.8 miles	Driving: 6 minutes Walking: 36 minutes

Park and Address	Amenities	Acreage	Miles from Project Site	Travel Time from Project Site*
City of Tustin Parks				
	Playground, Reflection Area, Restrooms			
Frontier Park 1400 Mitchell Avenue	Disc Golf Course, Fitness Equipment, Picnic Shelters and Tables, Playground, Restrooms, Water Feature Play Area	4.5 acres	2.0 miles	Driving: 7 minutes Walking: 40 minutes
Magnolia Tree Park 2274 Fig Tree Drive	Basketball Court, Picnic Shelters and Tables, Playground, Restrooms, Tennis Court	4.2 acres	2.5 miles	Driving: 7 minutes Walking: 46 minutes
Pine Tree Park 1402 Bryan Street	Large Turf Area, Picnic Shelters, Picnic Tables, Playground, Restrooms, Sand Volleyball Court, Skate park, Volleyball	4.2 acres	2.7 miles	Driving: 10 minutes Walking: 56 minutes
Peppertree Park 230 W. 1st Street	Baseball / Softball Diamond, BBQs, Bocce Ball Court, Horseshoe Pit, Parking, Picnic Shelters and Tables, Playground, Restrooms, Water Feature Play Area	5.5 acres	3.0 miles	Driving: 10 minutes Walking: 67 minutes
Camino Real Park 13602 Parkcenter Lane	Basketball Court, Picnic Shelters and Tables, Playground, Restrooms	4.3 acres	3.0 miles	Driving: 10 minutes Walking: 66 minutes
Total of Tustin Parkland Within 3 Miles of the Project Site		92.9 acres		
City of Irvine Parks				
Plaza Park 610 Paseo Westpark	Playground, Soccer Fields, Baseball Field, Group Picnic Area	7.7 acres	2.5 miles	Driving: 7 minutes Walking: 51 minutes
Sweet Shade Park 15 Sweet Shade	Multi-Use Building, Playground, Basketball Courts, BBQs, Group Picnic Area	7.9 acres	2.7 miles	Driving: 8 minutes Walking: 47 minutes
Bill Barber Park 4 Civic Center Plaza	Drinking Fountains, Playground, Amphitheater, Concession Stand, Soccer Fields, Tennis Courts, Baseball Courts, Trail Access, Batting Cages, BBQ, Group Picnic Areas	48 acres	3.0 miles	Driving: 10 minutes Walking: 50 minutes
Total of Irvine Parkland Within 3 Miles of the Project Site		63.6 acres		

Source: City of Tustin Parks, Recreation and Community Services Website, 2019; City of Irvine Park Locator Map, 2019.

* Per Google Earth.

4.16 TRANSPORTATION

Roadways. Access to the Project site is provided by Red Hill Avenue and Warner Avenue, which are both arterial roadways. Red Hill Avenue has a speed limit of 50 mph near the Project site, and 45 mph north of Valencia Avenue. Warner Avenue has a speed limit of 45 mph west of Red Hill Avenue and 50 mph east of Red Hill Avenue. Red Hill Avenue is a north-south roadway connecting Interstate 405 (I-405) to the south and Interstate 5 (I-5) to the north.

Transit. The Project site is served by Orange County Transportation Authority (OCTA) Bus Routes 71 (Red Hill) and 72 (Warner), as well as Metrolink Stationlink Route 472 (Red Hill). Bus routes 71 and 72 provide service seven days a week. Route 472 provides service Monday thru Friday. Other Bus Routes servicing

areas within the project study area are OCTA bus routes 55, 59, 70, 76, 86, Intracounty OC Express Route 213/A, Metrolink Stationlink Route 463, and the IShuttle 400A, 401B, and 405F.

Pedestrian and Bicycle Facilities. Both Red Hill Avenue and Warner Avenue have existing sidewalks. Red Hill Avenue has an existing bicycle lane between Barranca Parkway and Reynolds Avenue, and Warner Avenue has an existing bicycle lane to the east of Red Hill Avenue.

4.17 TRIBAL CULTURAL RESOURCES

A Sacred Lands File search was requested from the NAHC on February 1, 2019. The NAHC responded on February 6, 2019, stating that there are no known/known sacred lands within 0.5 mile of the Project area, and requested that 18 Native American individuals be contacted for further information regarding the general area vicinity.

In compliance with SB 18, AB 52, and the NAHC request, on September 24, 2019, the City sent letters to the following Native American tribes that may have knowledge regarding tribal cultural resources in the Project vicinity.

- Agua Caliente Band of Cahuilla Indians
- Gabrieliño-Tongva Tribe
- Gabrieleño/Tongva San Gabriel Band of Mission Indians
- Gabrieleño Band of Mission Indians – Kizh Nation
- Gabrieleño/Tongva Indians of California Tribal Council
- Juaneno Band of Mission Indians
- Juaneno Band of Mission Indians Acjachemen Nation
- Juaneno Band of Mission Indians Acjachemen Nation – Romero
- La Jolla Band of Luiseno Indians
- Pala Band of Mission Indians
- Pauma Band of Luiseno Indians
- Pechanga Band of Luiseno Indians
- Rincon Band of Luiseno Indians (2 contacts)
- San Fernando Band of Mission Indians
- San Luis Rey Band of Mission Indians
- Soboba Band of Luiseno Indians

4.18 UTILITIES AND SERVICE SYSTEMS

Water Supply and Demand

The City's water supply is a combination of imported water from the Metropolitan Water District of Southern California (MWD), groundwater from the Orange County Groundwater Basin (OC Basin), and recycled water. As shown on Table 4-11, in 2015 the City obtained 71.2 percent of water supply from groundwater, 27.8 percent of water from imported/purchased supplies, and 1.0 percent from recycled water sources.

Table 4-11: City of Santa Ana Actual Water Supply 2015

Source	Volume (acre-feet)	Percentage
OC Groundwater Basin	26,351	71.2%
Imported/Purchased	10,305	27.8%
Recycled	352	1.0
Total	37,008	100%

Source: 2015 UWMP.

The 2015 UWMP identified that water demands were 36,656 AF from July 2014 to June 2015, which is 352 AF less than the water supply shown in Table 4-11. Thus, sufficient water supply was available to meet demands. In addition, the 2015 UWMP highlights that 2010 UWMP anticipated water demands in 2015 to be much larger at 47,800 AF and detailed the ability of the City to meet the greater anticipated demand.

As shown in Table 4-12, the 2015 UWMP estimates that water supplies in the future are anticipated to be obtained through a similar mix of groundwater and imported water. The 2015 UWMP anticipates that the City's water supply will increase from 36,998 acre-feet (AF) in 2020 to 40,036 AF in 2040 (increase of 3,038 AFY) to meet the City's anticipated growth in water demands, which is an 8.2 percent increase.

Table 4-12: City of Santa Ana Projected Water Demand and Supply Projections (acre-feet)

Source	2020	2025	2030	2035	2040	2040 Percentage
OC Groundwater Basin	25,899	27,802	27,992	27,985	28,025	70.0%
Imported/Purchased	10,799	11,615	11,697	11,693	11,711	29.2%
Recycled	320	320	320	320	320	0.8%
Total	36,998	39,717	39,989	39,978	40,036	100%

Source: 2015 UWMP.

The 2040 projections anticipate that 70 percent of supply would be from the OC Basin and 29.3 percent from imported/purchased sources. The 2015 UWMP details that the available supply would meet the projected demand in single dry years and multiple dry years through 2040 with a planned demand increase of 6 percent due to diversified supply and conservation measures.

The 2015 UWMP also describes that water demands per capita have been decreasing in recent years due to new state and local regulations related to water conservation. The 2015 UWMP plan describes that the City used 83 gallons per capita per day (GPCD) in 2015, which exceeded the City's target of 116 GPCD for 2020.

Water Infrastructure

The City maintains 444 miles of transmission and distribution mains, 9 reservoirs with a storage capacity of 49.3 million gallons, 7 pumping stations, 20 wells, and 7 connections to the MWD System that have a transfer capacity of 60,580 gallons per minute (gpm). The Project site is currently served by the City's water utility and is connected to the existing water infrastructure. Warner Avenue contains a 12-inch water main that conveys water supplies to the Project site and adjacent areas.

Wastewater

In 2015, the City of Santa Ana generated approximately 23,826 acre-feet of wastewater (2015 UWMP). The City of Santa Ana operates and maintains the local sewer system consisting of over 390 miles of pipeline, 7,630 manholes, and two lift stations. Wastewater from the Project site currently discharges into existing

City-owned 8-inch sewer line within Warner Avenue. The existing sewer lines drain southeasterly to a manhole at Red Hill Avenue that are conveyed southeasterly through an existing six-inch double siphon that drains to a 42-inch trunk OCSD sewer line in Red Hill Avenue that drains southwestly.

The Sewer Study prepared for the proposed Project monitored existing flows in Warner Avenue over a period of two weeks from April 30, 2019 to May 15, 2019, and determined that the capacity of the existing 8-inch pipeline is 0.35 cfs and that the existing average flows were 0.01 cfs and the existing peak flows were 0.04 (Sewer 2019).

The OCSD trunk pipelines, including the one in Red Hill Avenue adjacent to the site, conveys wastewater to the OCSD Reclamation Plant No. 1 in Fountain Valley that has a treatment capacity of 204 million gallons per day (mgd) and an average daily flow of 117 mgd (OCSD 2018). Given the anticipated growth within OCSD's service area, OCSD is currently implementing several infrastructure projects to provide additional capacity (OCSD 2018).

Drainage

The Project site is currently 75 percent impervious and 25 percent pervious (WQMP 2019). The existing topography of the Project site is relatively flat and generally drains from the north to the south. Currently, the Project site drains northwest where flows enter an existing catch basin. The catch basin connects to a six-foot-high by ten-foot-wide culvert that directs flows to an 84-inch storm drain that flows southeast to a flood control basin. Drainage from the flood control basin is conveyed to the Barranca Channel that connects to San Diego Creek Reach 1 that drains to Newport Bay and the Pacific Ocean.

Onsite soils infiltration testing was performed during preparation of the Geotechnical Report, which determined that soils have an infiltration rate of 0.15 inches per hour which, is identified as a low infiltration rate and considered infeasible to support drainage on the Project site (GEO 2019).

Solid Waste

In 2018, a majority (87 percent) of the solid waste from the City of Santa Ana, which was disposed of in landfills, went to the Frank Bowerman Sanitary Landfill (Calrecycle 2019). The Frank Bowerman Sanitary Landfill is permitted to accept 11,500 tons per day of solid waste and is permitted to operate through 2053. In September 2019, the maximum tonnage received was 9,967 tons. Thus, the facility had additional capacity of 1,533 tons per day (Calrecycle 2019).

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