4.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

This section evaluates the cultural and paleontological resources impacts of the proposed Plan. The information presented was compiled from multiple sources as noted throughout the section.

4.5.1 EXISTING CONDITIONS

4.5.1.1 CULTURAL SETTING

Prehistoric Setting

The discussion below briefly summarizes the major cultural developments in the region before the arrival of Spanish colonists in 1769. It draws mainly from several decades of archaeological research, which generally recognizes three major periods (Paleoindian, or Paleoamerican; Archaic; and Late Prehistoric), each marked by certain changes in the archaeological record. These archaeological changes appear to reflect a variety of shifts in technology, settlement, and land use.

Of the 109 federally recognized Indian tribes in California, 18 are located in San Diego County. The tribal members of today's bands represent four Indian cultural/linguistic groups who have populated this entire region for more than 10,000 years, taking advantage of its abundant natural resources and diverse ecological system for their livelihoods. As described in proposed Plan Appendix G, the four nations are: the Luiseno, Cahuilla, Cupeno, and Kumeyaay.

Paleoamerican Period (12,000 to 7,000 Years Before Present [B.P.])

Despite decades of research, the early prehistory of coastal southern California remains poorly understood. The archaeological record does reveal that humans had appeared by about 13,000 years ago on the Channel Islands, where they lived primarily by fishing and shellfishing. These early island components are of interest in that they seem to reflect fully developed maritime economies that were distinct from, but roughly contemporaneous with, the Clovis tradition represented throughout much of interior North America. Identified late Pleistocene components are lacking on the mainland coast of southern California, although several sites have yielded calibrated dates in excess of 9,000 years (Erlandson et al. 2007:58–59). Archaeological complexes represented at these early sites include the San Dieguito complex with its finely worked scrapers and leaf-shaped and stemmed projectile points (Warren 1968; Warren et al. 1993), and the La Jolla complex represented by simple flaked cobble tools, relatively abundant groundstone, and flexed burials. Although the temporal and cultural relationship between San Dieguito and La Jolla continues to be debated, it is increasingly clear that human populations were well established along the coast of southern California very early in the Holocene.

Archaic Period (7,000 to 1,500 B.P.)

During the early Holocene, sea levels continued to rise, as they had been since the last glacial maximum at about 18,000 years ago. By around 8000 B.P., however, it appears that sea levels had begun to slow to a rate of about 0.25 meter (m) per century, a process that allowed the formation of a complex mosaic of productive lagoon and estuary habitats at many locations along the San Diego County coastline (Masters and Aiello 2007; Masters and Gallegos 1997). These seem to have supported a significant coastal population during the early Archaic, as numerous coastal components have been found that date to this interval.

Archaeological remains in these components typically represent the La Jolla complex and often contain abundant shellfish and fish remains, along with flaked cobble tools, basin metates, manos, discoidals, stone balls, and flexed burials. At the same time, it has been suggested that the contemporaneous Pauma complex of inland San Diego County may represent seasonal movements of early Archaic populations between coastal and inland resource areas (True and Pankey 1985; Warren et al. 1961). If so, a relatively broad seasonal range is implied for the early portion of the Archaic.

Although the basic toolkit represented by the La Jolla complex appears to have remained consistent throughout the Archaic, there are some indications of significant shifts in settlement. Compilations of radiocarbon assays for Batiquitos Lagoon (Gallegos 1985; Warren et al. 1961), for example, provide evidence for disuse of this location between about 3000 and 1500 B.P.
This and evidence from some other locations in San Diego County led Warren (1964, 1968; Warren et al. 1961) and others (Gallegos 1985; Masters and Gallegos 1997) to postulate a population movement inland and southward in response to siltation and declining productivity of coastal lagoons in the northern portion of the region. More recent data, however, have demonstrated continued settlement and use of littoral resources throughout the late Archaic period in northern San Diego County (Byrd and Reddy 2002). It may be that, rather than widespread population movement away from the coast, the changing coastal ecology resulted in more localized settlement adjustments.

Late Prehistoric Period (1,500 B.P. to 1769)

In Southern California, the appearance of small, arrowhead-size projectile points and ceramics, and the practice of cremation around 1,300 years ago mark the beginning of the Late Prehistoric period. Projectile points commonly found in Late Prehistoric assemblages include Cottonwood Triangular and Desert Side-notched forms, both thought to mark the introduction of the bow and arrow into the region. Regional populations appear to have been relatively high during the Late Prehistoric, resulting in territorial restrictions, increased sedentism, and subsistence intensification. Villages were relatively stable and occupied for much of the year, and were positioned for access to a variety of resource areas. Subsistence is thought to have focused on acorns and grass seeds, along with deer and a variety of small mammals. Along the coast, subsistence focused on the collection of shellfish and nearshore fishing.

Settlement patterns during the Late Prehistoric in northern San Diego County are not well understood, although the data do suggest some important spatial and temporal variation. The strongest settlement data come from the upper San Luis Rey River drainage system, where investigations by True and Waugh (1982) suggest a transition from a fairly wide-ranging mobility pattern during San Luis Rey I times into a territorially constricted pattern of seasonally bipolar movement between upland and lowland settlements. This interior-upland pattern is seen as distinct from that of the lower San Luis Rey River, where residential mobility is thought to have been even lower, with one principal village per group area.

Ethnographic Background

At Spanish contact, the northern portion of San Diego County was occupied by speakers of a Takic language related to those dialects spoken in the Los Angeles Basin to the north but distinct from the Yuman language spoken in the San Diego area to the south. These groups were later known generally as the Juaneño and Luiseño, based on their associations with either Mission San Luis Rey or Mission San Juan Capistrano. The region occupied by the Luiseño and Juaneño extended along the coast roughly between Agua Hedionda to approximately Aliso Creek in present Orange County, and inland approximately to Palomar Mountain (Kroeber 1925; Oxendine 1983; Shipek 1977). The southern portion of coastal San Diego County was occupied by the Kumeyaay, a Yuman-speaking group also known as the Kamia, Ipai, and Diegueño. Both the Luiseño/Juaneño and Kumeyaay lived in semisedentary, politically autonomous villages that were typically positioned to provide access to a wide variety of resources.

The high population densities achieved by the Kumeyaay and Luiseño during the Late Prehistoric period led to the development of a number of intensive land use practices that are documented ethnographically. These included intensive use of a wide diversity of plant and animal foods as well as a number of land-management techniques that were designed to improve and maintain productivity, such as regular vegetation burning, plant husbandry, and erosion control and irrigation (Anderson 1993; Shipek 1993; White 1963).

Historic Setting

Spanish Period (1769–1821)

In July 1769, the first Spanish colonists arrived in San Diego. The mission and presidio, s~~S~~trategically located on a prominence overlooking the lower San Diego River valley and the northeastern corner of San Diego Bay, ~~the mission and the fortifications on Presidio Hill~~ were completed the following year and represented the first permanent settlement by the Spanish in Alta California.

A small community of Hispanic settlers followed, establishing a pueblo about 5 miles north of San Diego's current downtown, in the area at the foot of Presidio Hill later known as Old Town (Engstrand and Brandes 1976; Pourade 1963). The pueblo and Presidio remained in the Old Town area even after the mission was moved to more favorable agricultural land in Mission Valley in 1774 (Pourade 1961). Under Spanish law, every pueblo was entitled to 4 square leagues of land. As a result, downtown San Diego was part of the original pueblo land of San Diego, which totaled over 48,000 acres. Most of this land remained undeveloped until the Anglo-American period (Mayer 1978; Pryde 1992).

Mission San Diego and San Luis Rey both followed a different policy than most California missions in that after baptism and training most neophytes were allowed to return to their villages. This, despite the considerable disruption imposed by the missions, allowed Native American groups to maintain many aspects of their traditional land use practices while still adapting to and integrating with the mission economic system (Shipek 1988). At the same time, many Kumeyaay maintained active resistance to the mission system (Carrico 2008; Luomala 1978; Miskwish 2007), and many portions of interior San Diego County were only minimally influenced by the Spanish (Shipek 1988).

The land around the California missions and the first pueblos was gradually developed during the Spanish period, as new crops and animals were introduced. The padres and early settlers sought to reproduce the agricultural economy they knew in Spain in north-central Mexico and Alta California, thus creating the Mediterranean style and ambience still associated with the region (Dunmire 2004; Ford 2005; Mayer 1978). The California missions and presidios reflected the Spanish style in their architectural character and layout around courtyard gardens. The gradual introduction of European decorative plants and adaptation of native plants to the casas and courtyards eventually gave the area the Colonial appearance still linked in most people's minds with the region today. The Spanish settlers cultivated grapes for wine, olives, oranges, and lemons, and a variety of vegetables. They created small canal systems for the irrigation of crops; introduced cattle, sheep, and horses; and built in architectural styles derived from Spanish models (Ford 2005; Mayer 1978).

San Diego Bay was used as a port for the fur trade beginning in the early 1800s (Mayer 1978; Pourade 1961). The population of San Diego grew slowly during early 19th century. When the Mexican Revolution began in 1810, the population of the Presidio at San Diego was approximately 350 persons.

By the time Mexico gained independence from Spain in 1821, the population of San Diego had risen to approximately 450 persons.

Mexican Period (1821–1846)

The end of Spanish customs regulations and the expansion of trade under Mexico opened California to the world. In 1823, the English firm of McCullough, Hartness, and Co. sent the vessel John Begg to San Diego and established a permanent mercantile house, the first foreign trading house in California. On August 17, 1833, the Mexican Congress passed the Secularization Act, which transferred mission-controlled land to private ownership. This act opened enormous tracts of new land to settlement, and immigration to San Diego began to increase. Concurrently, the mission system began to decline, forcing Native American occupants to seek alternative livelihoods (Carrico 1987; Luomala 1978).

In December, 1834, San Diego was organized as a pueblo with the election of its first mayor, Juan Maria Osuna, and the Presidio was abandoned the following year. The main population center during the Spanish period had been the Mission San Diego de Alcalá, located well inland from the port. With enforced secularization, however, settlement around the mission was abandoned. In 1834, the first urban layout of the city, complete with a typical plaza mayor and substantial adobe buildings, arose near the Presidio in the area that later came to be known as Old Town. Large ranchos were established on the vast private land grants carved out of former mission lands. The new ranch owners were far more interested in mercantile commerce than had been the earlier Spanish padres, and actively sought ways to attract foreign, and especially American, traders. Tallow and hides were the main exports in this trade (Dana 1995). By the 1840s, merchants and brokers from the northeastern United States had become a common sight around San Diego Harbor (Ford 2005:8; Mayer 1978).

American Period (1846–Present)

The forces that led to the foundation of downtown San Diego began to become manifest after Alta California was ceded to the United States at the conclusion of the Mexican-American War. In the 50 some years that followed, the economic and political center of the city shifted from Old Town to the present downtown area, and the basic outlines of modern San Diego were established. The process was not straightforward or unilateral, but rather a process of fits and starts.

Old Town San Diego was occupied by U.S. forces during the Mexican-American War (1846–1848). The Treaty of Guadalupe-Hidalgo, which ended the war, ceded Alta California to the United States. The U.S. Boundary Commission Survey team arrived in San Diego in 1849 to survey the new border area. Boundary Commissioner John B. Weller assigned chief surveyor, Andrew B. Gray, to survey San Diego Bay and fix the beginning point of the survey (Scott 1976:21). The new international boundary line was located 1 marine league south of San Diego Bay.

The “port” at San Diego was little more than an off-loading beach, located in present-day Point Loma. Gray and his team camped near the Punto de los Muertos, an area settled by Spanish and Mexican residents 3 miles south of Old Town near the present-day Lindbergh Field, where access to the bay was easier. Gray quickly realized the potential for a new “American” seaport town at that site and switched his efforts toward establishing a “New Town” for San Diego (Newland 1992:30–35; Rolle 1956:90–91; Scott 1976:24–26). In January and February of 1850, Gray and Army Lt. Thomas Johns surveyed and mapped a 160-acre subdivision and port facility adjacent to the Punto de los Muertos.

Gray then attracted successful San Francisco merchant William Heath Davis and several prominent San Diegans, including José Antonio Aguirre, Miguel de Pedrorena, and William C. Ferrell, to help finance the purchase and development of the waterfront land where downtown San Diego now stands (Rolle 1956:91–92; Scott 1976:28).

This "New Town" consisted of the area bounded by present-day Broadway, Front Street, and the waterfront. Establishing New Town had its difficulties and it was thwarted by the fact that San Diego went bankrupt. San Diego's fortunes, however, were renewed after the end of the Civil War. By the late 1860s, there were plans for two subdivisions and talk of being the terminus for the transcontinental railroad. That did not come to fruition, but it did attract residents and established New Town for good. There were periods of boom and bust in the years leading up to the turn of the century. With the dawn of the 20th century, business in San Diego again picked up and the city experienced reinvigorated growth. Between 1900 and 1920, San Diego's population more than quadrupled from 17,700 to nearly 75,000 (Mills 1960:37; Pryde 1992:73). This growth was due in part to events such as commencement of construction on the Panama Canal; plans to build a railroad to Yuma, Arizona; the Panama-California Exposition of 1915–1916; and the U.S. Navy's interest in making San Diego a major naval port. There were also significant populations developing in La Jolla, Ocean Beach, Mission Beach, and Point Loma. Smaller populations were in National City, Coronado, Oceanside, Encinitas, Julian, and Chula Vista (Pryde 1992:73). San Diego's natural harbor also attracted immigrants interested in commercial fishing, and the fishing industry and its associated canneries helped to bolster the city's economy in the 1920s (Cleland et al. 1980). The expansion of the streetcar line in the 1920s began to alter patterns of development and residence. The streetcar allowed many families to move out to suburbs that were rapidly building up on the outskirts of town (Schaefer and Newland 1994).

San Diego suffered like every other city during the Great Depression, but the outbreak of World War II sparked an economic boom in most of the country, particularly in places like San Diego with an established military presence. The military took over large parts of San Diego, expanding existing bases and developing new ones. San Diego's population stood at 203,341 in 1940; within a year it grew by 50,000 (Mayer 1978). The post-World War II era brought recovery in the form of an increased industrial base, a growing tourist business, and the commercial exploitation of rich agricultural lands. These resources, along with expansive military bases, have continued in importance to San Diego's economic well-being to the present day. The era also brought notable shifts in the local economy and residential patterns. The aerospace industry shifted from aircraft to missiles, and a post-war housing crunch led to a construction boom, which included post-war housing tracts in the suburbs served by massive new shopping centers and smaller shopping malls. More houses farther afield meant more cars, and by 1951 San Diego had four major freeway interchanges (McKeever 1994). The 1960s brought construction of a new sports stadium, expansion of the San Diego Zoo, and the formation of the San Diego Padres major league baseball team. Tourism became one of the leading industries and has remained so to this day.

The 1960s to the 1980s saw a significant increase in populations throughout the region, and cities like Del March, Poway, Santee, Vista, San Marcos, and Lemon Grove were established (Pryde 1992:77). Massive housing developments like Mira Mesa and Rancho Peñasquitos were built in the 1970s. Despite setbacks in recent years, the San Diego region has continued to grow and prosper.

The region today is home to 19 Native American reservations representing 18 tribal governments, the most in any county in the United States. Reservations have generally been established by Executive Order, and most of the land within the boundaries of reservations is owned by tribes and held in trust by the federal government. Native American reservations currently cover more than 116,000 acres, or approximately 4 percent of the region's land. Four tribal groupings make up the indigenous peoples of San Diego County: the Kumeyaay/Diegueno, the Lusiseno, the Cuperno, and the Cahilla (Plan Appendix G). Tribal economic development has had an influence on the region's overall development. This is mostly due to casinos (e.g., Barona, Campo, Sycuan, Viejas) which are mainly responsible for creating 10,000 jobs, a $ 1 billion industry, $263 million in goods and services, and $500 million in payroll. The tribes who do not have gaming facilities continue to have economic development, transportation, and infrastructure needs (Plan Appendix G; Plan Appendix U).

EXISTING CULTURAL RESOURCES

Numerous cultural resources have been documented in the San Diego region. In addition, some areas have not yet been inventoried. The following information provides a context for the types of cultural resources in the region and a general discussion of the range of known cultural resources that may be present in the San Diego region.

In California, historical resources are recorded in the California Historical Resources Information System (CHRIS), which consists of the California State Office of Historic Preservation (OHP), 10 Information Centers (ICs), and the state Historical Resources Commission. The ICs are spread across California and are the repositories for recorded historical resources within their region. In San Diego, it is the South Coastal Information Center (SCIC) that holds the records for historical resources recorded in San Diego County. According to the SCIC, there are 34,239 cultural resources (including 12,800 isolated finds) in the San Diego region recorded in CHRIS (South Coastal Information Center November 26, 2014). This information is collected by the SCIC when requested and represents the most accurate information known at the time of this EIR.

Archaeological Resources: Historic and Prehistoric

Generally, specific information on the location and description of archaeological resources is kept confidential to lessen the potential for vandalism and theft by looters. The specific regulations that provide for this are discussed in Section 4.5.2.

Historical archaeological site types that have been encountered in the San Diego region vary according to the time period and activity with which they are associated. They can contain surface material or be buried. Early period, Spanish and Mexican period sites include adobe homesteads and presidio and mission-related sites. These include the San Diego Presidio, Mission Dam, the San Diego Mission and the San Luis Rey Mission.

Most of the known sites have undergone data recovery and it would be rare to find any new sites. In the early American Period up until about 1920, most archaeological sites in an urban environment consist of garbage dumps in wells, cisterns, or trash pits. Building foundations are also common during this period, as are industrial features. The majority of sites already identified from this time period exist in developed areas of San Diego. In the San Diego mountains, mining sites are more prevalent. After the 1920s, the establishment of town dumps and sewer and water systems meant that trash-related archaeological features were less common. Materials commonly found at historic sites include ceramics, glass, metal, and animal bone.

Leather, wood, and cloth do not generally preserve well and are not commonly found in historic sites. Some site types, such as military and farming/ranching complexes, are found throughout the San Diego region and in any time period. Historic buildings and structures are also present throughout the San Diego region and can be found in association with archaeological sites or on their own.

Prehistoric sites tend to fall into distinctive categories that relate to the activities that took place. They are found through the region, but tend to be more common in areas close to a water source or resources (such as materials for tool making or readily available food), and on flatter ground. Like historic sites, they can be found on the surface, or buried. Due to the propensity for settling close to water sources, prehistoric sites that were originally just surficial can be buried over time by alluvial action. Major coastal villages were known to have existed along the estuaries and lagoons along the San Diego coastline and up the corresponding rivers, such as the village of Kosti or Cosoy near the mouth of the San Diego River (Kroeber 1925). While many historic and prehistoric resources have been identified and documented within the San Diego region, many unidentified resources remain unevaluated. In addition, the exact locations of some of the known sites (such as Cosoy) are yet to be confirmed. The site types and the materials associated with them are summarized below.

Habitation sites: These are seasonal or semi-permanent. Activities at these sites include food preparation, milling, cooking, tool production, ceramic production, leather working, basket weaving, construction, and ritual activities.

Temporary camps: A range of activities took place at these camps. This could include any of the activities performed at a habitation site, but at a temporary camp there would have been a shorter activity period, so less material evidence would be left.

Artifact scatter: An artifact scatter consists of ceramics, flaked stone, or ground stone that is not accompanied by subsurface deposits. Some animal bone or shell may also occur. An artifact scatter could represent a temporary place to stop or somewhere to process a resource from the surrounding area.

Lithic Scatter: This is a low-density scatter of lithic material used in tool production. Typically, it is the discard from the process that is left behind, not the actual tools.

Bedrock Milling: These are areas of bedrock used to process food such as acorns or seeds. This was done with a pestle (which crushes the food) or mano (which grinds the food).

Quarry: A quarry is where raw stone material was extracted for tool making. These sites were visited only briefly.

Shell Midden: This can be an area where shellfish was processed or it can be associated with a habitation site or temporary camp.

Rock art: Rock art includes petroglyphs (patterns etched into rocks) and pictographs (patterns “painted” on rocks) that are often associated with ritual.

Major coastal villages were known to have existed along the estuaries and lagoons along the San Diego coastline and up the corresponding rivers, such as the village of Kosti or Cosoy near the mouth of the San Diego River (Kroeber 1925) and Ystagua in the Sorrento Valley area. While many historic and prehistoric resources have been identified and documented within the San Diego region, many unidentified resources remain unevaluated. In addition, the exact locations of some of the known sites (such as Cosoy) are yet to be confirmed. Some areas within the San Diego region have a particularly high potential for prehistoric and historic cultural resources.

For example, lagoons and rivers were areas of high traffic and settlement during prehistoric times due, in part, to the abundance of water, food, and other resources, while coastal communities were some of the earliest and heaviest areas of settlement during historic times due to their access to both resources and transportation.

Historic Districts, Registers, and Landmarks

In addition to the tens of thousands of archaeological sites recorded within the San Diego region on the California Historic Resources Inventory, there are numerous historical resources listed on federal, state, and local registers, such as the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Historical Landmarks, and County of San Diego Historical Landmarks. Other historic inventories have been prepared by various cities within the San Diego region. Approximately 9,000 historical structures are recorded in San Diego County (South Coastal Information Center November 26, 2014). Some of these are part of larger districts.

The following is a description of the types of other listings that exist in the San Diego region for archaeological and historic architectural resources. These descriptions are taken from California OHP (OHP 2014).

> California Historical Landmarks (Landmarks) are buildings, sites, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value.
>
> California Points of Historical Interest are buildings, sites, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value.
>
> The California Register of Historical Resources (California Register) includes buildings, sites, structures, objects and districts significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.
>
> The National Register of Historic Places (National Register) includes buildings, structures, objects, sites, and districts of local, state, or national significance in American history, architecture, archeology, engineering, and culture.

There are 24 historic districts listed in the NRHP within the San Diego region; see Table 4.5-1 (NRHP 2014). This count only represents the districts that have been listed in the NRHP and not the ones that may be in the process of being listed. Many of the districts are located in more urban areas, specifically in and around the city of San Diego. These include such historical districts as Cabrillo National Monument Balboa Park and the Gaslamp Quarter Historic District.

Table 4.5-1 Nationally Designated Historic Districts in the San Diego Region

Historic District	Location
Balboa Park	CA Quadrangle 41, San Diego
Cabrillo National Monument	Near southern tip of Point Loma
Camp Howard	Naval Air Station, North Island, San Diego
Coyote Canyon Wild Horse Herd Historic District	Anza-Borrego State Park, Borrego Springs
El Prado Complex	Balboa Park, San Diego
Fages-De Anza Trail-Southern Emigrant Road	Anza-Borrego State Park
Gaslamp Quarter Historic District	Bounded by railroad tracks, Broadway, 4th, and 6th Streets, San Diego
Gregory Mountain	Pauma, Unincorporated County of San Diego
Harris, C.W., Site Archeological District	Rancho Santa Fe, Unincorporated County of San Diego
Heilman Villas	Orange Avenue, Coronado
Kuchamaa	Southeast of San Diego at the U.S.-Mexican Border
Los Peñasquitos Historic and Archeological District	12020 Black Mountain Road, San Diego
Lower Borrego Valley Archeological District	Borrego Springs, Unincorporated County of San Diego
Marine Corps Recruit Depot Historic District	South of junction of Barnett Avenue and Pacific Highway, San Diego
Naval Air Station, San Diego, Historic District	Naval Air Station, North Island, North Shore, San Diego
Naval Training Station	Barnett Street and Rosecrans Boulevard, San Diego
Old Town San Diego Historic District	Junction of I-5 and I-8, San Diego
Rancho De Los Kiotes	6200 Flying L.C. Lane, Carlsbad
Rockwell Field	North Island, San Diego
Rosicrucian Fellowship Temple	2222 Mission Avenue, Oceanside
San Diego Civic Center	1600 Pacific Highway, San Diego
San Diego State College	5300 Campanile Drive, San Diego
Table Mountain District	Jacumba, Unincorporated County of San Diego
University Heights Water Storage and Pumping Station Historic District	4236 Idaho Street

Source: NRHP 2014

In addition to the NRHP historic districts, 140 individual historical resources in the San Diego region are listed in the NRHP (NRHP 2014). There are also 16 National Historic Landmarks (NRHP 2014). Resources listed in the NRHP are automatically listed in the CRHR. Most of these resources within the San Diego region are buildings or structures, such as the Hotel Del Coronado and the Point Loma Lighthouse; however, some archaeological sites are on the list. The State of California Historical Resources Commission has designed the CRHR program in order to identify, evaluate, register, and protect California's historical resources. There are also 72 California State Historical Landmarks in the San Diego region (California OHP 2014). At the local level, a number of jurisdictions inventory the resources that are present to develop management plans and standards for their protection. This has become more often the case as urban areas are limited in their choices of undeveloped land and instead move toward adaptive reuse of existing buildings and features of the built environment. For example, the City of San Diego Historical Resources Board works to evaluate and preserve resources and has designated over 950 resources of local concern (San Diego Historical Resources Board 2014).

Several of these resources are also listed in the NRHP either individually or as part of a district. In addition, the County of San Diego, and the Cities of Oceanside, Poway, Escondido, Carlsbad, Encinitas, National City, Chula Vista, La Mesa, and El Cajon also maintain historic resource inventories.

Ethnographic Resources and Sacred Sites

Ethnographic resources include sites, areas, and materials important to Native Americans for religious, spiritual, or traditional uses. These can encompass the sacred character of physical locations (mountain peaks, springs, and burial sites) or particular native plants, animals, or minerals that are gathered for use in traditional ritual activities. Villages, burials, rock art, rock features, and traditional hunting, gathering, or fishing sites may also constitute significant Native American cultural resources. Such resources may be eligible for listing in the NRHP as Traditional Cultural Properties and may be included in the California Sacred Lands File maintained by the California Native American Heritage Commission (NAHC). For specific projects, the NAHC would provide information to qualified persons conducting cultural resources studies. Although the NAHC does not provide the location of the resources, they would provide a list of knowledgeable Native Americans who can be contacted. Tribal consultation with these individuals and organizations is typically done during the CEQA process.

4.5.1.2 EXISTING PALEONTOLOGICAL RESOURCES AND UNIQUE GEOLOGIC FEATURES

Paleontological Resources

Paleontological resources represent a limited, nonrenewable, and impact-sensitive scientific and educational resource. As defined in this section, “paleontological resources” (i.e., fossils) are the remains and/or traces of prehistoric plant and animal life. Fossils such as bones, teeth, shells, and leaves are found in geologic deposits (rock formations) within which they were originally buried. Paleontological resources include not only fossils as described above, but also collecting localities and the geological formations containing those localities. Known paleontological resources found in regions of moderate to high paleontological sensitivity throughout the San Diego region are included below in Table 4.5-2.

Table 4.5-2
Paleontological Resources

Region	Period	Sensitivity	Paleontology Resources Found
Unnamed River Terrace Deposits	Late Pleistocene	Moderate	• Terrestrial vertebrates (i.e., pond turtle, passenger pigeon, hawk, shrew, mole, mice, gopher, squirrel, rabbit, ground sloth, wolf, camel, deer, horse, mastodon, and mammoth).
Unnamed Marine Terrace Deposits	Late Pleistocene	Moderate	• Marine invertebrate fossils (e.g., mollusks, crustaceans, and echinoids). • Marine vertebrates (e.g., sharks, rays, and bony fish). • Terrestrial mammals (e.g., camel, horse, and mammoth).
Bay Point Formation	Late Pleistocene	High	• Invertebrate fossils (primarily mollusks). • Marine vertebrates (i.e., sharks, rays, and bony fishes).
San Diego Formation	Late Pleistocene	High	• Marine vertebrates and invertebrates (i.e., clams, scallops, snails, crabs, barnacles, sand dollars, sharks, rays, bony fishes, sea birds, walrus, fur seal, sea cow, dolphins, and baleen whales. • Terrestrial mammals (e.g., cat, wolf, skunk, peccary, camel, antelope, deer, horse, and gomphothere). • Fossil wood and leaves (e.g., pine, oak, laurel, cottonwood, and avocado).
San Mateo Formation	Late Pleistocene to Late Miocene	High	• Marine vertebrates (e.g., rays, sharks, bony fishes, sea birds, dolphins, sperm whale, baleen whales, sea cow, fur seals, walrus, and sea otter). • Terrestrial mammal remains (e.g., horse, camel, llama, and peccary). • Marine invertebrates (e.g., clams, scallops, snails, and sea urchins).
Capistrano Formation	Late Miocene	High	• Marine vertebrates (e.g., sharks, rays, bony fishes, sea birds, toothed whales, baleen whales, sea cow, fur seals, and walruses) (Orange County).
San Onofre Breccia	Middle Miocene	Moderate	• Poorly preserved remains of nearshore marine foraminifers, bivalve mollusks, and unidentified mammals.
Otay Formation	Late Oligocene	High	• Terrestrial vertebrates (e.g., tortoise, lizards, snake, birds, shrews, rodents, rabbit, dog, fox, rhinoceros, camels, mouse-deer, and oreodonts).
Sweetwater Formation	Eocene	High	• Dental remains of opossums, insectivores, and rodents. • A few nondiagnostic mammal teeth.

Region	Period	Sensitivity	Paleontology Resources Found
Pomerado Conglomerate	Middle Eocene	Moderate	• Terrestrial mammals (e.g., insectivores, primates, rodents, protoreodonts, unidentifiable mammal bone fragments, and an unidentified artiodactyl, possibly a camelid). • Nearshore marine mollusks (e.g., clams and snails).
Mission Valley Formation	Eocene	High	• Marine microfossils (e.g., foraminifers), macroinvertebrates (e.g., clams, snails, crustaceans, and sea urchins). • Marine vertebrates (e.g., sharks, rays, and bony fish). • Petrified wood. • Terrestrial mammals (e.g., opossums, insectivores, bats, primates, rodents, artiodactyls and perissodactyls).
Stadium Conglomerate (Upper)	Middle Eocene	Moderate	• Fossil foraminifers, marine mollusks, opossums, insectivores, primates, rodents, carnivores, rhinoceros, and artiodactyls.
Stadium Conglomerate (Cypress Canyon)	Middle Eocene	High	• Land mammals (e.g., opossums, insectivores, bats, primates, rodents, carnivores, tapirs, brontotheres, protoreodonts, and other artiodactyls).
Stadium Conglomerate (Lower)	Middle Eocene	High	• Sparse marine fossil remains. • Terrestrial mammals (e.g., opossums, insectivores, primates, rodents, carnivores, and artiodactyls).
Friars Formation	Middle Eocene	High	• Terrestrial vertebrates; especially terrestrial mammals (e.g., opossums, insectivores, primates, rodents, artiodactyls, and perissodactyls). • Marine microfossils and macroinvertebrates. • Fossil leaves.
Santiago Formation (Member C)	Middle Eocene	High	• Vertebrate fossils: turtles, snakes, lizards, crocodiles, birds, and mammals (e.g., opossums, insectivores, primates, rodents, brontotheres, tapirs, protoreodonts, and other early artiodactyls). • Marine organisms (e.g., calcareous nannoplankton and mollusks).
Santiago Formation (Member B)	Middle Eocene	High	• Terrestrial vertebrates (e.g., insectivores, primates, rodents, brontothere, rhinoceros, and uintathere). • Marine and estuarine mollusks.
Santiago Formation (Member A)	Middle Eocene	Moderate	• Member “A” has yet to produce any fossils, but the discovery of any diagnostic fossils in this rock unit would be of great importance in resolving the age and stratigraphic significance of the Santiago Formation.

Region	Period	Sensitivity	Paleontology Resources Found
Ardath Shale	Middle Eocene	High	• The Ardath Shale has yielded diverse and well-preserved assemblages of marine microfossils and vertebrates (e.g., sharks, rays, and bony fish).
Torrey Sandstone	Early Middle Eocene	Moderate	• Plant remains (mostly leaves). • Invertebrate fossils primarily consist of nearshore marine taxa (e.g., clams, oysters, snails, and barnacles). • Vertebrate fossil remains are rare and include teeth of crocodiles, sharks, and rays.
Delmar Formation	Late Early to Early Middle Eocene	High	• Estuarine invertebrates (e.g., clams, oysters, and snails). • Estuarine vertebrates (e.g., sharks and rays). • Well-preserved skull remains of aquatic reptiles (e.g., crocodile) and terrestrial mammals (e.g., tillodont and early rhinoceros).
Mount Soledad Formation	Late Early to Early Middle Eocene	Moderate	• Marine organisms (e.g., mollusks, planktonic foraminifers, benthonic foraminifers, and pollen).
Unnamed Formation	Early Eocene	High	• Dental remains of multituberculates, opossums, insectivores, primates, "condylarths," and rodents.
Cabrillo Formation	Late Cretaceous	Moderate	• Marine invertebrates (e.g., clams, snails, and ammonites). • Marine vertebrates (e.g., sharks).
Point Loma Formation	Late Cretaceous	High	• Marine invertebrates (e.g., clams, snails, nautiloids, ammonites, crabs, and sea urchins). • Marine vertebrates (e.g., sharks and mosasaurs). • Terrestrial plants (leaves and wood). • Dinosaurs, including armored dinosaur (nodosaur) and duck-billed dinosaur (hadrosaur).
Lusardi Formation	Late Cretaceous	Moderate	• Fragments of plant material. • The Cretaceous age of this rock unit coupled with its terrestrial depositional setting suggests the potential presence of dinosaurs and other terrestrial vertebrates.
Older Quaternary Alluvial Fan Deposits	Late Pleistocene	Moderate	• Scattered vertebrate remains of late Pleistocene age.
Pauba Formation	Late Pleistocene	Moderate	• Terrestrial mammals (e.g., shrew, rabbit, kangaroo rat, gopher, mice, deer, pronghorn, camel, horse, and elephant). • Freshwater diatoms.
Temecula Arkose	Pleistocene	High	• Terrestrial mammals (e.g., rabbits, rodents, wolf, badger, bobcat, elephant, horse, camel, deer, and antelope). • Freshwater diatoms, snails, and gastropods.

Region	Period	Sensitivity	Paleontology Resources Found
Jacumba Volcanics	Early Miocene	Moderate	• Fossil bone fragments. • Identifiable fossils should eventually be found in these sediments.
Table Mountain Gravels	Early to Middle Eocene	High	• Terrestrial mammals (e.g., rodents and large hoofed mammals) including teeth (rabbit, camel), limb bones (unidentified artiodactyl), and miscellaneous bone fragments.
Brawley Formation	Early to Late Pleistocene	Moderate	• Lacustrine invertebrate fauna.
Ocotillo Conglomerate	Early Pleistocene	High	• Terrestrial vertebrates (e.g., turtle, bird, ground sloth, rabbit, rodents, wolf, bear, bobcat, lion, sabertooth cat, mammoth, zebra, horse, camel, llama, deer, antelope, and ox).
Borrego Formation		High	• Mollusks, ostracods, and rare foraminifers. • Terrestrial vertebrates.
Canebrake Conglomerate	Late Pleistocene to Early Pleistocene	Moderate	• Has not yet yielded any fossils.
Palm Springs Formation	Late Pleistocene to Early Pleistocene	High	• Over 100 species of Plio-Pleistocene terrestrial vertebrates (e.g., turtles, snakes, lizards, hawk, eagle, vulture, ground sloth, shrews, rodents, mastodon, camel, llama, and horse).
Imperial Formation	Late Miocene to Early Pliocene	High	• Over 200 species of marine fossils, (e.g., foraminifers, corals, clams, snails, ostracods, barnacles, crabs, sand dollars, and sea urchins). • Marine vertebrates (e.g., sharks, rays, bony fish, sea cow, baleen whale, and walrus).
Split Mountain Formation		Moderate	• Marine microfossils such as foraminifers.
Alverson Volcanics	Middle Miocene	Moderate	• Algae, pollen, petrified wood, mollusks, and a vertebrate bone fragment.

Source: Demere and Walsh 1993

Unique Geologic Features

A unique geologic feature may be the best example of its kind locally or regionally; it may illustrate a geologic principle, it may provide a key piece of geologic information, it may be the "type locality" of a fossil or formation, or it may have high aesthetic appeal. Unique geologic features may be exposed or created from natural weathering and erosion processes or from man-made excavations. These unique geological features provide aesthetic, scientific, educational, and recreational value. Unique geological features throughout the San Diego region were documented in the 1975 San Diego County General Plan. This inventory from the 1975 General Plan is listed in Table 4.5-3 and provides more detailed information than the more recent General Plan Update adopted in 2011.

Table 4.5-3
Unique Geologic Features

Unique Geological Feature	Location
Indian Mountain Leucogranodiorite.	Banks of San Luis Rey River, few miles southwest of Pala
Pliocene San Mateo formation.	Along San Mateo Creek
San Onofre breccia.	San Onofre Hills
Monterey shale.	Along sea cliffs southeast of San Onofre
Bonsall tonalite.	Bonsall, west central San Luis Rey Quad
Petrified forest with logs in exposures of the prebatholithic colcanics and sedimentary rocks containing leaf imprints.	Lusardi Canyon near Rancho Santa Fe near junction with San Dieguito River
Prebatholithic folded slates.	Lusardi Canyon near Rancho Santa Fe near junction with San Dieguito River
The Lusardi formation consisting of a conglomerate unit.	Lusardi Canyon near Rancho Santa Fe near junction with San Dieguito River
Lake Wohlford leucogranodiorite.	Lake Wohlford, between Escondido and Lake Wohlford
San Marcos gabbro.	San Marcos Mountains, San Luis Rey Quad
Woodson Mountain granodiorite.	Woodson Mountain, a few miles southwest of Ramona
Swarm of distinctly oriented inclusion in Lakewood Mountain tonalite composing outer ring dike. Core is Green Valley tonalite.	East of Ramona
Area of prebatholic metamorphics, quartzite exhibiting swirls of magnitite and biotite, which may represent relic crossbedding.	Vicinity Highway 78 and San Pasqual
Green Valley tonalite.	Southeast San Luis Rey Quad; Green Valley between SR 395 and Ramona
Elsinore fault, canyon eroded along fault, and tributaries offset in a right lateral sense, Typical exposure of Julian schist.	Julian, Santa Ysabel Quadrangle
Split Mountain formation.	Split Mountain Gorge, south of Ocotillo, west side of Imperial Valley
Localities indicating age of peak volcanics. At (a) Buchia belemnoids, and ammonite were found. At (b) there are belemnoids, flame structures, flute castes and graded bedding.	(a) Los Peñasquitos; (b) San Santiago Dieguito, vicinity of San Dieguito piochii, River
Eocene vertebrate fossil locality.	Bank of San Diego River near Grantville
Eocene vertebrate fossil locality.	Bank of San Diego River near Friars Road and Ulric Street
Exposures of fossiliferous Eocene and Pliocene strata. The Pliocene rocks are preserved by down faulting. They contain sharks teeth, whale bones, and delicate Glottidia albida.	Tecolote Creek
Bay Point formation.	West shore of Bay Point Mission Bay
Type area of the Rose Canyon shale.	Rose Canyon
Eocene foraminifera area.	Old Murray Canyon Quarry
Green Eocene mudstones, containing large leaf imprints, petrified logs, and pelecypod molds.	Black Mountain
Black Mountain volcanics, greenstones with primary structures. Quartzose pseudomorphs of pastropods.	Black Mountain
Exposure of San Diego formation containing whole bones and sharks teeth.	Vicinity of Miramar Reservoir
Type locality of Spatangus rarus Israelsky. Known only from type locality.	Pacific Beach

Unique Geological Feature	Location
Type localities of Pecten (patinopecten) healeyi, Pecten (Pecten) stearsi, Pecten (argopecten) subdolus and Pecten (Pecten) bellus hemphilli.	Pacific Beach
Del Mar formation.	Sea cliff and short canyon in Del Mar
Mount Soledad formation.	West of intersection of Ardath Road and I-5
Mission Valley formation.	South wall of Mission Valley on west side of SR 163 at the junction of I-8
Stadium conglomerate.	North wall of Mission Valley west of Murphy Canyon Road from Friars Road
Scripps formation.	Torrey Pines Grade
Friars formation.	North wall of Mission Valley along Friars Road
Torrey sandstone.	Torrey Pines Grade
Ardath shale.	East side of Rose Canyon south of intersection of Ardath Road and I-5
Exposures of Santiago Peak volcanics showing unique stratigraphic and structural relationships between many units typical of formation. Also, type locality when first named Black Mountain Volcanics.	North of Black Mountain, La Jolla Quadrangle
Exposure of an old “unnamed” fanglomerate composed of metamorphic rocks, one of the highest surfaces of the “high terrace” cut into Stadium conglomerate, and a “contact breccia” migmatite zone.	Vicinity of I-8, west of San Vicente Reservoir
Basal contact of Ballena gravels eastward; mechanically just folded border of Woodson Mountain granodiorite against narrow screen of metamorphic rocks and banded structures in gabbro on other side.	Vicinity of Wildcat Canyon Road sloping just east of San Vicente Creek
An unusual occurrence of dumortierite, similanite, and associated minerals.	Dehesa Toad and Tavern Road, Alpine
An unusual occurrence of orbicular gabbro.	Dehesa Road west of the Harbison Canyon Road intersection Alpine
Prebatholithic metavolcanics, in selected places coarse pyroclastic and blastoporphyritic fabrics as well as original bedding are visible. Often very gneissic.	Vicinity of I-8 south of Lake Jennings
Mixed and roof pendants in the prebatholithic metavolcanics.	Vicinity of La Cresta Road, El Cajon
Contact of Woodson Mountain granodiorite and Green Valley tonalite.	Vicinity of La Cresta Road, El Cajon
Roof pendant of metavolcanics in the Green Valley tonalite.	Vicinity of San Diego River west of El Capitan Reservoir
Stonewall quartz diorite.	Stonewall Peak in Cuyamaca Region
Exposure of Bay Point formation fauna.	Vicinity of the U.S./Mexican border 1/4 mile from the coast
Pliocene San Diego formation fossils.	Vicinity of the U.S./Mexican border 2 miles from the coast
Cabrillo formation.	Sea cliff in Point Loma
Point Loma formation.	Along Point Loma Peninsula at southern end
La Posta quartz diorite.	La Posta Valley
Stratigraphic relationship between Jacumba volcanic rock (Alverson andesite) and “Table Mountain gravels” and reworked younger gravels.	West of Jacumba

Source: County of San Diego 1975

4.5.2 REGULATORY SETTING

FEDERAL LAWS, REGULATIONS, PLANS, AND POLICIES

Cultural Resources

Historic Sites, Building, Objects, and Antiquities Act

The Historic Sites, Building, Objects and Antiquities Act (16 USC 461–462, 464–467) was passed in 1935 to preserve American sites, buildings, objects, and antiquities of national significance for public use. This Act created the position of Secretary of the Interior and established an advisory board, members of which are appointed by the Secretary, to aid him or her in implementing the Act. Powers of this Act can be executed by the National Parks Service on both Federal and Nonfederal Lands. Relying on authority provided by this Act, the National Natural Landmarks (NNL) Program was established in 1962 to recognize and encourage the conservation of outstanding examples of the country's natural history. NNLs are designated by the Secretary of the Interior, with the owner's concurrence, as being of national significance, defined as being one of the best examples of a biological community or geological feature within a natural region of the United States.

National Historic Landmarks Program

The National Historic Landmarks Program, developed in 1982, identifies and designates National Historic Landmarks and encourages the long-range preservation of nationally significant properties that illustrate or commemorate the history and prehistory of the United States. This program sets forth the criteria for establishing national significance and the procedures used by the Department of the Interior for conducting the National Historic Landmarks Program.

National Environmental Policy Act (NEPA)

NEPA (42 USC 4321 et seq.) directs federal agencies to use all practicable means to "preserve important historic, cultural, and natural aspects of our national heritage" (Section 101[b] [4]). Regulations for implementing NEPA are found in 40 Code of Federal Regulations (CFR) Parts 1500–1508. Consideration of cultural resources is required under NEPA for proposed federal actions.

National Historic Preservation Act (NHPA)

The NHPA (16 USC 470–470b, 470c–470n) was passed in 1966 and set the foundation for much of the more specific legislation that guides cultural resource protection and management in local jurisdictions. The law outlines the responsibilities of federal agencies and specific guidelines that must be followed when assessing the effects of a project on a historic site. Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council a reasonable opportunity to comment on such undertakings. The goal of the Section 106 process is to identify historic properties potentially affected by the undertaking; assess its effects; and seek ways to avoid, minimize, or mitigate any significant impacts related to historic properties. The NHPA allows the Secretary to withhold information about the location, character, or ownership of a historic resource from the public if it is determined that the release of this information would risk harm to the historic resource.

National Register of Historic Places (NRHP)

The NRHP is a list of federally recognized historic sites, buildings, and structures that are to be preserved, as they are significant to the history of their community, state, or the country. Established by the NHPA and developed in 1981, the NRHP is an authoritative guide to be used by federal, state, and local governments; private groups; and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment. Sites listed in the NRHP must be considered in the planning of all federal, federally licensed, and federally assisted projects. Listing of private property in the NRHP does not prohibit under federal law or regulation any actions that may otherwise be taken by the property owner with respect to the property.

Native American Graves Protection and Repatriation Act (NAGPRA)

NAGPRA (25 USC 3001 et seq.) was passed in 1990 and establishes the rights of Native American lineal descendants for ownership and control of Native American human remains and cultural objects. NAGPRA requires that an inventory of Native American human remains and funerary objects must be compiled by federal funded agencies and all museums and educational institutions receiving federal funds. Additionally, NAGPRA makes it illegal to traffic Native American remains and cultural items without the right of possession, whether or not they derive from federal or Native American lands.

The second major purpose of NAGPRA is to provide greater protection for Native American burial sites and more careful control over the removal of Native American human remains, funerary objects, sacred objects, and items of cultural patrimony on federal and tribal lands. All Indian tribes or Native Hawaiian organizations must be consulted whenever archaeological investigations encounter, or are expected to encounter, Native American cultural items or when such items are unexpectedly discovered on federal or tribal lands. Excavation or removal of any such items also must be done under procedures required by the Archaeological Resources Protection Act (Sec. 3 (c)(1)).

Archaeological Resources Protection Act of 1979

The Archaeological Resources Protection Act (16 USC 470aa–47011) was passed in October of 1979 to increase the protection of unique archaeological resources on public and Indian lands. Section 9 of this act provides for the confidentiality of archaeological resource and their locations. This prevents looting and destruction of these resources.

The Department of Transportation Act

Passed in 1966, the Department of Transportation Act (49 USC 303, formerly 49 USC 1651(b)(2) and 49 USC 1653f) includes Section 4(f), which states that the FHWA and other USDOT agencies cannot approve the use of land from public and private historical sites unless certain conditions apply. These exceptions are the following: If there is no feasible and prudent avoidance alternative to the use of land, and if the action includes all possible planning to minimize harm to the property resulting from such use; or if The Administration determines that the use of the property will have a *de minimis* impact.

The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation

These standards, effective as of 1983, provide technical advice for archaeological and historic preservation practices. Their purpose is (1) to organize the information gathered about preservation activities; (2) to describe results to be achieved by federal agencies, states, and others when planning for the identification, evaluation, registration, and treatment of historic properties; and (3) to integrate the diverse efforts of many entities performing historic preservation into a systematic effort to preserve the nation's culture heritage (48 FR 44716).

The Secretary of the Interior's Standards for Rehabilitation

These standards were established by the Secretary of the Interior in 1986 as a way to homogenize rehabilitation efforts of nationally significant historic properties and buildings. These standards pertain to actions involved in returning a property to a state of utility through repair or alteration. This allows for the preservation of historic and cultural values of the property, while giving it an efficient contemporary use (36 CFR 67).

The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, 1995

The Standards for the Treatment of Historic Properties is a compilation of 34 guidelines to promote the responsible preservation of U.S. historic cultural resources. The standards specifically address preservation, rehabilitation, restoration, and reconstruction of historic materials. The standards are not intended to be the sole basis for decision making in regard to whether a historic property should be saved, but to provide consistency in conservation and restoration practices (36 CFR 68).

Paleontological Resources

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects. (e.g., Antiquities Act of 1906 [16 U.S. Code [USC] 431–433], Federal-Aid Highway Act of 1960 [23 USC 305]), and the Omnibus Public Land Management Act of 2009 [16 USC 470aaa]).

STATE LAWS, REGULATIONS, PLANS, AND POLICIES

California Office of Historic Preservation (OHP)

The OHP is responsible for administering federally and state mandated historic preservation programs to protect California's historic and archaeological resources. The OHP is guided by the State Historic Preservation Officer and the State Historical Resources Commission. The OHP is responsible for (1) Identifying, evaluating, and registering historic properties; (2) ensuring compliance with federal and state regulations; (3) encouraging adoption of economic incentive programs designed to benefit property owners; and (4) encouraging economic revitalization by promoting historic preservation through education and public awareness, and by demonstrating leadership and stewardship for historic preservation in California.

California Historical Landmarks Program

The Historical Landmarks Program was instated to register buildings or landmarks of historical interest. Historical Landmarks are defined as sites, buildings, or features that have a statewide historical, cultural, anthropological, or other significance. To be designated as a Historical Landmark by the Director of California State Parks, the resource must meet set criteria, be recommended for designation by the State Historical Resources Commission, and be approved by the property owners. The goals of the program include the preservation and maintenance of registered landmarks, most of which include missions, early settlements, battles, and gold rush sites (PRC Sections 5020.4, 5021, 5022, 5022.5, 5031, and 5032).

California Points of Historical Interest Program

Points of Historical Interest are sites, buildings, or features that are of local historical, cultural, or anthropogenic significance. The California Points of Historical Interest Program was established in the effort to accommodate local historic properties unable to meet the restrictive criteria of the California Historical Landmarks Program, so that they may still be given limited protection in regard to development. The Points of Historical Interest Program requires the participation of local governmental officials in the approval process (PRC Sections 5020.4, 5021, 5022, 5022.5, 5031, and 5032).

California Register of Historical Resources (CRHR)

The CRHR program was designed for use by state and local agencies, private groups, and citizens to identify, evaluate, register, and protect California's historical resources. A historical resource can include any object, building, structure, site, area, or place that is determined to be historically or archaeologically significant. The CRHR is an authoritative guide to the state's significant archaeological and historic architectural resources. The list of these resources can be used for state and local planning purposes, the eligibility determinations can be used for state historic preservation grant funding, and listing in the CRHR provides a certain measure of protection under CEQA.

Public Notice to California Native American Indian Tribes (Government Code Section 65092)

In the event of a public hearing, Government Code Section 65092 states that California Native American tribes on the contact list of the NAHC are included in the definition of "person" to whom notice of the public hearing will be sent to by local governments or agencies.

Tribal Consultation Guidelines (Senate Bill [SB] 18, 2004)

SB 18 of 2004 (Chapter 905, Statutes of 2002) provides for the protection of Native American cultural lands and places by requiring cities and counties to consult with California Native American Tribes prior to adopting or amending a general plan, or designating land as open space. In 2005, the Governor's Office of Planning and Research released the Tribal Consultation Guidelines (OPR 2005) as a supplement to the General Plan Guidelines to aid cities and counties in implementing the provisions of SB 18.

California Environmental Quality Act (CEQA)

CEQA applies to all discretionary projects undertaken or subject to approval by public agencies (CEQA Guidelines Section 15002[i]). CEQA (Public Resources Code [PRC] Section 21001[b], [c]) states that it is the policy of the State of California to "take all action necessary to provide the people of this state with… historic environmental qualities…and preserve for future generations examples of the major periods of California history." CEQA Guidelines require that historical and unique archaeological resources be taken into account during the environmental review process. Section 15064.5 of the Guidelines states that "a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment."

Archaeological Resources

If the cultural resource in question is an archaeological site, the CEQA Guidelines (Section 15064.5[c][1]) require that the lead agency first determine if the site is a historical resource as defined in Section 15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource (CEQA Guidelines Section 15064.5[c][2]). If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological resource, then the archaeological site is treated in accordance with CEQA PRC Section 21083.2 (CEQA Guidelines Section 15064.5[c][3]). In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource.

CEQA (PRC Section 21083.2[g]) defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

- Contains information needed to answer important scientific research questions, and there is public information in that information.
- Has a special and particular quality, such as being the oldest or best example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Historical Resources

The CEQA Guidelines (Section 15064.5[a]) define a "historical resource" as including the following:

- A resource listed in, or eligible for listing in, the California Register of Historical Resources;
- A resource listed in a local register of historical resources (as defined at PRC Section 5020.1[k]);
- A resource identified as significant in a historical resources survey meeting the requirements of PRC Section 5024.1(g); or
- Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. (Generally, a resource is considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR. See further discussion of the CRHR below.)

A project that causes a "substantial adverse change" in the significance of a historical resource may have a significant effect on the environment (CEQA Guidelines Section 15064.5[b]). The CEQA Guidelines (Section 15064.5[b][1]) define "substantial adverse change" as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." Generally, the significance of a historical resource is "materially impaired" when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in or eligibility for the CRHR, or its inclusion in a local register of historical resources (CEQA Guidelines Section 15064.5[b][2]).

Mitigation measures are discussed in Section 21084.1 as well as Section 15126.4. Generally, by following the Secretary of the Interior's Standards for the Treatment of Historic Properties or the Secretary of the Interior's Standards for Rehabilitation, impacts can be considered as mitigated to a level less than significant (CEQA Section 15064.5 [b]).

Public Resources Code (PRC) – Section 5097.5, Section 5097.9 and Section 622.5

PRC Section 5097.5 states that a person shall not knowingly excavate, harm, or destroy any historic or prehistoric ruins or sites on public lands, unless granted permission by the public agency that has jurisdiction over those lands. It goes on to state that if this section is violated, the action is classified as a misdemeanor, punishable by fine and/or imprisonment. The section outlines the specific parameters of addressing the violation. PRC Section 622.5 establishes that any person, who is not the owner thereof, who willfully injures, disfigures, defaces, or destroys an object of archaeological or historical value on private or public lands is guilty of a misdemeanor.

Section 5097 was amended in 1987 (5097.9) to require consultation with the California NAHC whenever Native American graves are found. Pursuant to Health and Safety Code subdivision c of Section 7050.5 (see below), when the NAHC is notified of human remains, it shall immediately notify those persons it believes to be the Most Likely Descendants (MLDs). Section 5097.98 1(b) states: "Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section, with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment." It also states possible preferences the MLD may have for said treatment, including preservation in place, nondestructive removal and analysis, relinquishment to the MLD, or other appropriate treatment. Conferral or discussion between the MLD and landowner is described in Section 5097.98 2(c) as "meaningful and timely discussion and careful consideration of the views of each party, in a manner that is cognizant of all parties' cultural values, and where feasible, seeking agreement."

Health and Safety Code (HSC)

HSC Sections 18950–18961 – State Historical Building Code. HSC Sections 18950 through 18961 provide alternative building regulations and building standards for the rehabilitation, preservation, restoration (including related reconstruction), or relocation of buildings or structures designated as historic buildings. Such alternative building standards and building regulations are intended to facilitate the restoration or change of occupancy so as to preserve their original or restored architectural elements and features, to encourage energy conservation and a cost-effective approach to preservation, and to provide for the safety of the building occupants.

HSC 7050.5 – Human Remains. HSC Section 7050.5 requires that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until the County Coroner has examined the remains. If the Coroner determines, or has reason to believe, the remains to be those of a Native American, the Coroner shall contact the NAHC by telephone within 24 hours. In addition, any person who mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor.

Assembly Bill (AB) 52

AB 52 (Chapter 532, Statutes of 2014) was passed on September 25, 2014, and applies to all projects that file a notice of preparation or notice of negative declaration or mitigated negative declaration on or after July 1, 2015. The bill requires that a lead agency begin consultation with a California Native American tribe if that tribe has requested, in writing, to be kept informed of proposed projects by the lead agency, prior to the determination whether a negative declaration, mitigated negative declaration, or environmental impact report will be prepared. The bill also specifies mitigation measures that may be considered to avoid or minimize impacts on tribal cultural resources. Additionally, the Office of Planning and Research (OPR) will revise the guidelines to separate the consideration of tribal cultural resources from paleontological resources by July 1, 2016.

REGIONAL AND LOCAL LAWS, REGULATIONS, PLANS, AND POLICIES

County of San Diego Code of Regulatory Ordinances Sections 87.101–87.804, Grading, Clearing, and Watercourses Ordinance

Section 87.430 of the Grading and Clearing Ordinance states that a qualified paleontologist may be required by the County Official to be present during all grading activities for monitoring purposes. If a fossil greater than 12 inches in any diameter is found, all grading operations must be suspended and the County Official must be notified immediately. The County Official will analyze the resource and determine the proper course of action, to be carried out by the permittee, prior to the County Official's authorization to resume normal grading operations.

Section 87.429 provides that if human remains or Native American artifacts are found during grading operations, operations shall be stopped, the County Official shall immediately be informed, and HSC 7050.5 and PRC 5097.99 shall be complied with. Additionally, Section 87.216(a)(7) requires changes to grading plans/operations if it is determined that historic or archaeological resources may be located on-site, in which case avoidance or mitigation will be required.

County of San Diego Code of Regulatory Ordinances Sections 86.601–86.608, Resource Protection Ordinance (RPO)

This ordinance requires that cultural resources be evaluated as part of the County's discretionary environmental review process and if any resources are determined significant under RPO, they must be preserved. RPO prohibits development, trenching, grading, clearing, and grubbing, or any other activity or use damaging to significant prehistoric or historic site lands, except for scientific investigations with an approved research design prepared by an archaeologist certified by the Register of Professional Archaeologists. Sites determined to be RPO significant must be avoided and preserved.

San Diego County Local Register of Historical Resources (San Diego County Administrative Code Section 396.7)

The County of San Diego maintains a Local Register that was modeled after the CRHR (San Diego County Administrative Code Section 396.7). The purpose of the San Diego County Local Register of Historical Resources is to develop and maintain "an authoritative guide to be used by state agencies, private groups, and citizens to identify the County's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Sites, places, or objects that are eligible to the NRHP or the CRHR are automatically included in the San Diego County Local Register of Historical Resources. Resources may also be listed on the Local Register if they meet set criteria specified in Section 396.7 of the San Diego County Administrative Code.

Local Jurisdictions' Preservation Policies and Regulations

Every local government in California has the authority to adopt local ordinances that pertain to historic and archaeological resources. San Diego County and many cities in the County have policies and regulations dedicated to the preservation of historic and archaeological resources. Jurisdictions with applicable ordinances are listed below in Table 4.5-4.

Table 4.5-4
Local Cultural Preservation Ordinances

Jurisdiction	Local Government/Regulations
City of Carlsbad	Municipal Code, Title 22
City of Chula Vista	Municipal Code, Title 21
City of Coronado	Municipal Code, Title 84
City of Del Mar	Municipal Code, Chapter 30.58
City of El Cajon	Municipal Code, Chapter 17.55
City of Encinitas	Municipal Code, Chapter 30.34.050
City of Escondido	Municipal Code, Chapter 33, Article 40
City of Imperial Beach	None
City of La Mesa	Municipal Code, Title 25
City of Lemon Grove	None
City of National City	Code of Ordinances, Chapter 15.34, Chapter 18.12
City of Oceanside	Code of Ordinances, Chapter 14A
City of Poway	Municipal Code, Chapter 17.45
City of San Diego	Municipal Code, Chapter 14, Article 3, Division 2
City of San Marcos	None
City of Santee	Municipal Code, Chapter 15.60
City of Solana Beach	Municipal Code, Title 17.60.160
City of Vista	Municipal Development Code, Chapter 15.12
County of San Diego	County Administrative Code, Article XXII

Source(s): City of Carlsbad 2014; City of Chula Vista 2014; City of Coronado 2014, City of Del Mar n.d.; City of El Cajon 2014; City of Encinitas 2013; City of Escondido 2014; City of La Mesa, 2014; City of National City 2014; City of Oceanside 2014; City of San Diego 2014; City of Santee 2014; City of Solana Beach 2014; City of Vista 2014; County of San Diego 2015.

Local jurisdictions may also have policies dedicated to the preservation of unique geological features, natural landforms, and paleontological resources. These policies are listed in Table 4.5-5.

Table 4.5-5
Local Policies Concerning Unique Geological and Paleontological Features

Jurisdiction	Policies
Carlsbad	The Open Space and Conservation Element of the Carlsbad General Plan contains Policy B.3, which preserves areas of unique scenic, historical, archaeological, paleontological, and cultural value, and where possible, provides public access to these areas; and Policy B.7, which minimizes impacts from new development on hillsides, ridges, valleys, canyons, lagoons, beaches and other unique resources that provide visual and physical relief to the cityscape. The General Plan for Carlsbad is being updated as of January 2015; however, these Policies will be unaffected according to the draft document.
Chula Vista	The Environment Element of the Chula Vista General Plan contains Policy E 10.1 to continue to assess and mitigate the potential impacts of private development and public facilities and infrastructure to paleontological resources in accordance with the California Environmental Quality Act.
Coronado	The Conservation Element of the Coronado General Plan contains objectives to preserve the shoreline from erosion.
Del Mar	The Del Mar Community Plan contains objectives to preserve the integrity of the coastal bluffs and prevent erosion on steep slopes. The Bluff, Slope, and Canyon Specific Plan provides the implementation strategy to protect these natural resources.
El Cajon	The City of El Cajon General Plan does not contain policies or regulations specific to unique geological features.
Encinitas	The Resource Management Element of the Encinitas General Plan contains policies to document and preserve paleontological resources.
Escondido	The Land Use and Community Form and Resource Conservation Elements of the Escondido General Plan contain policies to conserve hillsides, ridgelines, and paleontological resources.
Imperial Beach	The City of Imperial Beach General Plan and Local Coastal Plan does not contain policies or regulations specific to unique geological features or landforms.
La Mesa	The Conservation and Sustainability Element and Recreation and Open Space Element of the La Mesa General Plan contain policies and conservation objectives to protect natural landforms and significant physical features.
Lemon Grove	The Conservation and Recreation Element of the Lemon Grove General Plan contains Policy 2.1, which protects significant fossils and prehistoric artifacts from development impacts.
National City	The Open Space and Agriculture Element of the National City General Plan contains Policy OS-1.1, which protects and conserves the landforms and open spaces that define the city's urban form, provide public views/vistas, serve as core biological areas and wildlife linkages, or are wetland habitats; and Policy OS-8.8, which requires monitoring for sub-surface cultural and paleontological resources during grading and construction activities for all development projects.
Oceanside	The Environmental Resource Management Element of the Oceanside General Plan contains implementation strategies and policies for reducing erosion and other environmentally damaging impacts.
Poway	The City of Poway General Plan does not contain policies or regulations specific to unique geological features or landforms.
City of San Diego	The Conservation Element of the City of San Diego General Plan includes the goal for the preservation and long-term management of the natural landforms and open spaces that help make San Diego unique. Policy CE-B.1 protects and conserves

Jurisdiction	Policies
	important landforms, canyon lands, and open spaces.
San Marcos	The City of San Marcos General Plan, in the Conservation Element, includes Policy COS-2.4 and 2.5, which preserves prominent landforms through conservation and management policies. Implementing strategies establish provisions for limiting environmental impacts to landforms, reducing erosion and runoff, and utilizing techniques for open space conservation.
Santee	The Santee General Plan includes Policy 1.1, which encourages significant natural landforms to be maintained during development whenever possible, and Policy 10.2, which encourages the preservation of significant natural features, such as watercourses, ridgelines, steep canyons, and major rock outcroppings through the Development Review process.
Solana Beach	The City of Solana Beach Municipal Code contains Objective 2.0 to preserve the city's hillside areas and natural landforms in their present state to the greatest extent possible. As of January 2015, the City of Solana Beach is in the process of updating its general plan, which may lead to new or different policies regarding unique geological and paleontological features.
Vista	The City of Vista General Plan contains RCS Goals 11, 12, and 13 to provide for the protection of cultural, historical, and paleontological resources. The General Plan also contains provisions to protect important geological features.
Unincorporated County of San Diego	The San Diego County General Plan includes Goal COS-9 in the Conservation and Open Space Element, which requires the conservation of unique geologic features. Policy COS-9.2 requires future development to minimize impacts to unique geologic features.
Tribal Lands	Policies and regulations regarding unique geological features are determined by the individual tribe.

Source: City of Carlsbad 2006, 2015; City of Chula Vista 2005; City of Coronado 1994; City of Del Mar 1985; City of El Cajon 2000; City of Encinitas 1995; City of Escondido 2012; City of Imperial Beach 2010; City of La Mesa 2012; City of Lemon Grove 1996; City of National City 2011; City of Oceanside 2002; City of Poway 1991; City of San Diego 2008; City of San Marcos 2013; City of Santee 2003; City of Solana Beach 2006; City of Solana Beach 2015; City of Vista 2011; County of San Diego 2011.

4.5.3 SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines ("Appendix G") provides criteria for determining the significance of a project's environmental impacts, in the form of Initial Study checklist questions. Unless otherwise noted, the significance criteria specifically developed for this EIR are based on the checklist questions that address the criteria in Appendix G. In some cases SANDAG has combined checklist questions, edited their wording, or changed their location in the document in an effort to develop significance criteria that reflect the programmatic level of analysis in this EIR, and the unique characteristics of the proposed Plan and EIR.

Specifically, the separate criteria in CEQA Appendix G (V) related to (a) a substantial adverse change in the significance of a historical resource and the criteria addressing (b) an adverse change in the significance of an archaeological resource have been combined for the purposes of this document as CULT-1. CEQA Appendix G (V) criterion (d) addressing the disturbance of human remains, is aligned with CULT-2, and criterion (c) addressing paleontological resources and unique geologic features is aligned with PALEO-1.

A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. CEQA Guidelines Section 15064.5(b) further states that a substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource or unique archaeological resources would be materially impaired. The significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that conveys its historical significance and that justify its inclusion in or eligibility for inclusion in the CRHR, or demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historic places pursuant to Section 5020.1 of the PRC or its identification in a historical resources survey meeting the requirements of Section 5024.1 of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant, or demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA (CEQA Guidelines Section 15064.5(b)(2).)

For purposes of this EIR, implementation of the proposed Plan would have a significant cultural or paleontological resources impact if it would:

CULT-1 Cause a substantial adverse change in the significance of a historical resource[1] or unique archaeological resource[2].

CULT-2 Disturb any human remains, including those interred outside of formal cemeteries, in violation of existing laws and regulations protecting human remains.

PALEO-1 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4.5.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

CULT-1 CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE OR UNIQUE ARCHAEOLOGICAL RESOURCE.

ANALYSIS METHODOLOGY

A substantial adverse change to the significance of a historical resource is defined as the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the cultural resource would be materially impaired (CEQA Guidelines Section 15064.5); this definition can also be applied to a substantial adverse change to a unique archaeological resource. This definition applies to a cultural resource that is determined eligible for listing in the NRHP or the CRHR. Such cultural resources are considered CEQA-defined "historical resources." Resources listed in the San Diego County Local Register, other local jurisdictions with locally identified historical resources, or resources identified as significant in a historical resource survey meeting the requirements in Section 5024.1 (g) of the Public Resources Code are presumed historically or culturally significant under CEQA as well.

[1] See definition of "historical resource" in Section 4.5.2 Regulatory Setting.
[2] See definition of "unique archaeological resource" in Section 4.5.2 Regulatory Setting.

This section analyzes the impacts to historical and unique archaeological resources as a result of implementation of the proposed Plan. This section identifies areas in the region with a high potential for historic architectural, and archaeological resources based on locations of past discoveries. Construction activities are more likely to disturb archaeological resources remains than operational activities because they are most likely to be encountered with initial ground disturbance. For regional growth and land use change projects, as well as transportation network improvements, the likelihood of encountering archaeological resources is analyzed based on whether projects would require grading, excavation, or other ground-disturbing activities. Even minimal grading activities can encounter resources, as they have been discovered only inches below the surface. Ground-disturbing activities associated with infill, redevelopment, and the expansion of infrastructure have the potential to unearth these resources. Construction activities are also most likely to impact historical resources of an architectural nature. Impacts could include demolition (for instance, an interchange reconfiguration may require demolition of structures in that area) or impacts to the viewshed of a historic structure (thereby affecting the integrity of its setting and impacting its significance). Regional growth and land use change as well as transportation network improvements and programs are analyzed for impacts due to ground disturbance and other project activities that could alter their significance.

2020

Regional Growth and Land Use Change

As discussed in Section 4.5.1, numerous architectural and archaeological resources have been documented throughout the San Diego region. These include historic architectural resources (e.g., historic buildings or structures) listed on federal, state, and local registers as well as archaeological sites and ethnographic resources, some of which include human remains. While many of these resources have been identified and documented within the San Diego region, there are likely many more resources that remain undiscovered.

As discussed in Section 4.5.1, many areas within the San Diego region have a high potential to yield archaeological and historic architectural resources. The location of past discoveries can be useful in determining where unknown~~-t~~ resources are likely encountered. Intact archaeological resources are most likely encountered in previously undeveloped land, but both historic and archaeological resources are likely found in the downtown areas in older neighborhoods. Many of the areas within the County of San Diego, such as Lakeside and Fallbrook, have both large undeveloped areas where resources have been encountered in the past and old downtown areas that contain known historical resources. Lagoons and rivers were resource and transportation areas during prehistoric times, while coastal communities were some of the earliest and heaviest areas of settlement during historic times. For example, the earliest known archaic sites in the San Diego region were found near coastal lagoons and river valleys.

Regional growth and land use change would result in a wide range of construction and ground-disturbing activities, such as excavation, grading, and clearing, which remove and/or disturb the upper layer of soils. Since archaeological and historic architectural resources have been found within inches of the ground surface in some areas of the San Diego region, these resources can be encountered even during minor grading and ground disturbance activities. In addition, redevelopment and intensification of land uses may result in the demolition or substantial alteration of historic resources in or near established urban areas or town centers, where built historic resources are typically located.

As Section 4.5.1 describes, there are many historic districts and built historic resources in the western portion of the region, such as Balboa Park, Gaslamp Quarter Historic District, Old Town San Diego Historic District, and the San Diego Civic Center, among others. Since this portion of the region is forecasted to experience much of the growth under the proposed Plan, historic resources in these areas would be encountered. Increases in development intensity would also introduce visual, audible, and other effects that indirectly affect built historic resources or alter the setting that contributes to the resources' significance. Construction activities would be more likely to affect both historical and unique archaeological resources than operational activities. Forecasted growth and land use change would also result in indirect physical impacts to open space areas, and thus increase the likelihood of physical impacts to cultural resources located within those areas. For instance, increased recreational use of open space areas could promote erosion or increase the likelihood of damage to cultural resources through increased traffic (foot or otherwise).

Encountering such resources does not necessarily result in impacts to those resources. For instance, a new development could be constructed near an old neighborhood that has significant resources but not result in direct impacts because no demolition or alteration would occur, nor would the development result in indirect impacts because no changes would occur to the setting or viewshed. An archaeological resource could be encountered by earth-moving activities, but laws and regulations are in place to protect historical resources by avoidance and by requiring feasible mitigation if this is not possible.

As discussed in Section 4.5.2 Regulatory Setting, numerous federal, state, and local laws, regulations, and programs are in place to protect cultural resources. For example, HSC Sections 18950–18961 and the Secretary of the Interior's Standards for Rehabilitation provide regulations for the restoration or rehabilitation of historic structures to preserve their original or restored architectural elements and features, while providing a safe building for occupants. Local policies ordinances can give cultural and historical resources added protection through requiring surveys and giving them local designations of significance. Additionally, the Secretary of the Interior's Standards for the Treatment of Historic Properties were developed to help protect historical resources by promoting consistent preservation practices. Also, local jurisdictions have responsibilities to identify and mitigate adverse effects to significant cultural resources under CEQA.

Redevelopment and intensification of land uses may also result in the demolition or substantial alteration of historic resources or the removal of a significant archaeological site. Adherence to the existing laws, regulations, and programs discussed above would avoid and reduce impacts to historic architectural resources from construction of development projects associated with regional growth and land change, but there is no assurance that they would reduce impacts to a less than significant level for all projects. Therefore, regional growth and land use change would cause a substantial adverse change in the significance of a historical resource or unique archaeological resource. This is a significant impact.

Transportation Network Improvements and Programs

As stated previously, numerous archaeological and historic architectural resources have been documented in the San Diego region, and the potential exists for unknown resources to be discovered. Given this rich cultural setting, construction of transportation network improvements included in the proposed Plan would encounter these resources.

Some of the improvements in the proposed Plan planned by 2020 would involve only operational changes that would not involve construction of new transportation or transit facilities, such as increasing service frequencies or new transit routes within existing right-of-way. These changes would generally not lead to impacts to cultural resources.

However, the improvements that would involve construction of new infrastructure or facilities could encounter cultural resources. Highway improvements (such as lane expansions), construction of new Managed Lanes and general purpose lanes, Trolley extensions, and COASTER double-tracking would require grading and other ground-disturbing activities.

These activities remove and/or disturb the upper layer of soils and have the potential to unearth underlying archaeological and historic architectural resources, and cause a direct disturbance to ethnographic and/or buried resources. Given that numerous prehistoric sites are known to exist along the shores, estuaries, lagoons, and bluffs of the San Diego coastline, grading and ground disturbance activities along I-5 from Manchester to SR 78 (in order to add two new Managed Lanes, for example), have the potential to encounter archaeological resources. Other known and unknown prehistoric and historic sites could be harmed by grading and construction of transportation network improvements. For federally funded projects, Section 106 of the NHPA and Section 4f of the Department of Transportation Act would reduce impacts to cultural resources because they require significant properties to be identified, and adverse effects to be avoided or mitigated.

In addition, construction of transportation network improvements may result in the demolition or substantial alteration of historic resources in or near established urban areas or town centers. Transportation network improvements would also introduce operational visual, audible, vibrational, and other effects that indirectly affect built historic resources or alter the setting that contributes to the resources' historic value, as well as negatively impact the structures through increased levels of corrosive air contaminates (Inkpen 2004) , which may damage the exterior of historic buildings.

Transit improvements by 2020, including the construction of the Mid-Coast Trolley line and double-tracking of the COASTER, would result in ground-disturbing activities within and around the Old Town Community Planning Area, and north along the coast through Camp Pendleton. Since unique archaeological materials are routinely identified during excavations and monitoring of construction activities in the Old Town Community Planning Area, existing unknown resources may be encountered. Double-tracking of the COASTER alignment would result in project construction and operation within the Old Town San Diego Historic District and the Presidio. These are prime locations for the presence of historical or unique archaeological resources.

Upon implementation of the individual transportation network improvements and programs included as part of the proposed Plan, both known and unknown archaeological and historic architectural resources would be encountered. As discussed above, while adherence to the existing laws, regulations, and programs discussed above would avoid or reduce impacts to cultural resources when they are encountered during the construction of transportation network improvements, there is no assurance that they would reduce all impacts to a less than significant level for all future projects. Implementation of the proposed Plan would result in ground-disturbing activities related to transportation network improvements and programs that would cause a substantial adverse change in the significance of a historical resource or unique archaeological resource. This is a significant impact.

2020 Conclusion

Implementation of the proposed Plan would result in regional growth and land use change and transportation network improvements and programs that would cause a substantial adverse change in the significance of a historical resource or unique archaeological resource. Therefore, this impact (CULT-1) in the year 2020 is significant.

2035

Regional Growth and Land Use Change

As discussed in the 2020 analysis, many areas throughout the San Diego region have a high potential to yield archaeological and historic architectural resources. In addition to the resource-sensitive areas mentioned in the 2020 analysis in the western portion of the region, the additional growth forecasted in the eastern rural portions of the San Diego region may occur in areas where archaeological and historic architectural resources are present, as historically or archaeologically significant resources have been found throughout the unincorporated County (County of San Diego 2011). Built historical resources in the unincorporated County tend to be concentrated in the more developed areas such as Spring Valley and San Dieguito, and in areas with established town centers, such as Ramona, Julian, and Fallbrook. Built historical resources are also generally located along major roadways, such as I-8 and SR 78. In addition, some built resources exist within the unincorporated County that are historically significant but have not yet been designated (County of San Diego 2011).

Regional growth and land use change forecasted to occur throughout the region would result in additional construction and ground-disturbing activities, such as such as excavation, grading, clearing, demolition, alteration, or structural relocation. Forecasted growth and land use change would also result in indirect physical impacts to open space areas, and thus increase the likelihood of physical impacts to cultural resources located within those areas. For instance, increased recreational use of open space areas could promote erosion or increase the likelihood of damage to cultural resources through increased traffic (foot or otherwise). These ground-disturbing activities, associated with infill, redevelopment, and/or expansion of infrastructure, have the potential to encounter archaeological and historic architectural resources.

As discussed in the 2020 analysis, while adherence to existing laws, regulations, and programs would reduce impacts to archaeological and historic architectural resources upon implementation of the proposed Plan, there is no assurance that they would reduce these impacts to a less than significant level. Given the potential for land use changes to cause substantial adverse changes in the significance of historical and unique archaeological resources coupled with the nonrenewable nature of these resources if disturbed or altered, implementation of the proposed Plan would result in ground-disturbing activities related to regional growth and land use change that would cause a substantial adverse change in the significance of a historical resource or unique archaeological resource. This is a significant impact.

Transportation Network Improvements and Programs

As discussed in the 2020 analysis, due to the rich historic and prehistoric background of the San Diego region, the potential for identified and unidentified historical and cultural resources to be found within transportation network improvement and program areas exists. Some of the improvements in the proposed Plan completed by 2035 would involve only operational changes that would not involve construction of new transportation or transit facilities, such as increasing service frequencies or creating new transit routes, and therefore have little impact on historical and unique archaeological resources. However, improvements that would involve construction of new infrastructure or facilities could encounter sensitive resources. Transportation construction projects such as Trolley line extensions from UTC to Mira Mesa and Phase I of San Ysidro to Kearny Mesa, and Managed Lane construction along I-5 and 1-805 would require grading, and potentially trenching, activities that remove and/or disturb the upper layer of soils and could unearth underlying archaeological resources, and cause a direct disturbance to historical resources or unique archaeological resources.

Improvements along the I-5 corridor have the potential to impact archaeological resources that may be present along the shores, estuaries, lagoons, and bluffs of the San Diego coastline. If demolition of buildings were necessary for these alignments, then historic architectural resources could also be disturbed.

Given the magnitude and location of several of the transportation network improvements and programs occurring by 2035 (e.g., double-tracking of the COASTER rail and SPRINTER light rail lines), and the number of additional transportation network improvements over those previously implemented by 2020, additional ground disturbances are anticipated. As a result, additional archaeological resources would be encountered during construction activities between 2020 and 2035.

As discussed in the 2020 analysis, while adherence to the existing laws, regulations, and programs discussed in Section 4.5.2 would reduce impacts to cultural resources upon implementation of the proposed Plan, there is no assurance that they would reduce these impacts to a less than significant level for all future projects. Given the potential for transportation facilities to cause substantial adverse changes in the significance of cultural resources coupled with the nonrenewable nature of these resources if disturbed or altered, implementation of the proposed Plan would result in ground-disturbing activities related to transportation network improvements and programs that would cause a substantial adverse change in the significance of a historical resource or unique archaeological resource. This is a significant impact.

2035 Conclusion

Implementation of the proposed Plan would result in regional growth and land use change and transportation network improvements and programs that would cause a substantial adverse change in the significance of a historical resource or unique archaeological resource. Therefore, this impact (CULT-1) in the year 2035 is significant.

2050

Regional Growth and Land Use Change

As discussed in the 2020 and 2035 analyses, many areas throughout the San Diego region have a high potential to contain prehistoric and historic cultural resources. In addition to the resource-sensitive areas mentioned in the 2020 and 2035 analyses, the additional growth forecasted in both the unincorporated County and western portion of the region by 2050 would result in new development and redevelopment. Additional construction and ground-disturbing activities, such as such as excavation, grading, clearing, demolition, alteration, or structural relocation, would occur. Forecasted growth and land use change would also result in indirect physical impacts to open space areas, and thus increase the likelihood of physical impacts to cultural resources located within those areas. For instance, increased recreational use of open space areas could promote erosion or increase the likelihood of damage to cultural resources through increased traffic (foot or otherwise).These ground-disturbing activities, associated with infill, redevelopment, and/or expansion of infrastructure, have the potential to impact archaeological and historic architectural resources. With additional growth, ~~and~~ increased development intensities, and increased use of open space areas, the extent of impacts to archaeological and historic architectural resources by 2050 would be greater than that experienced by 2020 and 2035 as more resource-sensitive land would be disturbed over time.

As more land is disturbed and altered for new development and redevelopment by 2050, the possibility of irreversible losses of significant archaeological and historic architectural resources becomes greater. As discussed in the 2020 and 2035 analyses, while adherence to the existing laws, regulations, and programs would reduce impacts to archaeological and historic architectural resources upon implementation of the proposed Plan, there is no assurance that they would reduce these impacts to a less than significant level. Given the potential for land use changes to cause substantial adverse changes in the significance of cultural resources, coupled with the nonrenewable nature of these resources if disturbed or altered, implementation of the proposed Plan would result in ground-disturbing activities related to regional growth and land use change that would cause a substantial adverse change in the significance of a historical or archaeological resource. This is a significant impact.

Transportation Network Improvements and Programs

As true in the 2020 and 2035 analysis, potential exists for identified and unidentified archaeological and historic architectural resources to occur in transportation network improvement and program areas. Some of the improvements in the proposed Plan that would be implemented by 2050 would include only operational changes that would not involve construction of new transportation or transit facilities, such as increasing service frequencies or new transit routes within existing right-of-way. However, those that would involve construction of new infrastructure or facilities could result in impacts. Highway improvements such as Managed Lane construction along I-5, SR 52, SR 54, I-15, and 1-805 would require grading and, potentially, trenching activities that remove and/or disturb the upper layer of soils, and could encounter underlying archaeological and historic architectural resources. The Convention Center Station and track upgrades to extend COASTER service into downtown San Diego have the potential to encounter historical resources since historic period archaeological materials are routinely identified during excavations and monitoring of construction activities in downtown San Diego.

Any ground disturbances associated with these transportation network improvements may unearth underlying archaeological and historic architectural resources, and cause a direct disturbance to buried resources. Given the magnitude and location of several of the transportation network improvements occurring by 2050, and the number of additional transportation network improvements over those previously implemented by 2020 and 2035, additional significant ground disturbances are anticipated. It is possible that more archaeological and historic architectural resources would be disturbed by 2050.

As discussed in the 2020 and 2035 analyses, while adherence to the existing laws, regulations, and programs would reduce impacts to archaeological and historic architectural resources upon implementation of the proposed Plan, there is no assurance that they would reduce these impacts to a less than significant level for all future projects. Implementation of the proposed Plan would result in ground-disturbing activities related to transportation network improvements and programs that would cause a substantial adverse change in the significance of the resource. Given the potential for transportation facilities to cause substantial adverse changes in the significance of archaeological and historic architectural resources coupled with the nonrenewable nature of these resources if disturbed or altered, this is a significant impact.

2050 Conclusion

Implementation of the proposed Plan would result in regional growth and land use change and transportation network improvements and programs that would cause a substantial adverse change in the significance of a historical resource or unique archaeological resource. Therefore, this impact (CULT-1) in the year 2050 is significant.

MITIGATION MEASURES

CULT-1 SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE OR UNIQUE ARCHAEOLOGICAL RESOURCE

2020, 2035, and 2050

CULT–1A DEVELOP PROJECT-LEVEL MEASURES. During project-level CEQA review of transportation network improvements or development projects that would cause a substantial adverse change in the significance of a CEQA-defined "historical resource" or significantly affect a unique archeological resource, SANDAG shall, and transportation project sponsors, the County of San Diego, cities, and other local jurisdictions can and should, develop project-level protocols and mitigation measures, consistent with CEQA Guidelines Section 15126.4(b) and in consultation with the State Historic Preservation Officer (SHPO) as needed, to avoid or reduce impacts to CEQA-defined historical resources and unique archaeological resources. Allow for adequate resources to identify (through survey, consultation, or other means) cultural resources in order to develop minimization and avoidance methods where possible. Consult with appropriate Native American representatives to provide necessary input as to resources that are of concern. These may include natural areas that contain resources of importance to tribes that are located outside of reservations. Project-level mitigation measures include, but are not limited to, the following:

Unique Archaeological Resources

- Where feasible, avoid impacts to unique archaeological resources by preservation in place by:
  - Avoiding archaeological sites.
  - Deeding archaeological sites into permanent conservation easements.
  - Capping or covering archaeological sites with a layer of soil before building on the sites.
- If preservation in place is not feasible, reduce impacts on archaeological sites by completion of a data recovery program conducted in compliance with CEQA Guidelines Section 15126.4(b) and other transportation project sponsor guidelines. ~~(~~A data recovery program for archaeological sites consists of excavation of a percentage of the site (determined in consultation with the lead agency) to provide information necessary to answer significant research questions.~~)~~

Historic Resources

- Conduct maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, relocation, or reconstruction to reduce impacts on historic resources, and have a qualified architectural historian or historic architect review mitigation plans to review consistency with the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings; and
- If avoidance of a built historic resource is not feasible, apply additional mitigation options including, but not limited to, specific design plans for historic districts, or plans for alteration or adaptive reuse of a historical resource that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitation, Restoring, and Reconstructing Historic Buildings.

- If demolition of a historical resource must occur, apply mitigation options such as recordation including a building description, historical narrative, and photographic documentation of the building and appropriate as-built drawings similar to the Historic American Building Survey documentation outlined by the National Park Service (National Park Service 2015).

CULT–1B IMPLEMENT MONITORING AND DATA RECOVERY PROGRAMS. During project-level CEQA review and during construction of transportation network improvements or development projects, SANDAG shall, and other transportation project sponsors, the County of San Diego, cities, and other local jurisdictions can and should, implement monitoring and data recovery measures to reduce impacts on both known and undiscovered CEQA-defined historical resources and unique archaeological resources, including but not limited to the following:

- Require areas identified in any required monitoring and mitigation plan to be monitored during the grading phase of individual projects by a qualified archaeologist and tribal monitor if needed.
- Should an archaeological deposit and/or feature be encountered during construction activities that is determined to be a historic resource or unique by a qualified archaeologist, stop ground-disturbing activities and prepare and/or implement an Archaeological Data Recovery Program (ADRP) in consultation with SHPO.
- Integrate curation of archaeological and/or historical artifacts and associated records in a regional center focused on the care, management, and use of archaeological collections if the artifact must be excavated. This does not include Native American human remains and associated burial items, the disposition of which should be determined in consultation with the MLDs (see Impact CULT-2).

SIGNIFICANCE AFTER MITIGATION

2020, 2035, and 2050

Implementation of the proposed Plan would result in significant impacts to historical and unique archaeological resources through construction and ground-disturbing activities in 2020, 2035, and 2050. Implementation of CULT-1A and CULT-1B would reduce impacts through proper resource handling, surveys, regulatory compliance, and mitigation monitoring. However, it cannot be guaranteed that all future project-level impacts can be mitigated to a less than significant level. Therefore, this impact (CULT-1) would remain significant and unavoidable.

CULT-2 DISTURB ANY HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES, IN VIOLATION OF EXISTING LAWS AND REGULATIONS PROTECTING HUMAN REMAINS.

ANALYSIS METHODOLOGY

The following section analyzes the impact of the implementation of the proposed Plan on human remains and their associated burial sites and items. Both regional growth and land use change, and transportation network improvements and programs have the potential to encounter buried remains during grading, excavation, and other ground-disturbing activities. Construction activities are more likely to disturb human remains than operational activities because human remains are most likely to be encountered with initial ground disturbance.

Impacts of the proposed Plan are analyzed in combination with existing laws and regulations, such as California Health & Safety Code Section 7050.5, PRC Section 5097.98, and local ordinances, to determine significance. For regional growth and land use change projects, as well as transportation network improvements, the likelihood of encountering human remains is analyzed based on whether projects would require grading, excavation, or other ground-disturbing activities. Even minimal grading activities can encounter remains, as they have been discovered only inches below the surface. Ground-disturbing activities associated with infill, redevelopment, and the expansion of infrastructure have the potential to unearth remains.

This section acknowledges that California Health & Safety Code Section 7050.5 and PRC Section 5097.98 together address the circumstance in which project site excavation or other ground disturbance results in the discovery or recognition of any human remains in any location other than a dedicated cemetery or any nearby area reasonably suspected to overlay adjacent remains and provide specific guidance for addressing such remains before resuming excavation or disturbance of the project site. The HSC and PRC sections provide consultation and treatment options as well as outline appropriate communication protocols and discuss the need to maintain respect for and dignity of the remains and associated materials.

2020

Regional Growth and Land Use Change

The likelihood of encountering human remains is greatest for projects that include grading and/or excavation of areas on which past grading and/or excavation activities have been minimal. Since human remains have been found within inches of the ground surface throughout the San Diego region, even minimal grading activities can impact these resources. Excavation and soil removal of any kind, irrespective of depth, have the potential to yield human remains. While new development and redevelopment occurring by 2020 in the region would mostly result in the intensification of previously developed areas, ground-disturbing activities associated with infill, redevelopment, and/or expansion of infrastructure have the potential to unearth and impact buried human remains.

Given the regional growth and land use change forecasted by 2020, implementation of the proposed Plan would result in the intensification of land uses along established transportation corridors and waterways in where human remains may be located. For instance, human remains have been found in the San Diego River valley. As discussed in Section 4.5.2, Native American human burials have specific provisions for treatment in PRC Section 5097.98 and HSC 7050.5 as well as other laws and regulations. By halting all construction activities if human remains are found, impacts to those remains or any other remains or associated burial items also in that area can be avoided. NAGPRA also establishes procedures to be followed in the event of a discovery of Native American human remains on federal lands, stipulates that Native American cultural items must be returned to affiliated tribes and lineal descendants, and prevents the illegal trafficking of these items. This law provides additional protection and allows for proper handling of Native American human remains and associated burial items.

Regional growth and land use changes projects implementing the proposed Plan would be required to adhere to the laws and regulations discussed above and listed in Section 4.5.2. These laws outline appropriate treatments and the protocols for discussions regarding treatment options with MLDs; therefore, impacts associated with the disturbance of human remains would be less than significant.

Transportation Network Improvements and Programs

Some of the transportation network improvements and programs in the proposed Plan completed by 2020 would involve only operational changes that would not involve construction of new transportation or transit facilities, such as increasing service frequencies or operation of new transit routes within existing rights-of-way. These operational changes would have minimal impact on human remains. However, transportation improvements that would involve construction of new infrastructure or facilities could encounter human remains.

The likelihood of encountering human remains is greatest for projects that include grading and/or excavation of areas where past grading and/or excavation activities have been minimal; however, there is the potential to encounter human remains in previously developed areas. Since human remains have been found within inches of the ground surface in some areas of the San Diego region, even minimal grading activities can encounter these resources. Excavation and soil removal of any kind, irrespective of depth, have the potential to yield human remains. For example, implementation of Trolley line extensions would result in ground-disturbing activities within and around the Old Town Community Planning Area. Since historic period archaeological materials are routinely identified during excavations and monitoring of construction activities in the Old Town Community Planning Area, existing unknown resources, including buried human remains, may be encountered with these rail extensions. Additionally, numerous prehistoric sites are known to exist along the shores, estuaries, lagoons, and bluffs of the San Diego coastline. For example, double-tracking of the COASTER alignment would result in project construction and operation within the Old Town San Diego Historic District, and the Presidio. These are prime locations for early historic transportation and trade activities, as well as for prehistoric habitation.

The transportation network improvements have the potential to uncover previously undiscovered human remains because some would take place in previously undisturbed or underdisturbed areas. As discussed above, future transportation network improvements implemented by the proposed Plan would be required to adhere to the existing laws and regulations. Therefore, impacts associated with the disturbance of human remains would be less than significant because those laws and regulations would ensure the appropriate handling of any human remains that are encountered.

2020 Conclusion

Implementation of the proposed Plan has the potential to uncover buried human remains through ground-disturbing activities in 2020. The requirement to follow existing laws and regulations ensures that any human remains encountered are treated appropriately. Therefore, this impact (CULT-2) in the year 2020 is less than significant.

2035

Regional Growth and Land Use Change

The likelihood of encountering human remains is greatest for projects that include grading and/or excavation of areas on which past grading and/or excavation activities have been minimal. This would include areas of expansion in the eastern portion of the region where there has previously been little development.

Although the majority of regional growth and land use change will occur in the western portion of the region, by 2035 it is expected that some development will also occur in the eastern areas. Since archaeological resources have been found within inches of the ground surface throughout the San Diego region, even minimal grading activities can impact these resources. Excavation and soil removal of any kind, irrespective of depth, have the potential to yield human remains. While most new development and redevelopment would mostly result in the intensification of previously developed areas, ground-disturbing activities associated with infill, redevelopment, and/or expansion of infrastructure have the potential to unearth buried human remains.

As discussed in the 2020 analysis above, the types of activities that would result in significant impacts to human remains (i.e., excavation, grading, soil removal associated with infill, redevelopment, and/or expansion of infrastructure) would continue to occur into 2035 as development intensities would increase to accommodate the forecasted growth. With more construction anticipated to occur within previously unearthed areas, there is an increased potential to discover archaeological deposits or buried human remains.

By 2035, the extent of impacts to archaeological deposits or buried human remains would be greater than that experienced by 2020 as more land would be disturbed over time during development and redevelopment activities. As discussed in the 2020 analysis, if human remains were to be encountered during construction, work would halt in that area and the procedures set forth in PRC Section 5097.98 and HSC Section 7050.5 would be undertaken. Impacts associated with the disturbance of human remains would be less than significant because existing laws and regulations would ensure the appropriate handling of any human remains that are encountered.

Transportation Network Improvements and Programs

Some of the transportation network improvements and programs in the proposed Plan completed by 2035 would involve only operational changes that would not include construction of new transportation or transit facilities, such as increasing service frequencies or new transit routes within existing rights-of-way. These changes would have minimal effects on human remains. However, transportation improvements that would involve construction of new infrastructure or facilities could result in impacts as the likelihood of encountering human remains is greatest for projects that include grading and/or excavation of areas on which past grading and/or excavation activities have been minimal. Construction of transportation network improvements, such as Trolley line extensions from UTC to Mira Mesa and Phase I of San Ysidro to Kearny Mesa, and Managed Lane construction along I-5 and 1-805 would disturb new ground areas. Since human remains have been found within inches of the ground surface in some areas of the San Diego region, even minimal grading activities can impact these resources. Excavation and soil removal of any kind, irrespective of depth, have the potential to yield human remains.

As true in the 2020 analysis, any ground disturbances associated with transportation network improvements and programs may expose buried human remains. Given the magnitude and location of several of the transportation network improvements occurring by 2035, and the number of additional transportation network improvements over those previously implemented by 2020, additional ground disturbances are anticipated, and it is possible that, as more land is disturbed, buried human remains may be unearthed and the extent of these impacts would increase over time. As discussed above, if human remains were encountered during construction, work would halt in that area and the procedures set forth in PRC Section 5097.98 and HSC Section 7050.5 would be undertaken. Impacts associated with the disturbance of human remains would be less than significant because existing laws and regulations would ensure the appropriate handling of any human remains that are encountered.

2035 Conclusion

Implementation of the proposed Plan has the potential to uncover buried human remains through ground-disturbing activities in 2035. The requirement to follow existing laws and regulations ensures that any human remains encountered are treated appropriately. Therefore, this impact (CULT-2) in the year 2035 is less than significant.

2050

Regional Growth and Land Use Change

While most new development and redevelopment associated with the proposed Plan would result in the intensification of previously developed areas, ground-disturbing activities associated with infill, redevelopment, and/or expansion of infrastructure have the potential to unearth human remains. Additionally, by 2050 there would be increased development in areas of the unincorporated County, especially along County Highway S22. This area has previously experienced little to no ground disturbance. As true in the 2020 and 2035 analyses, when more and more land is disturbed and altered for new development and redevelopment anticipated as part of the proposed Plan, the possibility for encountering human remains becomes greater.

As discussed in the 2020 and 2035 analyses, if human remains were to be encountered during construction, work would halt in that area and the procedures set forth in PRC Section 5097.98 and HSC Section 7050.5 would be undertaken. Impacts associated with the disturbance of human remains would be less than significant because existing laws and regulations would ensure the appropriate handling of any human remains that are encountered.

Transportation Network Improvements and Programs

As true in the 2020 and 2035 analyses, due to the rich historic and prehistoric background of the San Diego region, the potential for human remains to occur within the transportation network improvement and program areas associated with the proposed Plan exists. Some of the improvements in the proposed Plan implemented by 2050 would involve only operational changes that would not involve construction of new transportation or transit facilities, such as increasing service frequencies or new transit routes within existing rights-of-way. These improvements should have no impact on human remains since they would be in previously disturbed areas. However, transportation improvements that would involve construction of new infrastructure or facilities could result in impacts to buried human remains. For example, widening of the highways or construction of new Managed Lanes and Trolley line extensions would require grading and possibly other ground-disturbing activities that remove and/or disturb the upper layer of soils and have could unearth underlying buried resources, including human remains.

Any ground disturbances associated with these transportation network improvements and programs may unearth underlying human remains. Given the magnitude and location of several of the transportation network improvements and programs occurring by 2050, and the number of additional transportation network improvements over those previously implemented by 2020 and 2035, additional significant ground disturbances are anticipated. It is possible that more buried human remains would be encountered by 2050.

As discussed in the 2020 and 2035 analyses, if human remains are encountered during construction, work would halt in that area and the procedures set forth in PRC Section 5097.98 and HSC Section 7050.5 would be undertaken. Impacts associated with the disturbance of human remains would be less than significant because existing laws and regulations would ensure the appropriate handling of any human remains that are encountered.

2050 Conclusion

Implementation of the proposed Plan has the potential to uncover buried human remains through ground-disturbing activities in 2050. The requirement to follow existing laws and regulations ensures that any human remains encountered are treated appropriately. Therefore, this impact (CULT-2) in the year 2050 is less than significant.

PALEO-1 DIRECTLY OR INDIRECTLY DESTROY A UNIQUE PALEONTOLOGICAL RESOURCE OR SITE OR UNIQUE GEOLOGIC FEATURE.

ANALYSIS METHODOLOGY

The following section analyzes the impacts of the proposed Plan on unique paleontological resources or sites or unique geologic features. The general locations of these sites are described in Section 4.5.1. This section analyzes the potential for ground-disturbing construction activities to uncover unique paleontological resources and unique geologic features.

Paleontological resources (i.e. fossil remains) are known to occur within the coastal plain, the desert, and alluvial deposits and other mountain formations. Construction activities associated with both land use changes and transportation network improvements (deep excavation, trenching, tunneling, blasting, chiseling rock formations, altered hydrologic flow, vibration, or erosion) in previously undisturbed areas would have the highest likelihood for encountering paleontological resources and unique geologic features.

2020

Regional Growth and Land Use Change

As described in Section 4.5.1 and Tables 4.5-2 and 4.5-3, geologic formations with moderate to high paleontological resource potential are present throughout the San Diego region. Excavation and grading activities associated with new development and redevelopment in areas with moderate to high paleontological resource potential include the cities of San Diego, Santee, and Chula Vista, and established rural communities like Fallbrook may encounter paleontological resources. Ground-disturbing activities in high or moderate sensitivity fossil-bearing geologic formations such as these have the potential to encounter paleontological resources that may be present below the ground surface.

The majority of unique geologic features are located in the eastern portions of the region in areas that are not forecasted to change significantly by 2020. Additionally, many of the unique geologic features listed in Table 4.5-2 are located in canyons, riverbanks, or other areas where construction would be infeasible or difficult. The policies and ordinances of local jurisdictions typically restrict construction on steep slopes to preserve hillsides and reduce hazards. Therefore, the majority of identified unique geologic features would not be directly impacted from regional development associated with the proposed Plan land use pattern.

However, some of identified unique geologic features listed in Table 4.5-3 are located in areas that would experience increased regional growth and land use change under the proposed Plan. Coastal communities such as Pacific Beach, La Jolla, Mission Beach, and Del Mar contain unique geologic features and are forecast to increase in residential and commercial densities by 2020. Other features are located near urban areas within the City of San Diego, such as those near the San Diego River in Mission Valley, or Rose Canyon. These geologic features may experience direct impacts from construction associated with increased development, including impacts caused by changes to hydrology and water runoff. Features sensitive to the effects of erosion, such as coastal bluffs or canyon walls, may be impacted by runoff or vibration from construction activities.

Any future development projects implementing proposed Plan would be required to adhere to the regulations and policies discussed in Section 4.5.2 or listed in Table 4.5-5. These regulations and policies require the reduction of erosion and runoff in the areas where unique paleontological resources and unique geologic features are located, and in some cases limit development in those areas as well. In addition, development projects would undergo site-specific CEQA analysis to determine impacts to address this significance criterion as well as hydrologic and geologic hazards, including the potential to cause erosion. During construction activities a SWPPP would be implemented, and erosion would be controlled through BMPs. During operation and maintenance, development projects would have to maintain compliance with the Municipal Permit so that predevelopment hydrology is maintained. This would be accomplished through LIDs and BMPs. For a more comprehensive discussion of these regulations and requirements, see Section 4.10 Hydrology and Water Quality of this EIR. These requirements would help reduce impacts to unique paleontological resources and unique geologic resources through avoidance and implementation of BMPs. However, it cannot be guaranteed that these measures will be properly implemented for all future development projects. Therefore, impacts to unique paleontological resources and unique geologic features are considered significant.

Transportation Network Improvements and Programs

Implementation of the proposed Plan would result in transportation network improvements being constructed within geologic formations of moderate to high paleontological resource potential or areas containing unique geologic features. New roadways and transit facilities can directly and permanently alter unique geologic features, particularly in canyons, coast lines, and mountain passes. New lanes and transit projects require earthwork, and, in areas of high or moderate paleontological resource sensitivity or that contain unique geologic features, impact existing unique geologic features and unique paleontological resources. Project activities such as grading and tunneling near coastal bluffs, such as projects along I-5, or through canyons would cause direct physical destruction of resources. Construction and operation of these transportation network improvements would also produce vibration and contribute to the effects of erosion, which would impact unique paleontological resources and unique geologic features.

Upon implementation of the individual transportation network improvements and programs included as part of the proposed Plan, both unique paleontological resources and unique geologic features would be encountered. As discussed above, existing federal, state, and local laws, regulations, and programs included in Section 4.5.2 would help reduce impacts to unique paleontological resources and unique geologic features, but there is no assurance these measures will be properly implemented for all future projects. Therefore, impacts to unique paleontological resources and unique geologic features are considered significant.

2020 Conclusion

Implementation of the proposed Plan would result in regional growth and land use change as well as transportation network improvements and programs that would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Therefore, this impact (PALEO-1) in the year 2020 is significant.

2035

Regional Growth and Land Use Change

As discussed in the 2020 analysis above, geologic formations with moderate to high paleontological resource potential are present throughout the San Diego region. Excavation and grading activities associated with new development and redevelopment of the projects included in the proposed Plan may result in impacts to unique paleontological resources and unique geologic features. Ground-disturbing activities in high or moderate sensitivity fossil-bearing geologic formations such as those listed in Tables 4.5-2 and 4.5-3 have the potential to damage or destroy unique paleontological resources that may be present below the ground surface. The types of activities that would result in significant impacts to unique paleontological resources and unique geologic features (i.e., excavation and grading) in 2020 would continue to occur into 2035 as development intensities would increase to accommodate the forecasted growth. In addition, with more construction anticipated to occur within previously unearthed areas, or increase the likelihood of impacts from erosion or changes to hydrology, there is an increased potential to physically destroy or alter unique paleontological resources and unique geologic features.

As discussed in the 2020 analysis, existing federal, state, and local laws, regulations, and programs included in Section 4.5.2 would help reduce impacts to unique paleontological resources and unique geologic features, but there is no guarantee that they would be implemented properly for all future projects . Therefore, impacts to unique paleontological resources and unique geologic features are considered significant.

Transportation Network Improvements and Programs

As true in the 2020 analysis, any ground disturbances associated with the construction of transportation network improvements and programs, including Managed Lane construction along I-5 and 1-805 and Trolley line extensions from UTC to Mira Mesa and Phase I of San Ysidro to Kearny Mesa, may impact unique paleontological resources or unique geologic features. Given the magnitude and location of several of the transportation network improvements occurring by 2035, and the number of additional transportation network improvements to be implemented in areas of moderate to high paleontological resource sensitivity over those previously implemented by 2020, additional ground disturbances are anticipated. It is possible that more unique paleontological resources or unique geologic features would be destroyed or altered by runoff or erosion.

As discussed in the 2020 analysis, existing federal, state, and local laws, regulations, and programs included in Section 4.5.2 would help reduce impacts to unique paleontological resources and unique geologic features, but there is no guarantee that they would be implemented properly for all future projects. Therefore, impacts to unique paleontological resources and unique geologic features are considered significant.

2035 Conclusion

Implementation of the proposed Plan would result in regional growth and land use change as well as transportation network improvements and programs that would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Therefore, this impact (PALEO-1) in the year 2035 is significant.

2050

Regional Growth and Land Use Change

As discussed in the 2020 and 2035 analysis above, geologic formations with moderate to high paleontological resource potential are present throughout the San Diego region. As development extends farther east, into currently rural and less developed areas, especially in the unincorporated portion of unincorporated San Diego County, additional excavation and grading activities associated with regional growth and land use change in these areas may result in more impacts to unique paleontological resources and unique geologic features. Ground-disturbing activities in high or moderate sensitivity fossil-bearing geologic formations such as those listed in Tables 4.5-2 and 4.5-3 have the potential to damage or destroy unique paleontological resources that may be present below the ground surface. In addition, with more construction anticipated to occur within previously unearthed areas, coupled with the impacts from erosion or changes to hydrology, there is an increased potential to physically destroy or alter unique geologic features.

As more land is disturbed and altered for new development and redevelopment by 2050, the possibility of impacts to unique paleontological resources and unique geologic features becomes greater. As discussed in the 2020 and 2035 analyses, existing federal, state, and local laws, regulations, and programs included in Section 4.5.2 would help reduce impacts to unique paleontological resources and unique geologic features, but there is no guarantee that they would be implemented properly for all future projects. Therefore, impacts to unique paleontological resources and unique geologic features are considered significant.

Transportation Network Improvements and Programs

As true in the 2020 and 2035 analyses, any ground disturbances associated with the construction of transportation network improvements and programs, including Managed Lane construction along I-5, SR 52, SR 54, I-15, and 1-805 and transit line extensions, may directly or indirectly impact unique paleontological resources or unique geologic features. Widening of highways would require grading and potentially trenching, activities that remove and/or disturb the upper layer of soils in areas with high paleontological resource sensitivity. In addition, the transit extension involving tunneling of the Green Line into downtown San Diego has the potential to result in impacts to unique paleontological resources as the entire downtown planning area is underlain by the San Diego Formation and the Baypoint Formation, both of which have high paleontological resource sensitivity. Given the number of additional transportation network improvements and programs requiring construction over those previously implemented by 2020 and 2035, additional ground disturbances in areas of high paleontological resource sensitivity are anticipated by 2050. It is also possible that more unique geologic features would be directly destroyed or altered by runoff or erosion.

As discussed in the 2020 and 2035 analyses, existing federal, state, and local laws, regulations, and programs included in Section 4.5.2 would help reduce impacts to unique paleontological resources and unique geologic features, but there is no assurance that the laws, regulations, and programs would be implemented properly for all future projects. Therefore, impacts to unique paleontological resources and unique geologic features are considered significant.

2050 Conclusion

Implementation of the proposed Plan would result in regional growth and land use change as well as transportation network improvements and programs that would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Therefore, this impact (PALEO-1) in the year 2050 is significant.

MITIGATION MEASURES

PALEO-1 Paleontological Resources or Unique Geologic Features

2020, 2035, and 2050

PALEO-1A Identify Potential for Unique Paleontological Resources or Unique Geologic Features. During planning, design, and project-level CEQA review of transportation network improvements or development projects, SANDAG shall, and other transportation project sponsors, the County of San Diego, cities, and other local jurisdictions can and should, assess the potential for disturbing unique paleontological resources or affecting unique geological features in the project area. For project sites with a high probability of these resources being present, retain a qualified paleontologist to conduct a field survey and recommend subsequent steps to be taken during project construction to reduce or avoid impacts to these resources as described in PALEO-1B in the report documenting the field survey.

PALEO-1B Avoid or Reduce Impacts to Unique Paleontological Resources or Unique Geologic Features. If it is determined during planning, design, and project-level CEQA review that transportation network improvements or development projects would be located within an area that likely contains unique paleontological resources or unique geologic features (based on results of the work done in Paleo-1A), SANDAG shall, and other transportation project sponsors, the County of San Diego, cities, and other local jurisdictions can and should, avoid or reduce impacts to these resources when feasible. If impacts cannot be avoided, SANDAG shall, and other transportation project sponsors, the County of San Diego, cities, and other local jurisdictions can and should, retain a qualified paleontologist prior to construction to:

- Prepare a paleontological monitoring and mitigation plan, which will outline where monitoring should occur and procedures for discoveries, consistent with applicable regulations and guidelines;
- Establish procedures for monitoring and the possible pre-construction salvage of exposed resources if fossil-bearing rocks or unique geologic features have the potential to be affected;
- Provide pre-construction coordination with contractors;
- Be on-site to observe during grading operations and oversee original cutting in previously undisturbed areas of sensitive geologic formations, halt or redirect construction activities as appropriate to allow recovery of newly discovered fossil remains, recover scientifically valuable specimens or ensure avoidance of the unique paleontological resource or unique geologic feature, and oversee fossil salvage operations and reporting.

SIGNIFICANCE AFTER MITIGATION

2020, 2035, and 2050

Implementation of regional growth and land use change as well as transportation network improvements and programs of the proposed Plan would result in significant impacts to a unique paleontological resource or unique geologic feature in 2020, 2035, and 2050. Implementation of Mitigation Measures PALEO-1A and PALEO-1B would protect these unique resources through the presence of a certified paleontologist and compliance with existing regulations; however, it cannot be guaranteed that these measures will reduce impacts to a less than significant level. Therefore, this impact (PALEO-1) is significant and unavoidable.