

3.4 Cultural Resources

This chapter addresses the potential impacts of the proposed program on cultural resources. Cultural resources include prehistoric and historic sites, structures, districts, places, and landscapes, or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Under the California Environmental Quality Act (CEQA), paleontological resources, although not associated with past human activity, are grouped within cultural resources. For the purposes of this analysis, cultural resources may be categorized into the following groups: archaeological resources, historic resources (including architectural/engineering resources), contemporary Native American resources, human remains, and paleontological resources.

Archaeological resources are places where human activity has measurably altered the earth or left deposits of physical remains. Archaeological resources may be either prehistoric-era (before European contact) or historic-era (after European contact). The majority of such places in California are associated with either Native American or Euro-American occupation of the area. The most frequently encountered prehistoric or historic Native American archaeological sites are village settlements with residential areas and sometimes cemeteries; temporary camps where food and raw materials were collected; smaller, briefly occupied sites where tools were manufactured or repaired; and special-use areas like caves, rock shelters, and rock art sites. Historic-era archaeological sites may include foundations or features such as privies, corrals, and trash dumps.

Historic resources include standing structures, infrastructure, and landscapes of historic or aesthetic significance that are generally 50 years of age or older. In California, historic resources considered for protection tend to focus on architectural sites dating from the Spanish Period (1529–1822) through World War II (WWII) and Post War–era facilities. Some resources, however, may have achieved significance within the past 50 years if they meet the criteria for exceptional significance. Historic resources are often associated with archaeological deposits of the same age.

Contemporary Native American resources, also called ethnographic resources, can include archaeological resources, rock art, and the prominent topographical areas, features, habitats, plants, animals, and minerals that contemporary Native Americans value and consider essential for the preservation of their traditional values. These locations are sometimes hard to define and traditional culture often prohibits Native Americans from sharing these locations with the public.

Paleontology is a branch of geology that studies the life forms of the past, especially prehistoric life forms, through the study of plant and animal fossils. Paleontological resources represent a limited, nonrenewable, and impact-sensitive scientific and educational resource. As defined in this section, paleontological resources are the fossilized remains or traces of multicellular invertebrate and vertebrate animals and multicellular plants, including their imprints from a previous geologic period. Fossil remains such as bones, teeth, shells, and leaves are found in the geologic deposits (rock formations) where they were originally buried. Paleontological resources

include not only the actual fossil remains, but also the collecting localities, and the geologic formations containing those localities.

3.4.1 Environmental Setting

Cultural Resources

Part of the program area is located in the Los Angeles Basin. The basin is formed by the Santa Monica Mountains to the northwest, the San Gabriel Mountains to the north, and the San Bernardino Mountains and San Jacinto Mountains to the east. The basin was formed by alluvial and fluvial deposits derived from these surrounding mountains. Prior to urban development and the channeling of the Los Angeles River, much of the program area was likely covered with marshes, thickets, dense woodland, and grassland. Historically, the Los Angeles River originated from a spring near what is present-day Encino. The river flowed eastward from Encino through the southern portion of the San Fernando Valley near the foot of the Santa Monica Mountains before turning southeast at what is present-day Griffith Park (Gumprecht, 2001). From there, it flowed to the Pacific Ocean along a frequently shifting course, sometimes flowing south to empty into San Pedro Bay near Long Beach, sometimes flowing west to the Santa Monica Bay along the course of what is present-day Ballona Creek. In its natural state, the river's flow meandered dramatically, narrowed and widened intermittently, and even returned underground completely in certain locations. The floodplain forest of the Los Angeles Basin formed one of the most biologically rich habitats in Southern California. Willow, cottonwood, and sycamore and dense underbrush of alder, hackberry, and shrubs once lined the Los Angeles River as it passed near what is present-day downtown Los Angeles (Gumprecht, 2001). Although historically most of the Los Angeles River was dry for at least part of the year, shallow bedrock in the Elysian Park area north of what is present-day downtown forced much of the river's underground water to the surface. This allowed for a steady year-round flow of water through the area that later became known as downtown Los Angeles (Gumprecht, 2001).

Prehistory

The abundant and diverse environmental resources of the coastal Los Angeles basin have attracted human inhabitants from the earliest times. The prehistory of the region has been summarized within four major horizons or cultural periods: Early, Millingstone, Intermediate, and Late Prehistoric (Wallace, 1955).

The Early period covers the interval from the first presence of humans in Southern California until post-glacial times. While people are known to have inhabited Southern California beginning at least 13,000 years Before Present (B.P.) (Arnold et al., 2004), the first evidence of human occupation of the Los Angeles area dates to at least 9,000 B.P. These occupations are associated with a period known as the Millingstone Cultural Horizon (7,000-4,000 B.P) (Wallace, 1955; McIntyre, 1990). Departing from the subsistence strategies of their nomadic big-game hunting predecessors, Millingstone populations established more permanent settlements. Settlements were located primarily on the coast and in the vicinity of estuaries, lagoons, lakes, streams, and marshes where a variety of resources, including seeds, fish, shellfish, small mammals, and birds,

were exploited. Early Millingstone occupations are typically identified by the presence of handstones (manos) and millingstones (metates), while those Millingstone occupations dating later than 5,000 B.P. contain a mortar and pestle complex as well, signifying an increased dependence on new food sources, such as acorns and starchy tubers.

Although many aspects of Millingstone culture persisted, by 3,500 B.P., a number of socioeconomic changes occurred (Wallace, 1955; McIntyre, 1990). These changes are associated with the period known as the Intermediate Horizon (3,500–1,500 B.P.) (Wallace, 1955). Increasing population size necessitated the intensified use of existing terrestrial and marine resources (Erlandson, 1994). This was accomplished in part through use of the circular shell fishhook on the coast and more abundant and diverse hunting equipment. The Intermediate Horizon marks a period in which specialization in labor emerged, trading networks became an increasingly important means by which both utilitarian and non-utilitarian materials were acquired, and travel routes were extended. Archaeological evidence suggests that the margins of rivers, marshes, and swamps within the Los Angeles River drainage, with their rich variety of resources, served as locations of prehistoric settlement and travel during this period. Settlement around the Ballona Lagoon increased significantly during this period (Altschul et al., 2003).

The Late Prehistoric Period, spanning from approximately 1,500 years B.P. to the Spanish mission era, witnessed an increase in terrestrial and sea mammal hunting, along with continued seed collecting (Wallace, 1955). Small projectile points indicate the use of the bow and arrow. Although the location of Late Period villages does not significantly change, the villages become larger in size and fewer in number (McIntyre, 1990). Inter-village and inter-regional trade increased, and there is evidence for the use of shell beads as a form of money in economic exchanges.

Ethnographic Background

Tataviam

The northern part of the program area is located within the territory traditionally occupied by the Tataviam. Tataviam territory was concentrated along the upper reaches of the Santa Clara River drainage between the San Fernando Valley on the south and Pastoria Creek in the Tehachapi Mountains to the north. Their territory also included east Piru Creek and the southern slopes of Sawmill and Liebre Mountains, and also extended into the southern end of the Antelope Valley (King and Blackburn, 1978).

There are few historical sources regarding the Tataviam. The word “Tataviam” most likely came from a Kitanemuk word that may be roughly translated as “people of the south-facing slope,” because of their settlement on south-facing mountain slopes (King and Blackburn, 1978). What the Tataviam called themselves is not known. The Tataviam spoke a language that was part of the Takic branch of the Uto-Aztecan language family (King and Blackburn, 1978). The language was related to that spoken by the Gabrielino-Tongva.

Tataviam villages varied in size from larger centers with as many as 200 people, to smaller villages with only a few families (King and Blackburn, 1978). At the time of Spanish contact, the

Tataviam population is estimated to have been less than 1,000. Primary vegetable food sources included acorns, juniper berries, seeds, and yucca buds. Small game such as antelope and deer supplemented these foods. Trade networks between inland groups such as the Tataviam, the coastal regions, and desert regions enabled the trade of exotic materials such as shell, asphaltum, and steatite.

Gabrielino-Tongva

The southern portion of the program area is located in a region traditionally occupied by the Takic-speaking Gabrielino-Tongva Indians. The term “Gabrielino” is a general term that refers to those Native Americans who were administered by the Spanish at the Mission San Gabriel Arcángel. Many contemporary Gabrielino identify themselves by the name “Tongva.” Prior to European colonization, the Gabrielino-Tongva occupied a diverse area that included: the watersheds of the Los Angeles, San Gabriel, and Santa Ana rivers; the Los Angeles basin; and the islands of San Clemente, San Nicolas, and Santa Catalina (Kroeber, 1925). The Gabrielino language, like the Tataviam language, was part of the Takic branch of the Uto-Aztecan language family.

The Gabrielino-Tongva Indians were hunter-gatherers and lived in permanent communities located near the presence of a stable food supply. Community populations generally ranged from 50 to 100 inhabitants, although larger settlements may have existed. The Gabrielino-Tongva are estimated to have had a population numbering around 5,000 in the precontact period (Kroeber, 1925). Villages are reported to have been the most abundant in the San Fernando Valley, the Glendale Narrows area north of downtown, and around the Los Angeles River drainage (Gumprecht, 2001). Maps produced by early explorers indicate that at least 26 Gabrielino villages were within close proximity to known Los Angeles River courses, while an additional 18 villages were within reasonably close proximity to the river (Gumprecht, 2001).

Subsistence consisted of hunting, fishing, and gathering. Small terrestrial game were hunted with deadfalls, rabbit drives, and by burning undergrowth, while larger game such as deer were hunted using bows and arrows. Fish were taken by hook and line, nets, traps, spears, and poison (Bean and Smith, 1978). The primary plant resources were the acorn, gathered in the fall and processed in mortars and pestles, and various seeds that were harvested in late spring and summer and ground with manos and metates. The seeds included chia and other sages, various grasses, and islay or holly-leafed cherry.

Coming ashore on Santa Catalina Island in October of 1542, Juan Rodriguez Cabrillo was the first European to make contact with the Gabrielino-Tongva; the 1769 expedition of Gaspar de Portolá also passed through Gabrielino-Tongva territory (Bean and Smith, 1978). Native Americans suffered severe depopulation and their traditional culture was radically altered after Spanish contact. Nonetheless, Gabrielino-Tongva descendants still reside in the greater Los Angeles and Orange County areas and maintain an active interest in their heritage.

Historic Setting

Spanish Period (A.D. 1769-1821)

Although Spanish explorers made brief visits to the region in 1542 and 1602, sustained contact with Europeans did not commence until the onset of the Spanish Period. In 1769 Gaspar de Portolá led an expedition from San Diego, passing through Los Angeles Basin, San Fernando Valley, and Santa Clarita Valley on its way to the San Francisco Bay (McCawley, 1996). This was followed in 1776 by the expedition of Father Francisco Garcés (Johnson and Earle, 1990).

In the late 18th century, the Spanish began establishing missions in California and forcibly relocating and converting native peoples. Two missions were located in the vicinity of the program area: Mission San Gabriel Arcángel, founded in 1771, and Mission San Fernando Rey de España, founded in 1797. Gabrielino-Tongva Indians were primarily sent to Mission San Gabriel to be baptized, although some were also baptized at Mission San Fernando. By 1820, most of the Tataviam population had been baptized at Mission San Fernando (California Missions Resource Center, 2012). Disease and hard labor took a toll on the native population in California; by 1900, the Native Californian population had declined by as much as 90 percent (Cook, 1978). In addition, native economies were disrupted, trade routes were interrupted, and native ways of life were significantly altered.

In an effort to promote Spanish settlement of Alta California, Spain granted several large land concessions from 1784 to 1821. At this time, unless certain requirements were met, Spain retained title to the land (State Lands Commission [SLC], 1982). Over 70 Spanish land grants were made within Los Angeles County.

On September 4, 1781, El Pueblo de la Reina de los Angeles was established not far from the site where Portolá and his men camped during their 1769 excursion. The original pueblo consisted of a central square surrounded by 12 houses and a series of agricultural fields (Gumprecht, 2001).

Mexican Period (A.D. 1821-1848)

The Mexican Period began when Mexico won its independence from Spain in 1821. Mexico continued to promote settlement of California with the issuance of land grants. In 1833, Mexico began the process of secularizing the missions, reclaiming the majority of mission lands and redistributing them as land grants. Many ranchos continued to be used for cattle grazing by settlers during the Mexican Period. Hides and tallow from cattle became a major export for Californios (native Hispanic Californians) (Pitt, 1994; Starr, 2007).

After Mexico gained its independence, the city of Los Angeles became the capital of the California territory in 1835. But few visited the area and the town remained a “sleepy agricultural village” until the Gold Rush in 1848 (Gumprecht, 2001).

American Period (A.D. 1848-present)

In 1846, the Mexican-American War broke out. Mexican forces were eventually defeated in 1847 and Mexico ceded California to the United States as part of the Treaty of Guadalupe Hidalgo in 1848. California officially became one of the United States in 1850.

The County of Los Angeles was established on February 18, 1850, as one of the 27 original counties, several months before California was admitted to the Union on September 9, 1850. It derived its name from the community of Los Angeles, which was designated the County seat. Parts of the county's territory were given to San Bernardino County in 1853, to Kern County in 1866 and to Orange County in 1889 (County of Los Angeles, 2014).

When the discovery of gold in Northern California was announced in 1848, a huge influx of people from other parts of North America flooded into California. The increased population provided an additional outlet for California cattle. As demand increased, the price of beef skyrocketed and California reaped the benefits. However, a devastating flood in 1861, followed by droughts in 1862 and 1864, led to a rapid decline of the cattle industry; over 70 percent of cattle perished during these droughts (McWilliams, 1949; Dinkelspiel, 2008). This event, coupled with the burden of proving ownership of their lands, caused many Californians to lose their lands during this period (McWilliams, 1949). Former ranchos were subsequently subdivided and sold for agriculture and residential settlement.

The first transcontinental railroad was completed in 1869, connecting San Francisco with the eastern United States. Newcomers poured into Northern California. Southern California experienced a trickle-down effect, as many of these newcomers made their way south. The Southern Pacific Railroad extended this line from San Francisco to Los Angeles in 1876. The second transcontinental line, the Santa Fe, was completed in 1886 and caused a fare war, driving fares to an unprecedented low. Settlers flooded into the region and the demand for real estate skyrocketed. As real estate prices soared, land that had been farmed for decades outlived its agricultural value and was sold to become residential communities. The subdivision of the large ranchos took place during this time (Meyer, 1981; McWilliams, 1949).

The city of Los Angeles would experience its greatest growth in the 1880s when two more direct rail connections to the East Coast were constructed. The resulting fare wars led to an unprecedented real estate boom. Despite a subsequent collapse of the real estate market, the population of Los Angeles increased 350 percent from 1880 to 1890 (Dinkelspiel, 2008). From 1890 to 1900, the city continued to grow, and many infrastructure projects were completed during this decade (McWilliams, 1949). E.L. Doheny discovered oil in 1892, adding fuel to the flame, and the population doubled by 1900. From 1900 to 1920, Los Angeles became a tourist mecca (McWilliams, 1949). The Los Angeles Aqueduct was constructed and a large portion of the San Fernando Valley annexed to the city during the first decade of the 20th century. From 1920 to 1930, Los Angeles experienced another population explosion, due in part to the automobile and the development of the movie industry. During the first three decades of the 20th century, more than two million people moved to Los Angeles County, transforming it from a largely agricultural region into a major metropolitan area with a population of 2.8 million within the city of Los Angeles and over 7 million within Los Angeles County by 1970 (U.S. Bureau of the Census, 1998; 1995).

Geoarchaeological Review

A project's probability for encountering archaeological resources depends upon three factors: (1) original formation of an archaeological deposit, (2) post-depositional (mainly geomorphic) processes following deposition of archaeological remains, and (3) project-specific ground disturbances. The original formation of an archaeological deposit in any particular place requires a past human presence as well as behaviors that result in material culture residue. The formation of archaeological deposits is conditioned by the dynamic interaction of paleoenvironmental factors (e.g., past climate, availability of water, abundance of subsistence resources) with a culture's economic, technological, social, and other behavioral systems. As Meyer et al. (2010) have pointed out: "Archaeological deposits are not randomly distributed throughout the landscape, but tend to occur in specific geo-environmental settings." While there seems to be no commonly agreed upon set of landform characteristics for predicting locations in which archaeological sites would be expected to form, landform slope and proximity to water have been invoked as useful predictors in central California (Meyer et al., 2010) and may be relevant to the program area. Stated simply, flat landforms near permanent sources of water tend to be strongly associated with archaeological deposits, while sloping landforms that lack water tend not to have archaeological deposits (Meyer et al., 2010).

Original formation of an archaeological deposit is a necessary, but not sufficient, condition to ensure that an archaeological site is still present centuries or millennia later. Post-depositional conditions must be suitable for preserving archaeological deposits for them to be discovered in the future. Geomorphological processes may work to either preserve or protect archaeological deposits, and their effects may vary depending on the specific setting. Landslides, for example, may displace and destroy archaeological sites at the top of a bluff, but may cover and protect sites at the bottom or toe of the bluff. In a similar vein, fluvial processes may erode archaeological sites along river cutbanks, but may deeply bury archaeological sites along the channel's floodplain. Absence of natural depositional forces—at the top a mountain ridgeline, for example—leave cultural materials exposed to the elements increasing their chance of destruction. Bedrock outcroppings, where little to no soil formation typically takes place, may lack sufficient matrix to cover and preserve traces of past human activity. One of the forces most capable of destroying archaeological sites is human activities. Agriculture, development of infrastructure, and urbanization especially can disturb and destroy archaeological sites, particularly surface or shallow sites, over immense areas.

If the various Enhanced Watershed Management Program (EWMP) projects and approaches may be likened to different types of infrastructure development, then their potential effects to archaeological deposits can be understood in terms of human activity impacts. Program actions that would result in large areas of deep ground disturbance would have a greater probability for encountering and impacting buried archaeological deposits than approaches resulting in more limited horizontal and vertical disturbances.

The program area is bounded on the northwest by the Santa Monica Mountains, on the northeast by the San Gabriel Mountains, on the southeast by the Orange County coastal plain, and on the west and southwest by the Pacific Ocean. The program area largely consists of the Los Angeles,

Santa Clara, San Gabriel Rivers, Santa Monica Bay, and the Dominguez Channel Watersheds, and includes the Los Angeles Basin, San Fernando, and Santa Clarita Valleys. Topography varies regionally from sea level at the coast to several thousand feet in the surrounding mountains.

Broadly, erosion of bedrock out of the San Gabriel and Santa Monica Mountains during the Pleistocene and Holocene has resulted in construction of a broad and recent alluvial plain (Los Angeles Basin) between the mountain foothills and the coast. With few exceptions, this plain has been heavily urbanized and modified within the last century. Tectonism and over-steepening has resulted in formation of extensive landslide zones within the mountains and foothills, and many low-lying valleys are filled with colluvium and/or alluvium. Urbanization has occurred within of these valleys, as well as overlooking ridgelines.

The archaeological potential of the program area will be highly variable depending on local conditions. The low-lying alluvial plain and coastlines would be expected to have been preferred areas for past subsistence and occupation, and archaeological sites in these areas may have been subject to substantial burial. However, the extensive urbanization of these areas makes it likely that a high percentage of archaeological sites that once existed have been subject to disturbance or destruction by humans. On the other hand, while foothills and mountains may have been less favored for occupation because of their steeper slopes and more limited access to water, these areas have generally been subject to less development.

Paleontological Resources

The majority of the program area lies within the Los Angeles Basin, which is characterized by relatively flat (slight dip to the south) alluviated areas punctuated by tectonically uplifted highlands that drain into lower-lying areas and eventually the Pacific Ocean. It is these drainages that are, in part, responsible for the thick sequence of terrestrial sedimentary rocks that underlie much of the greater Los Angeles area and the diversity of fossils contained therein. During much of the early geological history of the program area, from the Early Miocene (approximately 23 million years before present) to the Late Pleistocene (approximately 11,000 years before present) sea level was much higher than today, and the much of the area was under water. Thick, richly fossiliferous (fossil-bearing) marine sedimentary sequences underlie much of the area, and where significant uplift has occurred because of tectonic forces, these fossil-rich rocks are exposed at the surface.

The following analysis of paleontological sensitivity within the program boundaries is based on available surficial geological mapping, published and unpublished technical reports, published scientific journals, and the University of California Museum of Paleontology online specimen database. No museum paleontological records searches were enlisted for this analysis. Because of the large geographic area and complex geology represented by the proposed program, surficial geological units and paleontological resources are outlined separately by each of the five watersheds (Santa Clara River, Los Angeles River, San Gabriel River, Santa Monica Bay, and Dominguez Channel), as shown in Figure 1-1. Furthermore, igneous and metamorphic rock units are omitted from this analysis because of they have no potential to yield significant paleontological resources.

Units are assigned a sensitivity rating based on Society for Vertebrate Paleontology (SVP) guidelines. The SVP has outlined criteria for screening the paleontological potential of rock units and has established assessment and mitigation procedures tailored to accommodating such potential. The SVP established four categories of paleontological sensitivity (potential) for rock units: high, undetermined, low, and no potential (SVP, 2010):

- **High Potential.** Rock units (or formations) in which vertebrate or significant invertebrate fossils have been found. These rock units include sedimentary and some volcanic formations that contain significant fossil resources anywhere within their geographic extent and sedimentary deposits formed in a time period or composed of materials suitable for the preservation of fossils. Only invertebrate fossils that provide new information on existing flora or fauna or on the age of a rock unit would be considered significant.
- **Undetermined Potential.** Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.
- **Low Potential.** Rock units that have few, if any, records of vertebrate fossils in institutional collections, or that have been shown in surveys or paleontological literature to be largely absent of fossil resources. Low-potential rocks also include metamorphic and igneous rocks other than some volcanic rocks.
- **No Potential.** Some rock units have no potential to contain significant paleontological resources, for instance high- grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection or impact mitigation measures relative to paleontological resources. Units with no potential are not included in the following discussion.

Table 3.4-1 identifies paleontologically sensitive geologic formations within the region.

**TABLE 3.4-1
PALEONTOLOGICALLY SENSITIVE GEOLOGIC UNITS/FORMATIONS WITHIN THE PROGRAM AREA**

Geologic Unit/Formation	Sensitivity	Watershed
Recent Surficial Sediments (Quaternary alluvium, slopewash)	Low, higher at depth	All
Pleistocene (Older) Alluvium and Quaternary Terrace Deposit	High	All
Pacoima Formation	Undetermined	Los Angeles River
La Habra Formation	High	San Gabriel River
Saugus Formation	High	Santa Clara River and Los Angeles River
San Pedro Sand	High	Los Angeles River and Santa Monica Bay
Inglewood Formation	Undetermined	San Gabriel River
Fernando Formation	High	Santa Clara River and Los Angeles River
Pico Formation	High	Los Angeles River and Santa Monica Bay
Modelo Formation	High	Los Angeles River
The Towsley Formation	High	Santa Clara River and Los Angeles River
Ridge Basin Group	High	Santa Clara River
Sisquoc Formation	High	Santa Clara River and Los Angeles River
Puente Formation	High	San Gabriel River
Late Miocene Unnamed Marine Strata	Undetermined	Los Angeles River and Santa Monica Bay
Castaic Formation	High	Santa Clara River
The Monterey Formation	High	Santa Clara River
Mint Canyon Formation	High	Santa Clara River and Los Angeles River
Topanga Formation	High	Los Angeles River, Santa Monica Bay, and San Gabriel River
Trancas Formation	Undetermined	Santa Monica Bay
Tick Canyon Formation	High	Santa Clara River
Vasquez Formation	Low	Santa Clara River
Sespe-Vaqueros Formations	High	Santa Clara River and Santa Monica Bay
Llajas Formation	High	Los Angeles River and Santa Monica Bay
Eocene Unnamed marine strata	Undetermined	Los Angeles River and Santa Monica Bay
Santa Susana Formation	High	Los Angeles River and Santa Monica Bay
Martinez Formation	High	Los Angeles River
Chico Formation	High	Los Angeles River
Chatsworth Formation	High	Los Angeles River

SOURCES: Dibblee, 1996, 1997a, 1997b, 1997c, 1997d; Dibblee and Ehrenspeck 1989a, 1989b, 1990, 1991a, 1991b, 1991c, 1991d, 1992a, 1992b, 1992c, 1993a, 1993b, 1996a, 1996b, 1998, 1999, 2001a, 2001b; Dibblee et al., 1993, 1999; Dibblee and Minch, 2003, 2007; Durham et al., 1954; Evans and Miller, 1978; Fierstine et al, 2012; Groves 1991a, 1991b; Jennings, 1962; Kellogg, 1925, 1929; Kern, 1973; Koch et al., 1974; Maxson, 1930; Mount, 1971; Parham et al., 2003; Repenning, 1977; Smith et al., 2002; Squires, 1979, 2001; Squires et al., 2006; Stanton, 1960; Whistler, 1967; Yerkes and Campbell, 2005.

3.4.2 Regulatory Setting

Federal, state, and local governments have developed laws and regulations designed to protect significant cultural resources that may be affected by actions that they undertake or regulate. The National Historic Preservation Act (NHPA) and CEQA are the primary federal and state laws governing preservation of historic and archaeological resources of national, regional, state, and local significance. If individual projects entail a federal nexus, such as a federal approval, federal funding, or federal property, federal historic preservation laws such as the NHPA may apply.

Federal

National Historic Preservation Act of 1966

Enacted in 1966, the NHPA declared a national policy of historic preservation and instituted a multifaceted program, administered by the Secretary of the Interior, to encourage the achievement of preservation goals at the federal, state, and local levels. Section 106 of the NHPA states that federal agencies with direct or indirect jurisdiction over federally funded, assisted, or licensed undertakings must take into account the effect of the undertaking on any historic property that is included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) and that the ACHP must be afforded an opportunity to comment. The steps of the Section 106 process are accomplished through consultation with the State Historic Preservation Office, federally recognized Indian tribes, local governments, and other interested parties. The goal of consultation is to identify potentially affected historic properties, assess effects to such properties, and seek ways to avoid, minimize, or mitigate any adverse effects on such properties.

National Register of Historic Places

The NRHP was established by the NHPA of 1966, as “an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation’s historic resources and to indicate what properties should be considered for protection from destruction or impairment” (Code of Federal Regulations 36 Section 60.2). The NRHP recognizes both historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior, 1995):

- A. Are associated with events that have made a significant contribution to the broad patterns of our history.
- B. Are associated with the lives of persons significant in our past.
- C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
- D. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for NRHP listing (U.S. Department of the Interior, 1995).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as “the ability of a property to convey its significance” (U.S. Department of the Interior, 1995). The NRHP recognizes seven qualities that, in various combinations, define integrity: location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

State

California Register of Historical Resources

Under the California Public Resources Code, Section 5024.19(a), the California Register of Historical Resources (CRHR) was created in 1992 and implemented in 1998 as “an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change.” Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historical resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

- **Criterion 1.** It is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- **Criterion 2.** It is associated with the lives of persons important in our past.
- **Criterion 3.** It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
- **Criterion 4.** It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under California Public Resources Code (PRC) 5024.1, Title 14 California Code of Regulations (CCR), Section 4852(c), a cultural resource must retain integrity to be considered eligible for the CRHR. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association.

California Historical Landmarks

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the County Board of Supervisors (or the city or town council in whose jurisdiction it is located); be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of CHL #770. CHLs #770 and above are automatically listed in the CRHR.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

- It is the first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- It is associated with an individual or group having a profound influence on the history of California.
- It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

California Points of Historical Interest

California Points of Historical Interest (PHIs) are sites, buildings, 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 value. PHI designated after December 1997 and recommended by the SHRC are also listed in the CRHR. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a PHI, a resource must meet at least one of the following criteria:

- It is the first, last, only, or most significant of its type within the local geographic region (city or county).
- It is associated with an individual or group having a profound influence on the history of the local area.
- It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine if a project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. The CEQA Guidelines (Title 14 CCR Section 15064.4) recognize that an historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which 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 by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.4 of the CEQA Guidelines apply. If a project may cause a substantial adverse change (defined 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) in the significance of an historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (CEQA Guidelines Sections 15064.4(b)(1), 15064.4(b)(4)).

If an archaeological site does not meet the historical resource criteria contained in the CEQA Guidelines, then the site may be treated in accordance with the provisions of Section 21083, which is a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, for which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required.

The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064.4(c)(4)).

Senate Bill 18

Senate Bill 18 (SB 18), which went into effect January 1, 2005, requires local governments (city and county) to consult with Native American Tribes before making certain planning decisions and to provide notice to tribes at certain key points in the planning process. The intent is to “provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places” (Governor’s Office of Planning and Research [OPR], 2005).

The purpose of involving Tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level, land use designations are made by a local government. The consultation requirements of SB 18 apply to general plan or specific plan processes proposed on or after March 1, 2005.

According to the *Tribal Consultation Guidelines: Supplement to General Plan Guidelines* (OPR, 2005), the following are the contact and notification responsibilities of local governments:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the Native American Heritage Commission [NAHC]) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government’s jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county’s jurisdiction. The referral must allow a 45-day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.

- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

If an individual structural BMP project entailed the adoption or substantial amendment of a general plan or specific plan, the provisions of Senate Bill 18 may apply.

Local County

The Conservation and Open Space Element of the 2008 Los Angeles County General Plan governs the natural and cultural resources of the county. The Los Angeles County General Plan has the following relevant goals and policies related to the protection of cultural and paleontological resources.

Goal C/OS-12: Protected cultural heritage resources.

Policy C/OS 12.1: Support an inter-jurisdictional collaborative system that protects and enhances the County's cultural heritage resources.

Policy C/OS 12.2: Support the preservation and rehabilitation of historic buildings.

Policy C/OS 12.3: Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).

Policy C/OS 12.4: Promote public awareness of the County's cultural heritage resources.

Implementation Action C/OS 12.1 Evaluate the efficacy of the Landmarks Preservation Commission and the designation of historic landmarks within the unincorporated areas of the County.

In addition, the General Plan makes the following recommendation:

If a CEQA analysis determines that a project will impact a cultural resource area (historic, cultural, or paleontological), the following guidelines will apply:

1. A literature search for valid archaeological or paleontological surveys shall be conducted (for each initial study of a public or private project).
2. A study of the project site shall be made by a qualified archaeologist or paleontologist who shall determine the scientific value of finds, if any, and a recommendation as to their preservation or disposition.
3. The County Historical Landmarks Commission must be notified of all cultural, historical, or paleontological findings.
4. All significant impacts to cultural resource sites must be mitigated to the greatest extent feasible, and a reasonable period of time must be allowed to salvage the site.

5. The integrity of significant historical features of the structure and/or site should be maintained to the largest extent possible.
6. The integrity of sightlines to the structure or site should be maintained.
7. Development adjacent to a cultural resource site should consider design guidelines and appropriate building design, setbacks, landscaping, and other factors that will protect the integrity of the cultural resource area.
8. Materials collected during surface surveys or salvage operations should be donated to an appropriate nonprofit institution. In the event the property owner wishes to retain possession of the artifacts found, it is desirable that archaeologists or paleontologist be allowed to study and photograph the artifacts.

City General Plans

The numerous cities encompassed by the EWMP program area all have their own respective city General Plans, some of which may contain policies that address cultural resources. As implementation of the individual structural BMP projects proceed, specific policies and objectives pertaining to cultural resources from applicable city general plans will be identified and evaluated on a project-by-project basis during subsequent CEQA environmental processes.

Paleontological Resources

Federal

A variety of federal statutes specifically address paleontological resources. They are generally applicable to a project if that project includes federally owned or federally managed lands, or involves a federal agency license, permit, approval, or funding. Federal legislative protection for paleontological resources stems from the Antiquities Act of 1906 (PL 59-209; 16 United States Code 431 et. seq.; 34 Stat. 225), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands.

State

Paleontological resources are explicitly afforded protection by CEQA, specifically in Section V(c) of Appendix G, the “Environmental Checklist Form,” which addresses the potential for adverse impacts to “unique paleontological resource[s] or site[s].” PRC Section 5097.5 specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, the California Penal Code Section 622.5 sets the penalties for the damage or removal of paleontological resources.

Professional Standards

The SVP has established standard guidelines for acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, identification, analysis, and curation. Most practicing professional paleontologists in the United States adhere closely to the SVP’s assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most California state regulatory agencies accept the SVP standard guidelines as a measure of professional practice.

3.4.3 Impact Analysis

The proposed program's potential impacts have been assessed using the CEQA Guidelines Appendix G Checklist. The following sections discuss the key issue areas identified in the CEQA Guidelines with respect to the program's potential effect on cultural resources.

Method of Analysis

This impact analysis is a preliminary, program-level assessment of potential impacts on important cultural resources that could occur as a result of implementation of the proposed program. Because this a program-level analysis, impacts on specific cultural resources that could result from individual projects or structural BMPs are not addressed in this document, but may need to be assessed through additional analysis as project implementation actions are developed and further defined.

The impacts and mitigation measures identified in this section address types of activities that could significantly impact cultural resources including archaeological sites, historic buildings and structures, and locations of importance to Native Americans. Proposed program facilities for structural BMPs include aboveground and belowground facilities, construction of which could result in impacts to cultural and paleontological resources. Program implementation actions that include these types of activities would be required to implement the identified mitigation measures in an effort to reduce any impacts to a less-than-significant level.

The identification of specific impacts and mitigation measures that are appropriate for a specific project implementation action will depend on both the nature of the cultural resources that are present and on the nature of the action. In some instances, mitigation measures must be developed in consultation with multiple agencies and other interested parties.

Thresholds of Significance

For the purposes of this Program Environmental Impact Report (PEIR) and consistency with Appendix G of the CEQA Guidelines, applicable local plans, and agency and professional standards, the program would have a significant impact on cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outside of a formal cemetery.

According to CEQA Guidelines (CCR Title 14, 15064.4), 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 (CCR Title 14, 15064.4(b)). The Guidelines further state

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 historic resource would be materially impaired. Actions that would materially impair the significance of a historical resource are any actions that would demolish or adversely alter those physical characteristics of a historical resource that convey its historical significance and qualify it for inclusion in the CRHR or in a local register or survey that meet the requirements of PRC Sections 5020.1(k) and 5024.1(g).

Identified cultural resources that may be impacted by individual structural BMP projects would be evaluated for eligibility for listing on the CRHR or local historic register. Cultural resources that are eligible for the CRHR or local historic register are considered to be significant historic resources. Cultural resources would also be evaluated for their qualification as a unique archaeological resource under CEQA. Cultural resources that are identified within individual structural BMP project areas subject to federal approval, permits, or funding would also be evaluated for eligibility for listing on the NRHP. Cultural resources determined to be eligible for listing on the NRHP are automatically eligible for listing on the CRHR and are considered to be significant cultural resources.

Paleontological resources are also afforded protection by CEQA. Appendix G (Part V) of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources. A project will have a significant impact on the environment if it adversely affects a paleontological resource or site, or a unique geological feature.

Program Impact Discussion

Historical Resources

Impact 3.4-1: The proposed program could cause a substantial adverse change in the significance of an historical resource as defined in §15064.5.

Structural (Regional, Centralized, and Distributed) BMPs

Distributed BMPs are most likely to be implemented in high-density urban, commercial, industrial, and transportation areas where they would either replace or improve upon existing stormwater infrastructure. These types of BMPs are generally “retrofit” type projects that replace existing impervious surfaces with pervious surfaces such as bioinfiltration cells, bioswales, porous pavement, and filter strips that tie into existing stormwater management systems. These projects may also augment the existing stormwater management systems with additional inlet screens, filter media systems, sediment removal systems, and diversions to sanitary sewer lines. Ground disturbance for distributed BMPs is typically less than 1 to 2 acres in extent, but may extend in some limited applications up to 5 acres where space is available. Centralized structural BMPs collect, store, treat, and filter stormwater from multiple parcels and much larger drainage areas. Like centralized BMPs, regional BMPs can be implemented in a broad range of land use types, from high-density urban to open space, and can have multiple benefits (habitat, recreation, aesthetics, etc.). Centralized and regional structural BMPs require greater footprints for construction and implementation.

Built Environment Resources

Any historic built environment resources (including buildings and structures) that are 50 years or older within the program area may be eligible for listing in the CRHR or local register, although such resources have not yet been identified. Historic built environment resources that are found eligible for the CRHR or local register would be considered historical resources under CEQA. A project that causes a substantial adverse change in the significance of a built environment resource that qualifies as an historical resource (i.e., physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings) would result in a significant impact to historical resources.

Implementation of structural BMPs occurring under the proposed program could impact significant historic built environment resources that exist within the program area. Built environment resources can include not only buildings and structures, but also built infrastructure such as concrete channels, dams, sidewalks, and roads. Impacts could include not only physical demolition or alteration of built environment resources, but also changes to the historic setting of a resource, and impacts that may adversely affect that ability of a resource to convey its significance. **Mitigation Measure CUL-1** would reduce impacts to significant historic built resources. However, in some circumstances, documentation of an historical resource, by way of historic narrative, photographs, or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur (CEQA Guidelines § 15126.4(b)(2)). Therefore, implementation of the proposed program may ultimately result in a “substantial adverse change” to historic resources through various development activities for which no possible mitigation may be available to maintain the historic integrity of the affected resource or its surroundings.

Archaeological and Other Cultural Resources

Historical resources can include not only buildings and structures, as discussed above, but also any object, site area, place, record, or manuscript which a lead agency determines to be historically significant, or which is listed in or determined eligible for listing in the CRHR (CEQA Guidelines Section 15064.5(a)).

The program area has a long history of human occupation, dating to at least 9,000 years before the present. The abundant natural resources within the program area, including rivers, creeks, the Pacific Ocean, and the flora and fauna associated with these water features, would have attracted and sustained human settlement. Significant archaeological resources have been recorded throughout the program area, and numerous Native American village sites are known to have existed within the program area (Altschul et al., 2003; Gumprecht, 2001; McCawley, 1996). Archaeological sensitivity varies across the program area based on specific environmental factors, as discussed above, but archaeological resources could potentially be present in any individual structural BMP project area.

Known archaeological resources, as well as unknown and unrecorded archaeological resources that may be unearthed during construction activities associated with implementation of structural BMPs, could be impacted by individual projects. Some of these resources may qualify as

historical resources. Disturbance of previously unknown and unrecorded archaeological resources can occur even in already developed areas, as older buildings are known to have often been built on top of or within archaeological deposits. Although much of the program area is already heavily developed, potentially significant buried archaeological resources could nevertheless still exist within the program area, beneath and between structures and roads. If previously undiscovered artifacts or buried archaeological resources are uncovered during excavation or construction, significant impacts could occur.

Resources of importance to Native American Tribes or other cultural groups that may qualify as historical resources may also be present within individual EWMP areas. These resources may be identified through cultural resources studies and through consultation and coordination with local Native American Tribes or other cultural groups.

Given the above, the proposed program has the potential to adversely affect archaeological resources and other cultural resources that qualify as historical resources. Since the proposed program is at the programmatic level, specific project locations and design elements have yet to be finalized. As such, impacts to specific cultural resources are not addressed here. However, as program implementation actions move forward, individual projects would undergo additional CEQA review prior to construction. The program area should be considered sensitive for archaeological and other cultural resources, which should be taken into consideration during subsequent CEQA review. Any structural BMP that involves grading, trenching, excavation, vegetation removal, or other form of ground disturbance could impact archaeological resources or other cultural resources. Indirect impacts to archaeological resources, as a result of erosion or vandalism resulting from increased access to or visibility of resources, could also occur.

Implementation of **Mitigation Measures CUL-2, CUL-3, and CUL-4** would reduce impacts to archaeological and other cultural resources that qualify as historical resources. However, because the degree of impact and the applicability, feasibility, and success of these measures cannot be accurately predicted for each specific project at this time, the program level impact related to archaeological and cultural resources that qualify as historical resources is considered significant and unavoidable. In some circumstances, documentation and data recovery as mitigation for impacts to an historical resource of an archaeological nature will not mitigate the effects to a point where clearly no significant effect on the environment would occur. Data recovery as mitigation for historical resources that are eligible for the CRHR under Criterion 4, or that derive their significance from their scientific value or data potential, may effectively mitigate impacts to a less than significant level. However, for historical resources that are eligible to the CRHR under Criteria 1, 2, or 3, data recovery may not adequately mitigate impacts to those aspects of the resource that convey its significance and make it eligible for listing in the CRHR.

Impacts to historical resources would remain significant and unavoidable after implementation of Mitigation Measures CUL-1 through CUL-4 at this program-level analysis. It should be noted that not all individual EWMP projects may result in a significant and unavoidable impact with regard to historical resources, as the impacts associated with each individual EWMP project would be dependent on its location; the presence, nature, and significance of any historical

resources within the construction area; and specific impacts to historical resources. It is anticipated that the implementing agencies of the EWMP projects would, through the environmental review process, consider each discretionary EWMP project on a case-by-case basis to ascertain whether an individual project would impact cultural resources. Therefore, the identification of a significant and unavoidable program-level impact in this PEIR does not preclude the finding of future less-than-significant impacts for the individual structural BMP projects occurring in the EWMP areas.

Mitigation Measures:

CUL-1: For individual EWMP projects that could impact buildings or structures (including infrastructure) 45 years old or older, implementing agencies shall ensure that a historic built environment survey is conducted or supervised by a qualified historian or architectural historian meeting the Secretary of the Interior's Professional Qualification Standards for Architectural History. Historic built environment resources shall be evaluated for their eligibility for listing in the CRHR or local register prior to the implementing agency's approval of project plans. If eligible resources that would be considered historical resources under CEQA are identified, demolition or substantial alteration of such resources shall be avoided. If avoidance is determined to be infeasible, the implementing agency shall require the preparation of a treatment plan to include, but not be limited to, photo-documentation and public interpretation of the resource. The plan will be submitted to the implementing agency for review and approval prior to implementation.

CUL-2: Implementing agencies shall ensure that individual EWMP projects that require ground disturbance shall be subject to a Phase I cultural resources inventory on a project-specific basis prior to the implementing agency's approval of project plans. The study shall be conducted or supervised by a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology, and shall be conducted in consultation with the local Native American representatives expressing interest. The cultural resources inventory shall include a cultural resources records search to be conducted at the South Central Coastal Information Center; scoping with the NAHC and with interested Native Americans identified by the NAHC; a pedestrian archaeological survey where deemed appropriate by the qualified archaeologist; and formal recordation of all identified archaeological resources on California Department of Parks and Recreation 523 forms and significance evaluation of such resources presented in a technical report following the guidelines in *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format*, Department of Parks and Recreation, Office of Historic Preservation, State of California, 1990.

If potentially significant archaeological resources are encountered during the survey, the implementing agency shall require that the resources are evaluated by the qualified archaeologist for their eligibility for listing in the CRHR and for significance as a historical resource or unique archaeological resource per CEQA Guidelines Section 15064.5. Recommendations shall be made for treatment of these resources if found to be significant, in consultation with the implementing agency and the appropriate Native American groups

for prehistoric resources. Per CEQA Guidelines Section 15126.4(b)(3), preservation in place shall be the preferred manner of mitigation to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, project reroute or redesign, project cancellation, or identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, which may include data recovery or other appropriate measures, in consultation with the implementing agency, and any local Native American representatives expressing interest in prehistoric or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2.

CUL-3: The implementing agency shall retain archaeological monitors during ground-disturbing activities that have the potential to impact archaeological resources qualifying as historical resources or unique archaeological resources, as determined by a qualified archaeologist in consultation with the implementing agency, and any local Native American representatives expressing interest in the project. Native American monitors shall be retained for projects that have a high potential to impact sensitive Native American resources, as determined by the implementing agency in coordination with the qualified archaeologist.

CUL-4: During project-level construction, should subsurface archaeological resources be discovered, all activity in the vicinity of the find shall stop and a qualified archaeologist shall be contacted to assess the significance of the find according to CEQA Guidelines Section 15064.5. If any find is determined to be significant, the archaeologist shall determine, in consultation with the implementing agency and any local Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. Per CEQA Guidelines Section 15126.4(b)(3), preservation in place shall be the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, project reroute or redesign, project cancellation, or identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with the implementing agency and any local Native American representatives expressing interest in prehistoric or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2.

Significance Determination: Significant and unavoidable The application of these mitigation measures to specific BMP types and categories is identified in Table 3.4-2.)

Non-Structural (Institutional) BMPs

As discussed in Chapter 2.0, *Project Description*, non-structural/institutional BMPs do not include the construction of new facilities, demolition, or any ground disturbance. Consequently, implementation of non-structural BMPs would not impact historical resources.

Mitigation Measures: None required

Significance Determination: No impact

Unique Archaeological Resources

Impact 3.4-2: The program could cause a substantial adverse change in the significance of unique archaeological resources as defined in §15064.5.

Structural (Regional, Centralized, and Distributed) BMPs

As discussed under Impact 3.4-1, the program area should be considered sensitive for archaeological resources. Archaeological sensitivity varies across the program area based on specific environmental factors, as discussed above, but archaeological resources could potentially be present in any individual structural BMP project area. Known archaeological resources, as well as unknown and unrecorded archaeological resources that may be unearthed during construction activities associated with implementation of structural BMPs, could be impacted by individual EWMP projects. Any structural BMP which involves grading, trenching, excavation, vegetation removal, or other form of ground disturbance could impact archaeological resources, some of which may qualify as unique archaeological resources. Implementation of **Mitigation Measures CUL-2, CUL-3, and CUL-4** would require that unique archaeological resources be treated in accordance with the provisions of Section 21083.2, which would reduce impacts to unique archaeological resources to a less-than-significant level.

Mitigation Measures: Implement **Mitigation Measures CUL-2, CUL-3, CUL-4**

Significance Determination: Less than significant (The application of these mitigation measures to specific BMP types and categories is identified in Table 3.4-2.)

Non-Structural (Institutional) BMPs

As discussed in Chapter 2.0, *Project Description*, non-structural/institutional BMPs do not include the construction of new facilities or any ground disturbance. Consequently, implementation of non-structural BMPs would not impact unique archaeological resources.

Mitigation Measures: None required

Significance Determination: No impact

Paleontological Resources

Impact 3.4-3: The program could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Structural (Regional, Centralized, and Distributed) BMPs

As discussed, the program area is underlain by a number of high or undetermined paleontological sensitivity units. These sensitive geological formations/units may contain significant paleontological resources. The Los Angeles County General Plan Conservation Element requires that a paleontologist be retained to mitigate potential impacts to nonrenewable paleontological resources. However, significant paleontological resources can be uncovered even in areas of low sensitivity, and it is possible that ground-disturbing construction activities associated with implementation of the program could result in the inadvertent discovery of paleontological resources, which could be a significant impact. Implementation of **Mitigation Measures CUL-5** and **CUL-6** would reduce these impacts to less-than-significant levels at this program-level of analysis.

Mitigation Measures:

CUL-5: For individual structural BMP projects that require ground disturbance, the implementing agency shall evaluate the sensitivity of the project site for paleontological resources. If deemed necessary, the implementing agency shall retain a qualified paleontologist to evaluate the project and provide recommendations regarding additional work, potentially including testing or construction monitoring.

CUL-6: In the event that paleontological resources are discovered during construction, the implementing agency shall notify a qualified paleontologist. The paleontologist will evaluate the potential resource, assess the significance of the find, and recommend further actions to protect the resource.

Significance Determination: Less than significant (The application of these mitigation measures to specific BMP types and categories is identified in Table 3.4-2.)

Non-Structural (Institutional) BMPs

As discussed in Chapter 2.0, *Project Description*, non-structural/institutional BMPs do not include the construction of new facilities or any ground disturbance. Consequently, implementation of non-structural BMPs would not impact paleontological resources.

Mitigation Measures: None required

Significance Determination: No impact

Human Remains

Impact 3.4-4: The program could disturb any human remains, including those interred outside of a formal cemetery.

Structural (Regional, Centralized, and Distributed) BMPs

Program-level development involving ground disturbance within the program area could impact human remains. In the event that human remains are discovered, including those interred outside of formal cemeteries, the human remains could be inadvertently damaged, which could be a significant impact. Implementation of **Mitigation Measure CUL-7** would reduce impacts to less-than-significant levels at this program-level of analysis.

Mitigation Measures:

CUL-7: The implementing agency shall require that, if human remains are uncovered during project construction, work in the vicinity of the find shall cease and the County Coroner shall be contacted to evaluate the remains, following the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the Coroner will contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641). The NAHC will then designate a Most Likely Descendant of the deceased Native American, who will engage in consultation to determine the disposition of the remains.

Significance Determination: Less than significant (The application of this mitigation measure to specific BMP types and categories is identified in Table 3.4-2.)

Non-Structural (Institutional) BMPs

As discussed in Chapter 2.0, *Project Description*, non-structural/institutional BMPs do not include the construction of new facilities or any ground-disturbance. Consequently, implementation of non-structural BMPs would not impact human remains.

Mitigation Measures: None required

Significance Determination: No impact

Cumulative Impact Discussion

Structural (Regional, Centralized, and Distributed) BMPs

The geographic area of analysis for cultural resources is defined as the jurisdictions within which the proposed program is located. This geographic scope of analysis is appropriate because the archaeological, historical, and paleontological resources within this radius are expected to be similar to those that occur on the individual project sites because of their proximity; similar

environments, landforms, and hydrology would result in similar land-use—and, thus, site types. Similar geology within this vicinity would likely yield fossils of similar sensitivity and quantity. This is a large enough area to encompass any effects of the program on cultural and paleontological resources that may combine with similar effects caused by other projects, and provides a reasonable context wherein cumulative actions could affect cultural and paleontological resources. The program could cause impacts on cultural and paleontological resources during the construction period or as a result of operation and maintenance or closure and decommissioning activities.

Cumulative impacts to cultural resources in the cultural resources geographic scope of analysis could occur if other existing or proposed projects, in conjunction with the proposed program, had or would have impacts on cultural resources that, when considered together, would be significant.

Regional and centralized BMPs will not be well distributed throughout the watershed because of the limited feasible and applicable sites; however, distributed BMPs, which may comprise the majority of the BMPs implemented under the EWMPs, will be better distributed. Therefore, while the distributed BMPs may have limited or no impact on cultural resources on a project-by-project basis, when taken together, they may impact cultural resources on a regional scale.

Los Angeles County contains a significant archaeological and historical record that, in many cases, has not been well documented or recorded. There is the potential for ongoing and future development projects in the vicinity to disturb landscapes that may contain known or unknown historical resources. Thus, potential construction impacts of the implementation of the proposed program, in combination with other projects in the area, could contribute to a cumulatively significant impact on historical resources. Mitigation measures are included in this PEIR to reduce potentially significant program impacts to historical resources during construction. While implementation of **Mitigation Measures CUL-1** through **CUL-4** would reduce impacts to historical resources, implementation of the proposed program may ultimately result in a substantial adverse change to historical resources through various development activities for which no possible mitigation may be available to maintain the historic integrity of the affected resource or its surroundings, and impacts to historical resources would remain significant and unavoidable at a program level. Therefore, the implementation of structural BMPs may contribute to a cumulatively significant environmental impact to historical resources.

Implementation of **Mitigation Measures CUL-2, CUL-3, and CUL-4** would require that unique archaeological resources be treated in accordance with the provisions of CEQA Section 21083.2, which would reduce impacts to unique archaeological resources to a less-than-significant level. Therefore, the program would not contribute to a cumulatively significant environmental impact to unique archaeological resources.

Excavation activities associated with the implementation of individual structural BMPs in conjunction with other projects in the area could contribute to the progressive loss of fossil remains, associated geological and geographic data, and fossil bearing strata, which is a potentially significant impact. However, the proposed program would have a less-than-significant impact to paleontological resources with incorporation of **Mitigation Measure CUL-5** and

CUL-6. Therefore, with the implementation of Mitigation Measures CUL-5 and CUL-6, cumulative impacts to paleontological resources would be less than significant.

Furthermore, implementation of **Mitigation Measure CUL-7** provides a mechanism to reduce impacts to human remains should they be encountered during ground-disturbing activities, and cumulative impacts to human remains would be less than significant.

With implementation of applicable regulatory requirements and **Mitigation Measures CUL-1** through **CUL-7**, the implementation of the proposed program would not have a cumulatively considerable contribution to impacts to unique archaeological resources, paleontological resources, or human remains from decommissioning activities. Implementation of the proposed program may contribute to a cumulatively significant environmental impact to historical resources.

Mitigation Measures: Implement **Mitigation Measures CUL-1** through **CUL-7**

Significance Determination: Significant and unavoidable (The application of these mitigation measures to specific BMP types and categories is identified in Table 3.4-2.)

Non-Structural BMPs

As discussed in Chapter 2.0, *Project Description*, non-structural/institutional BMPs do not include the construction of new facilities or any ground disturbance. Consequently, implementation of non-structural BMPs would not contribute to a cumulatively significant environmental impact to cultural resources.

Mitigation Measures: None required

Significance Determination: No impact

3.4.4 Summary of Impact Assessment

Table 3.4-2 shows a summary of the structural BMPs requiring mitigation.

**TABLE 3.4-2
 SUMMARY OF CULTURAL RESOURCE IMPACTS REQUIRING MITIGATION MEASURES**

Structural BMPs	Thresholds of Significance					
	Built Environment Resources	Archaeological and Other Cultural Resources	Unique Archaeological Resources	Paleontological Resources	Human Remains	Cumulative Impacts
<i>Applicable Mitigation Measures:</i>	CUL-1 through CUL-4	CUL-1 through CUL-4	CUL-2; CUL-3; CUL-4	CUL-5 and CUL-6	CUL-7	CUL-1 through CUL-7
Regional BMPs						
Regional Detention and Infiltration	Yes	Yes	Yes	Yes	Yes	Yes
Regional Capture, Detention and Use	Yes	Yes	Yes	Yes	Yes	Yes
Centralized BMP						
Bioinfiltration	Yes	Yes	Yes	Yes	Yes	Yes
Constructed Wetlands	Yes	Yes	Yes	Yes	Yes	Yes
Treatment/Low-Flow Diversions	Yes	Yes	Yes	Yes	Yes	Yes
Creek, River, Estuary Restoration	Yes	Yes	Yes	Yes	Yes	Yes
Distributed BMPs						
Site-Scale Detention	Yes	Yes	Yes	Yes	Yes	Yes
LID – Infiltration/Filtration BMPs – Porous Pavement, Green Streets, Bioswale/Filter Strips, downspout disconnects	Yes	Yes	Yes	Yes	No	Yes
LID – Green Infrastructure – Capture and Use – Cisterns, Rain Barrels, Green roofs, Planter Boxes ⁽¹⁾	Yes	Yes	Yes	No	No	Yes
Flow-through Treatment BMPs ⁽¹⁾	Yes	Yes	Yes	Yes	No	Yes
Source-Control Treatment BMPs (catch basin inserts/screens, hydrodynamic separators, gross solids removal devices) ⁽¹⁾	Yes	Yes	Yes	No	No	Yes
Low-Flow Diversions	Yes	Yes	Yes	Yes	No	Yes

⁽¹⁾ These type of BMPs are generally built as retrofits to existing MS4 systems and would require in most cases little or no excavation.

NOTE: These conclusions are based on typical location and need for ground disturbance.