4.15 Cultural and Paleontological Resources

4.15.1 Introduction

This section discusses the potential for the various project components of the Monterey Peninsula Water Supply Project (project or proposed project) to affect previously identified and/or accidentally discovered cultural and paleontological resources in the project area. Cultural resources include architectural resources, archaeological resources, and human remains. Paleontological resources include fossilized remains of vertebrate and invertebrate organisms, fossil tracks, and plant fossils.

Based on CEQA Guidelines Section 15064.5(a), historical resources include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant or that is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Generally, a lead agency considers a resource to be "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources (CRHR) (Public Resources Code [PRC] 5024.1).

Under federal regulations, historic properties are defined as any prehistoric or historic-era district, site, building, structure, or object included on, or eligible for inclusion on, the National Register of Historic Places (NRHP) (Title 54 of the Code of Federal Regulations [CFR], Section 300308). Historic properties that meet federal criteria are also considered historical resources under CEQA, in accordance with PRC Section 5024.1(d)(1). Historical resources and historic properties refer to both significant architectural/structural resources and significant archaeological resources.

4.15.1.1 Definitions

Architectural/Structural Resources

Architectural/structural resources are typically elements of the built environment, including but are not limited to buildings, structures, objects, sites, and districts; these resources range from single-family residences, stores, schools, and factories to downtown commercial districts, ranches, military bases, roads, railroads, bridges, tunnels, gardens, and statues. The term "structure" is used to create distinction between infrastructure and facilities, such as roads, railroads, trails, bridges, dams, canals, ditches, and retaining walls, and buildings made for purposes other than human shelter such as barns, sheds, or workshops. A structure that has lost its historical configuration or pattern of organization through deterioration or demolition (e.g., bridge footings, foundations) is usually considered a ruin and categorized as an archaeological site.

Archaeological Resources

An archaeological site is defined as "the location of a significant event, a prehistoric or historic-era occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure" (NPS, 1990). Prehistoric archaeological materials might include obsidian and chert flaked stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools such as hammerstones and pitted stones. Historic-era materials might include stone, concrete, adobe, or wooden footings, foundations, and walls; artifact-filled wells or privies, and sheet refuse; or deposits of metal, glass, and/or ceramic refuse. Faunal and floral remnants can be associated with both prehistoric and historic-era sites. Human remains can be associated with archaeological sites or found in an isolated context.

Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, snails, and marine coral), and fossils of microscopic plants and animals (microfossils). The age and abundance of fossils depend on the location, topographic setting, and particular geologic formation in which they are found. Fossil discoveries not only provide a historical record of past plant and animal life but can assist geologists in dating rock formations. In addition, fossil discoveries can expand our understanding of the time periods and geographic ranges of existing and extinct flora or fauna.

4.15.1.2 Area of Potential Effects

The term Area of Potential Effects (APE) is used in this section to describe the area that could be affected by the proposed project. This analysis relies on the federal definition of APE, which is "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16[b]).

Archaeological/Paleontological APE

The archaeological and paleontological APE (or the *direct* APE) is identical to the lateral extent of the project area boundary (see **Figures 3-3, 3-4,** and **3-6** through **3-10** in Chapter 3, Project Description). Like the project area boundary, the direct APE represents all areas where construction-related ground disturbance could occur, including open excavations, construction work areas, staging areas, and access routes. However, not all portions of the direct APE (or the project area boundary) would necessarily be disturbed. Because the exact location of some of the proposed facilities cannot be confirmed until final design has been completed, the project area boundary and the direct APE provide some flexibility regarding the exact location of the proposed project facilities.

The horizontal direct APE for nonlinear facilities (i.e., the MPWSP Desalination Plant, subsurface slant wells, Terminal Reservoir, ASR Pump Station, ASR-5 and ASR-6 Wells, and Valley Greens Pump Station [both site options]) is based on the anticipated footprint and construction-related disturbance associated with each facility.

Because the precise alignments of the proposed pipelines have not yet been determined (i.e., the pipeline alignments may shift slightly during final design), the width of the direct APE for pipelines proposed in undeveloped areas is 200 feet; for pipelines proposed within existing roadways, the width of the direct APE is equal to the width of the road right-of-way (typically 30 to 100 feet from curb to curb). Pipeline trenches would generally be no more than 6 feet wide, except in areas with sandy soils and where there are no constraints to excavating a wider trench (i.e., known resources, geography, existing utilities, or other facilities that restrict the construction area). In these areas, a trench width of up to 10 or 15 feet could potentially be used to reduce costs related to shoring the trench. For all pipelines, the length of the direct APE is equal to the length of the proposed pipeline.

The depth of the direct APE varies for each of the project components. Pipeline depths would average 8 feet below ground surface with some deeper excavation for trenchless technologies (i.e. jack and bore, horizontal directional drilling, etc.). Excavations would vary in depth depending on constraints and subsurface conditions and could extend up to 20 feet below the surface.

Architectural/Structural APE

The architectural and structural APE (or the *indirect* APE) encompasses the direct APE as well as the area of indirect impact, which for historic architectural resources includes the viewshed or setting visible from a project component as well as the area subject to construction-related vibration.

Construction activities that involve impact tools can produce significant groundborne vibration. The only substantive sources of vibration during project construction would be: (1) the drill rigs used for drilling and development of the subsurface slant wells in the CEMEX active mining area; (2) the drill rigs used for drilling and development of the ASR-5 and ASR-6 Wells at the Fitch Park military housing area; (3) bulldozers used during general construction of facilities such as the MPWSP Desalination Plant; (4) jackhammers used to break up concrete during open-trench construction of pipelines; and (5) vibratory rollers used to repave streets and other previously paved areas after open-trench construction and for newly paved areas at the MPWSP

Desalination Plant, ASR-5 and ASR-6 Wells, Terminal Reservoir/ASR Pump Station, and Valley Greens Pump Station (both site options) sites.

Construction-related vibration—such as that generated by jackhammers, drill rigs, and vibratory rollers—can cause structural damage to historic-era buildings and structures (Wilson, Ihrig & Associates, 2009:40). Historic buildings in the MPWSP project vicinity include primarily older masonry structures in the city of Monterey as well as wood frame buildings and corrugated metal industrial buildings at the CEMEX sand mining facility. This EIR uses a vibration threshold for historic buildings of 0.12 inches per second (in/sec) peak particle velocity (PPV) at a distance of 25 feet (Wilson, Ihrig, & Associates et al., 2012:12). The distances at which vibratory construction equipment that would be used during project construction would generate vibration levels at the 0.12-in/sec PPV damage threshold are presented in **Table 4.15-1**, below. The construction equipment that would have the greatest PPV is a vibratory roller, which has a typical PPV of 0.210 in/sec at 25 feet (New Hampshire, 2012). The Federal Transit Administration (FTA) provides an equation for estimating vibration at different distances based on a reference PPV of 25 feet for various construction equipment. Using the FTA equation, at distances greater than 45 feet the vibration generated by a vibratory roller is lower than the 0.12-in/sec PPV damage threshold. At distances greater than 25 feet, the vibration level generated by a typical drill rig is lower than the 0.12-in/sec PPV damage threshold. Beyond the distance of the damage threshold, no damage to historic buildings or structures is expected.

TABLE 4.15-1
DAMAGE THRESHOLD TO HISTORIC BUILDINGS FROM CONSTRUCTION EQUIPMENT

Equipment Type	Typical PPV at 25 feet	Approx. Distance of Damage Threshold (0.12 PPV in/sec)
Vibratory roller	0.210 in/sec	45 feet
Drill rig	0.12 in/sec	25 feet
Bulldozer	0.089 in/sec	20 feet
Jackhammer	0.035 in/sec	15 feet

SOURCE: Wilson, Ihrig, & Associates et al., 2012

As such, the horizontal extent of the indirect APE is inclusive of any areas that could be subject to significant vibration effects from construction equipment. For project pipelines that are proposed in road ways, the indirect APE encompasses the width of the road right-of-way (typically 50 to 75 feet from curb to curb) as well as buildings and structures within 45 feet of the outside curb. The indirect APEs for the subsurface slant wells and the ASR-5 and ASR-6 Wells encompass a 25-foot radius from the point of insertion (i.e., from the locations where the drill rigs would be operated). For project components located in unpaved areas, the indirect APE is 45 feet from the centerline of the pipeline or a 45-foot buffer from a project component.

With respect to project effects on the viewshed or setting visible from a project component, the majority of the proposed project components would be constructed below ground (i.e., pipelines) and would not affect the viewshed or setting associated of potential historical resources. For

aboveground components, the viewshed and/or setting visible from a project component is included in the indirect APE. Section 4.14, Aesthetic Resources, further addresses the potential aesthetic and visual quality impacts associated with implementation of the proposed project.

4.15.2 Paleontological and Cultural Background

4.15.2.1 Paleontological Setting

Existing conditions in the project area were evaluated based on a review of site-specific geotechnical reports. Paleontological literature from the University of California Museum of Paleontology database was also reviewed. No field surveys for paleontological resources were conducted for the proposed project.

Paleontological Assessment Standards

The Society of Vertebrate Paleontology (SVP) has established guidelines for the identification, assessment, and mitigation of adverse impacts on nonrenewable paleontological resources (SVP, 1995, 1996). Most practicing paleontologists in the United States adhere closely to the SVP's assessment, mitigation, and monitoring requirements as outlined in these guidelines, which were approved through a consensus of professional paleontologists and reflect the currently accepted standard practices. Many federal, state, county, and city agencies have either formally or informally adopted the SVP's standard guidelines for the mitigation of adverse construction-related impacts on paleontological resources. The SVP has helped define the value of paleontological resources and, in particular, indicates the following:

- Vertebrate fossils and fossiliferous (fossil-containing) deposits are considered significant nonrenewable paleontological resources and are afforded protection by federal, state, and local environmental laws and guidelines.
- A paleontological resource is considered to be older than recorded history, or 5,000 years before present, and is not to be confused with an archaeological resource.
- Invertebrate fossils are not significant paleontological resources unless they are present within an assemblage of vertebrate fossils or they provide undiscovered information on the origin and character of the plant species, past climatic conditions, or the age of the rock unit itself.
- A project paleontologist, special interest group, lead agency, or local government can designate certain plant or invertebrate fossils as significant.

In accordance with these principles, the SVP outlined criteria for screening the paleontological potential of rock units and established assessment and mitigation procedures tailored to such potential. **Table 4.15-2** lists the criteria for high-potential, undetermined, and low-potential rock units.

Although not discussed in the SVP standards, certain earth materials and rock units are highly unlikely to contain paleontological resources, such as artificial fills, surface soils, and high-grade metamorphic rocks. While such materials were originally derived from rocks, they have been altered, weathered, or reworked such that the discovery of intact fossils would be rare.

TABLE 4.15-2
CRITERIA FOR DETERMINING PALEONTOLOGICAL POTENTIAL

Paleontological Potential	Description
High	Geologic units from which vertebrate or significant invertebrate or plant fossils have been recovered in the past, or rock formations that would be lithologically and temporally 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. Common examples are: • Most tertiary-age sedimentary rocks, especially fine-grained, low-energy deposits such as shale and mudstone • Pleistocene-age alluvial fans, lake/playa deposits, shallow marine deposits, and marine terraces
Undetermined	Geologic units for which little or no information is available.
Low	Geologic units that are not known to have produced a substantial body of significant paleontological material, as demonstrated by paleontological literature and prior field surveys, and which are poorly represented in institutional collections. Common examples are: • All intrusive igneous rocks (e.g., granites) • Most metamorphic rocks and volcanic rocks (e.g., marble, slate, schist, basalt, etc.) • Sediment deposited within the last 10,000 years (e.g., Holocene alluvium, bay muds/estuarine areas, slope wash, or recent landslide deposits)

SOURCE: SVP, 1995, 1996.

Geologic Setting and Paleontological Potential

Section 4.2, Geology, Soils, and Seismicity describes the geologic units that the proposed project components would be constructed on or within. Using the paleontological potential criteria described above in **Table 4.15-2**, the following geologic units may have the potential for paleontological resources:

- Older Dune Sands (Quaternary)
- Marine Terrace Deposits (Pleistocene)
- Monterey Formation (Tertiary)

It is important to note that most of the proposed project components are on the surface (e.g., the MPWSP Desalination Plant, ASR Pump Station, and Valley Greens Pump Station [both site options]) or within the top 4 to 8 feet of the surface (e.g., pipelines). In addition, most of the pipelines would be placed in the right-of-way of existing roads or railroads. As such, much of the surficial and shallow materials that the proposed project components would be placed on or within are fill materials or previously-disturbed native materials that have a low paleontological potential.

The marine Monterey Formation consists of siliceous and diatomaceous beds, with diatoms and some benthic foramanifera noted in the unit (Clark, 1997). Diatoms are a major group of algae and are among the most common types of phytoplankton. Most diatoms are unicellular, although they can exist as colonies in the shape of filaments or ribbons, fans, zigzags, or stars. Foraminifera are a phylum or class of amoeboid protozoa, characterized by a thin external net for catching food and usually an external shell. Most foraminifera are marine and typically live on or

within the seafloor sediment (benthos), although a few species are floaters. The shells are commonly calcium carbonate or agglutinated sediment particles. They are usually less than 1 millimeter in size, but some are much larger, with the largest species reaching up to 20 centimeters. Diatoms and foraminifera are typically microfossils and are not readily apparent to the unaided eye. The Monterey Formation is an extensive unit and the noted microfossils are common. As shown on **Figure 4.15-1**, two small sections of the Monterey Pipeline and the Main System-Hidden Hills Interconnection Improvements are located in the Monterey Formation. However, these alignments are also within existing road right-of ways where most shallow soils would have been reworked or replaced with imported fill.

The University of California Museum of Paleontology (UCMP) website notes that the Monterey Formation covers an extensive area of the state and in places consists of marine deposits rich in fossils (UCMP, 2013). Fossil finds in the unit include whales and dolphins, as well as the large numbers of finely preserved crabs, along with kelps and other large soft-bodied seaweeds, which are seldom found as fossils elsewhere. A database search of the UCMP website indicated a large number of fossils have been collected from the Monterey Formation in Monterey County, with the majority of the finds consisting of the microfossils discussed above. In addition, the UCMP collection includes near-coastal invertebrate and vertebrate species, primarily fanworms, bivalves (i.e., mollusks, clams, oysters, mussels, and scallops), and one whale specimen from an unidentified Monterey County location. None of the specimens with identified locations are in or near the locations of the proposed project components.

The UCMP database search indicated a few microfossils from the younger geologic units (Older Dune Sands and Terrace Deposits) but none near the locations of the proposed project components.

4.15.2.2 Cultural Setting

This section presents a brief overview of the environmental, geological, ethnographic, and historical background of the project vicinity. The proposed project extends across portions of unincorporated Monterey County and the cities of Marina, Seaside, Sand City, Monterey, and Pacific Grove and encompasses all areas where project components would be located. This section has been partially adapted from Jones and Holson (2009).

Natural Environment

The Monterey Bay area is bounded on the north by the Santa Cruz Mountains and on the south by the Gabilan and Santa Lucia Mountains. There are extensive alluvial plains in the southern half of the area between the coast and the mountains. A great submarine canyon extends from Moss Landing into the Pacific Ocean (Gordon, 1996).

The Monterey Bay area has two seasons—a cooler, wetter winter season and a warmer, drier summer season. Average annual rainfall in this area ranges from 15 to 27 inches, increasing with elevation. This area is temperate, with weather conditions varying from cloudy and rainy to clear and fair.

The Monterey Bay area is home to a vast array of floral and faunal species. Mayer and Laudenslayer (1988) describe the two dominant habitats in the Monterey Bay area as coastal oak woodland and coniferous montane hardwood. Native to coastal oak woodland is the coast live oak tree. During the Mission Period (1769–1834), early settlers in the area affected the integrity of this habitat through the introduction of agriculture and animal husbandry; in addition, the importation of aggressive annual species hindered the development of young oaks. As a result, portions of the woodland have become open woodlands or savannas. Over 60 species of mammals and over 110 species of birds—including California quail, deer, and squirrel—live in the coastal oak woodland habitat. A variety of tree species are found in coniferous montane hardwood habitat, including coast live oak, big-leaf maple, Pacific madrone, tan oak, canyon live oak, Coulter pine, and coastal redwood. Animals found in the coniferous montane hardwood habitat include California quail, plain titmouse, scrub jay, rufous-sided towhee, Bewicks wren, bush tit, and acorn woodpecker, among others.

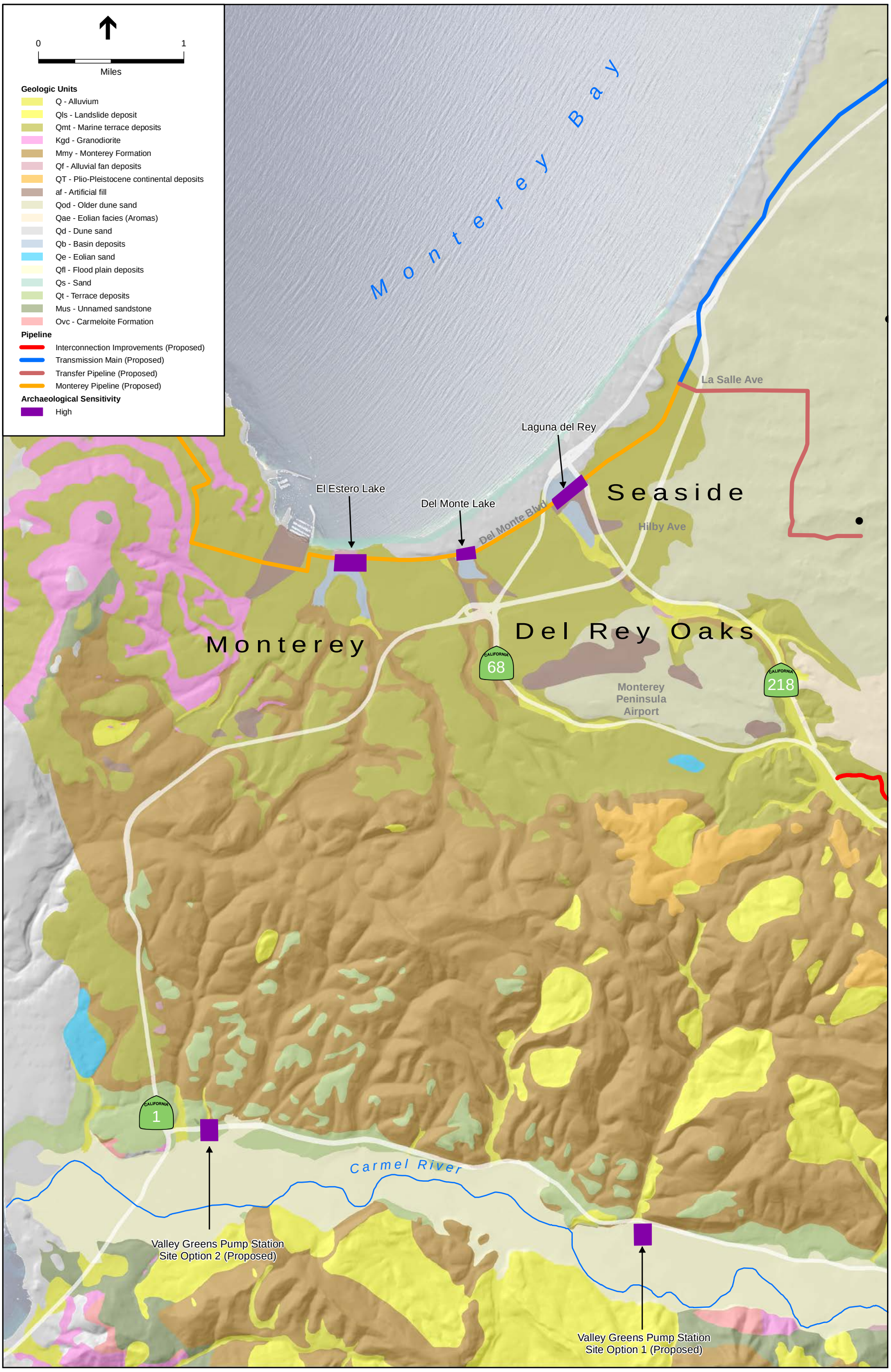
Geological Context

The California coast has undergone dramatic landscape changes since humans began to inhabit the region more than 10,000 years ago. Rising sea levels and increased sedimentation into streams and rivers are among the changes (Helley et al., 1979). In many places, the interface between older land surfaces and Holocene-age landforms are marked by a well-developed buried soil profile, or "paleosol." Paleosols preserve the composition and character of the earth's surface prior to subsequent sediment deposition; thus, paleosols have the potential to preserve archaeological resources if the area was occupied or settled by humans (Meyer and Rosenthal, 2007). Because human populations have grown since the arrival of the area's first inhabitants, younger paleosols (late Holocene) are more likely to yield archaeological resources than older paleosols (early Holocene or Pleistocene).

The direct APE intersects several geologic deposits, including artificial fill, Holocene-age dune sand, Holocene-age alluvial deposits, older Pleistocene-age marine terrace deposits, and bedrock (**Figure 4.15-1**). A geoarchaeological assessment completed for the Transportation Agency for Monterey County's (TAMC) Light Rail Transit Project indicated that portions of the direct APE have a high sensitivity for buried archaeological resources (see **Figure 4.15-1**; Meyer in Ruby, 2010). According to Meyer's assessment, the potential for buried archaeological resources can be determined based on three assumptions:

- Archaeological sites tend to be located near perennial water sources;
- Archaeological deposits from successive time periods are more common because the density of human populations increased over time; and
- The longer a landform remained at the surface, the greater the probability that any one spot on that landform was occupied [Meyer in Ruby, 2010:29].

The Monterey Bay area locations determined to have the highest potential for buried archaeological sites are associated with channels or estuaries (Meyer in Ruby, 2010) that traverse the direct APE. El Estero Lake and Del Monte Lake are in the city of Monterey; Laguna del Rey is in the city of Seaside.



SOURCE: CGS, 2002; Ruby, 2010

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Figure 4.15-1

Geology and Archaeologically Sensitive Areas

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The geoarchaeological assessment for the TAMC Light Rail Transit Project recommended that:

> …the possibility for late archaeological discoveries is specified as part of the construction bid package, and that the construction contract requires the contractor(s) to: (1) inform all field personnel of this possibility; (2) halt excavations immediately within ten meters (approximately 33 feet) of a potential archaeological find; and (3) allow a qualified professional archaeologist to examine and evaluate the find to determine if it warrants further treatment or not [Meyer in Ruby, 2010:43].

The assessment also recommended that:

> …when significant vertical and/or horizontal earth disturbances are planned (in those areas determined to have a high potential for buried archaeological sites), then some limited subsurface exploratory work should be conducted to determine if potentially buried sites may be impacted… Since most of the known buried archaeological deposits in the region occur at depths of 4 meters (approximately 13 feet) or less, use of a backhoe would be the most appropriate method for identifying potentially buried sites in the most sensitive areas of the project area [Meyer in Ruby, 2010:43].

Finally, at a minimum, the assessment recommended that:

> ...a qualified professional archaeologist be retained to actively monitor project-related ground disturbing activities in each of the high sensitivity areas if it is not possible or feasible to conduct exploratory studies prior to construction. The archaeological monitor(s) should be required to be present before and during any substantial earth disturbances (i.e., trenching) in these areas to: (1) help maximize the opportunity for archaeological discovery; (2) insure that potentially important cultural resources are not impacted; (3) conduct "real-time" preliminary assessments of any finds; and (4) facilitate and re-direct on-going construction activities by providing initial recommendations for the appropriate treatment of any finds. The archaeological monitor(s) should be required to keep detailed records that document their daily activities, observations, decisions, and the presence or absence of any archaeological materials [Meyer in Ruby, 2010:43].

Based on the above-described geoarchaeological assessment, there is potential for deeply buried, well-developed soil horizons to be present in the direct APE, and thus potential for archaeological resources associated with those buried soils to be encountered during project work. Those locations include Laguna del Rey in the city of Seaside; El Estero Lake and Del Monte Lake in the city of Monterey; and the Valley Greens Pump Station (both site options) in unincorporated Monterey County (see **Figure 4.15-1**). It is not recommended that additional subsurface investigations be conducted for the proposed project for the following reasons: ground disturbance in the direct APE at locations with a high archaeological sensitivity would be relatively narrow (a maximum of 7 feet wide) and linear (rather than areal); the active coastal dune environment may have destroyed, disturbed, and/or removed archaeological materials; and few deeply buried sites have been previously discovered in the Monterey Bay vicinity.

Prehistoric Context

Archaeologists have developed individual cultural chronological sequences tailored to the archaeology and material culture of each subregion of California. Each of these sequences is based principally on the presence of distinctive cultural traits and stratigraphic separation of

deposits. Jones et al. (2007) provide a framework for the interpretation of the Central Coast and the Monterey Bay Area. The authors divide human history on the Central Coast into six broad periods: the *Paleo-Indian Period* (pre-8000 B.C.), the *Early Archaic Period* (8000 to 3500 B.C.), the *Early Period* (3500 to 600 B.C.), the *Middle Period* (600 B.C. to A.D. 1000), the *Middle/Late Transition Period* (1000 to 1250 A.D.), and the *Late Period* (A.D. 1250–1769). The periods have been largely defined on the basis of distinctive bead types; typological analysis and radiocarbon dating of *Olivella* beads show the bead sequence in the Monterey Bay Area as generally similar to those of the California Central Valley and the Santa Barbara coast. Economic patterns, stylistic aspects, and regional phases further subdivide cultural periods into shorter phases. This scheme uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

Evidence of human habitation during the *Paleo-Indian Period*, characterized by big-game hunters occupying broad geographic areas, has not yet been discovered in the Monterey Bay Area. The oldest known occupation of the Monterey Bay area dates from ca. 5000 B.C., however data representing this earliest occupation is limited. The *Early Archaic Period* is represented by the *Millingstone Culture* (800 to 3500 B.C.) and is marked by large numbers of handstones and/or millingslabs, crude core and cobble-core tools, and less abundant flake tools and large side-notched projectile points. Millingstone components have been identified at locations in Monterey County near Elkhorn Slough and Monterey Peninsula. Faunal remains indicate that Millingstone people exploited shellfish, fish, birds, and mammals, and with a majority of Millingstone sites less than 25 kilometers from the shoreline there appears to have been a focus on shellfish consumption.

The *Early* and *Middle Periods* are represented by the *Hunting Culture* (3500 B.C. to A.D. 1250), which was marked by large quantities of stemmed and notched projectile points. During the *Early Period* (3500 to 600 B.C.), the first cut shell beads and the mortar and pestle are documented in burials, indicating the beginning of a shift from mobility to sedentism. During the *Middle Period*, (600 B.C. to A.D. 1000), geographic mobility may have continued, although groups began to establish longer-term base camps in localities from which a more diverse range of resources could be exploited. The first rich black middens are recorded from this period. The addition of milling tools, obsidian and chert concave-base projectile points, and the occurrence of sites in a wider range of environments suggest that the economic base was more diverse and required logistical hunting techniques. Coastal habitation was still preferred but large Hunting Culture middens have also been identified in inland valleys.

The *Late Period* (A.D. 1250–1769) is distinguished from the Hunting Culture by large amounts of Desert side-notched and Cottonwood arrow points, small bifacial bead drills, bedrock mortars, hopper mortars, distinct *Olivella* bead types, and steatite disk beads. These assemblages represent social complexity developed toward lifeways of large, central villages with resident political leaders and specialized activity sites. This differs dramatically from the Hunting Culture materials and may represent developments associated with population increase, environmental changes, and ethnic migrations.

Ethnographic Setting

Based on a compilation of ethnographic, historic, and archaeological data, Milliken et al. (2009) describes a group known as the Ohlone, who once occupied the general vicinity of the project area. While traditional anthropological literature portrayed the Ohlone peoples as having a static culture, today it is better understood that many variations of culture and ideology existed within and between villages. While these "static" descriptions of separations between native cultures of California make it an easier task for ethnographers to describe past behaviors, this masks Native adaptability and self-identity. California's Native Americans never saw themselves as members of larger "cultural groups," as described by anthropologists. Instead, they saw themselves as members of specific villages, perhaps related to others by marriage or kinship ties, but viewing the village as the primary identifier of their origins.

Levy (1978) describes the language group spoken by the Ohlone, known as "Costanoan." This term is originally derived from a Spanish word designating the coastal peoples of Central California. Today Costanoan is used as a linguistic term that references to a larger language family spoken by distinct sociopolitical groups that spoke at least eight languages (as different as Spanish is from French) of the same Penutian language group. The Ohlone once occupied a large territory from San Francisco Bay in the north to the Big Sur and Salinas Rivers in the south. The proposed project is in the greater Rumsen-speaking tribal area, their territory extended from Point Sur northward to the lower Pajaro River, and included the present-day cities of Monterey, Seaside, Marina, and Carmel. Dialects of the Rumsen language were spoken by four independent local tribes, including *Rumsen* in Monterey, *Ensen* of the Salinas vicinity, *Calenda Ruc* of the central shoreline of Monterey Bay, and *Sargentaruc* of the Big Sur Coast. Five villages were present in their territory at the time of Spanish contact: *Achasta, Tucutnut, Soccorronda, Echilat* and *Ichxenta* (Milliken et al., 2009).

Economically, Ohlone engaged in hunting and gathering. Their territory encompassed both coastal and open valley environments that contained a wide variety of resources, including grass seeds, acorns, bulbs and tubers, bear, deer, elk, antelope, a variety of bird species, and rabbit and other small mammals. The Ohlone acknowledged private ownership of goods and songs, and village ownership of rights to land and/or natural resources; they appear to have aggressively protected their village territories, requiring monetary payment for access rights in the form of clamshell beads, and even shooting trespassers if caught. After European contact, Ohlone society was severely disrupted by missionization, disease, and displacement. Today, the Ohlone still have a strong presence in the Monterey Bay Area, and are highly interested in their historic and prehistoric past.

Historic-Era Background

This brief history of Monterey County was adapted from *Historic Spots in California* (Hoover et al., 2002) and supplemented by Breschini et al. (1983). The following discussion summarizes the major events of the post-contact period in the project vicinity.

Spanish Period

Although the first Spanish incursions into the Monterey area began in the early 17th century (with the 1602 Vizcaino expedition), it was not until over a century later that the Spanish government took an active interest in colonizing the territory then known as Alta California. Captain Gaspar de Portola led a land expedition to Monterey by way of the coast in 1769 (Hoover et al., 2002). The first Spanish exploration of the Salinas Valley followed in 1774, when Don Juan Bautista de Anza's expedition established a route through the valley to Monterey. This route was known as El Camino Real, the Royal Road.

The mission system was an important institution in the colonization process of Alta California, the purpose of which was to Christianize the native people. The methods practiced by the Franciscan friars emphasized Hispanic modes at the expense of the traditional culture. The Spanish established 21 missions along El Camino Real, from San Diego to Sonoma. Life for the new converts ("neophytes") was difficult under the mission system. Converts were given European names and pressured to take up a sedentary way of life. Instead of relying on traditional skills such as fishing and gathering, converts were taught agricultural and pastoral techniques to produce supplies for the mission. Although the neophytes never completely abandoned their traditional lifeways, the social structure was severely disrupted. Many Native Americans died from European diseases to which they had no resistance, as well through abuse, violence, neglect, and military incursions.

Mexican Period

Spanish control of California ended with Mexican independence in 1821. In 1834, the Mexican government secularized the missions, freeing the Native Americans from the control of the missionaries. Returning to their traditional way of life was difficult, however, since land holdings were given to Mexican settlers ("Californios") rather than reverting to original ownership. A few Native Americans were granted land, but records show that, for the most part, the indigenous people quickly lost ownership through land claims disputes and sales. Native people became increasingly marginalized as a result of decreasing population, the stresses of mission life, and the erosion of traditional knowledge. Some Native Americans returned to their villages and resumed their traditional economy, replacing bows and arrows with guns. Others found jobs as vaqueros, or cowboys, on the ranchos operated by Mexican settlers. Census records show the number of Native Americans declined steadily into the 20th century.

In Monterey County, 76 land grants were made to Mexican settlers, more than in any other county (Beck and Haase, 1980). The lands adjacent to the Salinas River were highly valued and accounted for approximately one-half of the total land grants made in Monterey County. Some grantees used their land to establish ranches with enormous, free-ranging herds of horses and Spanish cattle. Cattle powered the Californio economy; cattle hides and tallow were the medium of exchange in business transactions among the Californios and with many trading ships that came from the American east coast.

By 1846, the population of Alta California was comprised of an estimated 8,000 settlers and 10,000 indigenous people (Breschini and Haversat, 1983). This figure represents a drastic decline

in the Native American population from the estimated 133,500 in 1770. During Mexican control of Alta California, several hundred Americans settled; some of the Americans became citizens of Alta California by marrying into Mexican families and received land grants.

American Period

The 1848 Treaty of Guadalupe Hidalgo brought Alta California under the control of the United States. News of the Gold Rush that same year sparked a huge migration into California. With the rapid influx of settlers came legal disputes over the ownership of lands awarded by Spanish or Mexican authorities. The new American government passed the Land Act of 1851, which placed the burden of proof-of-ownership on the grantees; as a result, the few Native Americans who had received grants lost their titles, as did many of the Hispanic owners. By congressional action, grant claims were heard by a board of land commissioners and then appealed in federal courts. The outcome of the litigation was that federal officials ultimately recognized approximately 75 percent of the Mexican land grants; however, the majority of the petitioners had already sold off most of their holdings (Hoover et al., 2002:xvi).

Farming during the American period was characterized by three types of pursuits: cattle and sheep ranching, grain farming, and irrigated agriculture. Cattle and sheep ranching dominated until the 1880s. During this time, free-ranging, comparatively wild Spanish cattle were replaced by American breeds of livestock and dairy cows. Fencing with wooden posts and barbed wire became a prominent feature across the landscape. During the 1880s, Monterey County was California's third-ranking producer of livestock (Hoover et al., 2002). The development of railroads, including the Southern Pacific and regional lines such as the Monterey and Salinas Valley Railroad and the Pajaro Valley Consolidated Railroad, allowed for distribution and improved marketing for the central coast region. By 1901, the coast route was open and running between San Francisco and Los Angeles. Agriculture became more intensive as farming shifted to wheat and barley cultivation. Early crops included sugar beets and alfalfa. The present-day Armstrong Ranch typifies commercial and agricultural development in Monterey County and along the central coast.

Regional History

Monterey. Captain Gaspar de Portolá was sent to Monterey with the objective of establishing Spain's first military base in Alta California (Hoover et al., 2002). After failing to find Monterey Bay on his first land expedition along the coast in 1769, he again set out with his party early the following year. He reached Monterey on May 24, 1770 and was followed by a support vessel carrying Father Junipero Serra and Captain Juan Pérez. On May 31, 1770, they landed at the foot of Artillery Street, in the same spot that Vizcaino had landed in 1602.

Father Junipero Serra founded a mission at the Presidio, which he moved to the Carmel Valley in 1771. Named Mission San Carlos Borroméo, the mission is located at the mouth of the Carmel River in present-day Carmel. Dedicated in 1797, it became the home of Father Serra in his later years. In Monterey, the Presidio and surrounding area became the focal point for military and commercial life in the Monterey Bay area. By 1796, a battery had been constructed consisting of fortifications known as "El Castillo" (Jackson et al., 1985). This site was equipped with several

cannons and provided a defense for the bay, town of Monterey, and the Presidio. Both resources are listed in the NRHP. El Castillo is individually listed in the NRHP, and the Presidio is part of an NRHP District.

Monterey was retained as the capital of Alta California following Mexican Independence in 1821, at which time the Port of Monterey was opened for trade. Settlement before Mexican Independence had been concentrated inside the walls of the Presidio. Following Independence and the opening of the port, settlement began to expand into what is now Old Monterey. It was at this time, in the 1830s, that Jose Rafael Papias Estrada constructed the Estrada Adobe. Estrada was the half-brother of Juan Alvarado, who was the Governor of California and the nephew of General Mariano Vallejo (Hoover et al., 2002). Portions of the adobe have since been destroyed, but the Casa Soberanes—thought to have been a part of the adobe (Breschini and Haversat, 1983)—still stands at the corner of Pacific and Scott Streets and is used as part of the California State Parks interpretive program for the city of Monterey. Several other Mexican-era adobes are still present and part of the Monterey Old Town Historic District, which is a designated National Historic Landmark District and listed in the California Inventory of Historical Resources and the NRHP. The Monterey Old Town Historic District is a two-part, noncontiguous area in downtown Monterey that contains many of the historic buildings and adobes of Spanish and Mexican California. It was designated a Landmark District in 1970 due to its ability to convey the Spanish Colonial character of Monterey and California.

During the American Period, Monterey retained its regional importance. It was incorporated as a city in 1850 and remained a vital port. The first American Federal Courthouse in Monterey was located in the Gabriel de la Torre Adobe at 599 Polk Street. At the turn of the century, many Sicilian fishermen settled in Monterey and Cannery Row as the fishing industry, which focused primarily on sardines, became established in Monterey. The Italian character of Monterey endured until the 1950s when the sardine fisheries that supported Cannery Row collapsed. Cannery Row is currently maintained as a Monterey tourist attraction and community, and its family ties to Sicily remain strong.

Armstrong Ranch (previously Bardin Ranch). Armstrong Ranch in Monterey County is a 2,260-acre tract purchased by John G. Armstrong from James Bardin and the Bardin family in 1885. Armstrong Ranch is located in the northern portion of the proposed project.

James Bardin, born in North Carolina in 1810, moved to northern California in 1855. After purchasing 1,220 acres of the *Rancho Rincon de las Salinas* from Rafael Estrada, Bardin and his family settled in the Salinas Valley. Bardin and his sons acquired large tracts of land around the town of Blanco. Grain from the Bardin Ranch was transported to market on the Monterey and Salinas Valley Railroad. A station on the Monterey and Salinas Valley Railroad Company's narrow gauge line, located on the Bardin Ranch between Castroville Crossing and Salt Lagoon, was named Bardin after the family. Another narrow gauge line operated by the Pajaro Valley Consolidated Railroad had two stations, "with a siding for loading sugar beets," named for two members of Bardin family. The C. Bardin stop was located 7.5 miles from Spreckels, and

19.7 miles from Watsonville, and the H. Bardin stop was 6.2 miles from Spreckels and 21 miles from Watsonville (Clark, 1991:27).

Armstrong came to San Francisco in 1868 and later settled in Monterey County. In 1885, Armstrong purchased 1,372.5 acres of land west of the Monterey and Salinas Railroad grade from James Bardin of the Bardin Ranch. Armstrong purchased three additional parcels from the Bardin family, totaling 2,800 acres. Armstrong sold approximately 400 acres of land to the San Francisco Sand Company in 1906. In 1973, the California Department of Transportation (Caltrans) condemned a linear tract of land passing through the Armstrong Ranch for use as a state highway. Construction of Highway 1 across the Armstrong Ranch began in 1974 (Clark, 1991:19).

Regional Railroads

Southern Pacific Railroad and the Del Monte Express. In 1865, a group of San Francisco businessmen formed Southern Pacific Railroad to construct a railroad from San Francisco to San Diego. In 1868, the Big Four of the Central Pacific Railroad bought Southern Pacific and merged its operations with those of Central Pacific. Southern Pacific, following its original mission, completed construction of the Tehachapi Loop in 1876 and began rail service to southern California. From Los Angeles, Southern Pacific headed east across Arizona to Texas to complete a second transcontinental railroad line in 1881. In 1885, Southern Pacific and Central Pacific were combined under a holding company named the Southern Pacific Company, and Southern Pacific took over all of the Central Pacific operations. By ca. 1904, Southern Pacific had become a major railroad company with a system that covered the western United States from Los Angeles to Portland, Oregon and east to Arizona, Utah, and Texas. In 1988, Rio Grande Industries, which managed the Denver and Rio Grande Railroad, bought Southern Pacific, but kept the name for its brand recognition with the public. In 1996, Union Pacific Railroad bought Southern Pacific, which had suffered years of financial problems (Union Pacific, 2015).

During the early 1870s, the Southern Pacific Railroad Company expanded its line down the Salinas Valley, stopping in Soledad. The line was used both as a freight line for farmers to ship produce north to the San Francisco region and as a passenger line for travelers heading to southern Monterey County destinations. From Soledad, southbound travelers could transfer to the Coast Line Stage Company stage routes (Ryan and Breschini, 2000). After buying up the narrow-gauge Monterey and Salinas Valley Railroad (see below) in 1879, Southern Pacific regraded the railroad route to Monterey as a standard-gauge line in 1880 and gained control of rail traffic in the Monterey area.

In coordination with the acquisition of the rail line to Monterey, the Pacific Improvement Company (PIC), the holding company for the owners of the Southern Pacific Railroad—Charles Crocker, Collis P. Huntington, Mark Hopkins, and Leland Stanford—built the Del Monte Hotel in Monterey. The palatial resort hotel was an attempt to attract a passenger trade for the railroad. Designed to be a luxury hotel with extensive park-like grounds, the hotel had an Arizona garden, a hedge maze, a nearby bathing complex, a race course, and its own matching railroad station. The original Del Monte Hotel burned in 1887 and was immediately replaced with a second hotel, which burned in 1924 (Cain, 2005). When the Del Monte Hotel began losing money in the 1910s,

the PIC hired Samuel F.B. Morse to run the hotel in hopes it would turn a profit (Cain, 2005:94). In 1919, Morse bought the hotel from the PIC to form the Del Monte Properties Company (Cain, 2005:98). A third replacement hotel built ca. 1924–1926 in the Spanish Colonial style included a new matching Spanish-style railroad station to replace the previous Victorian-style station (Cain, 2005:114). In 1943, during World War II, the U.S. Navy leased the Del Monte Hotel for a preflight training school and, after the war, bought it from the Del Monte Properties Company. In 1951, the Navy located its postgraduate school at the Del Monte Hotel (Hoffmann, 2001b:5).

When the Del Monte Hotel was opened in 1880, Southern Pacific began daily railroad service from San Francisco to the Monterey called the "Monterey Express." After the reopening of the second Del Monte Hotel, the rail service was renamed the "Del Monte Express" in 1889 (Hoffmann, 2001a:4). Early Del Monte Express trains included a club car and a parlor-lounge-observation car, and catered to the tourist trade (Hoffmann, 2001a:5).

In 1888, Southern Pacific made plans to extend the rail service through Monterey to Pacific Grove and then on to the Carmel River (Oehlert, 1978:41). The railroad construction began in 1889, passed the Monterey Custom's House and ended in Pacific Grove near Lake Mejela (Oehlert, 1978:42–43). The route to the Carmel River was never completed.

The Del Monte Express service was powered by steam engines until 1955, when diesel engines replaced them (Hoffmann, 2001b:4). Other changes occurred in the mid-twentieth century that had an effect on the railroad. From World War II on, after the Del Monte Hotel became a Naval school, the number of tourist passengers using the Del Monte Express dropped (Hoffmann, 2001b:5). The advent of the automobile also had its effect on rail service. By 1957, rail service to Pacific Grove was cut back and the route ended at Monterey. In 1959, the U. S. Postal Service cancelled its San Francisco to Pacific Grove route, which used the train, and Southern Pacific started petitioning the California Public Utilities Commission to discontinue the Del Monte Express (Hoffmann, 2001b:6). In 1971, 82 years after it was started, the Del Monte Express service was terminated (Hoffmann, 2001b:6).

Monterey and Salinas Valley Railroad. In response to skyrocketing freight rates charged by the Southern Pacific Railroad, a group of Salinas Valley citizens began calling for an independently owned and operated railroad. Several prominent Monterey County businessmen formed the Monterey and Salinas Valley Railroad and filed articles of incorporation in February 1874 in the Monterey County Court House. Construction of the 18.5-mile narrow-gauge railroad began in April 1874 (Clark, 1991:322). The railroad began in Monterey near Adam Street and extended north beyond Marina, turning northeast across the valley to the Salinas River and finally heading southeast toward Salinas. The Monterey and Salinas Valley Railroad was the first narrow-gauge railroad in California and was designed to carry freight and passengers. As noted by Fabing and Hamman (1985), the Monterey and Salinas Valley Railroad completed its first round-trip in October 1874, bringing "...beans and barley from the J. Bardin Ranch."

As a result of financial losses, the Monterey and Salinas Valley Railroad was forced into bankruptcy not long after it began operation. The Southern Pacific Railroad purchased the Monterey and Salinas Valley Railroad in August 1879 at a foreclosure sale. The Southern Pacific

Railroad replaced the narrow-gauge tracks from Castroville to Monterey with a new standard gauge line. The narrow-gauge line from Salinas to Marina (crossing the Bardin Ranch) was abandoned. Southern Pacific sold the Monterey and Salinas Valley Railroad locomotives, track, and equipment to the Nevada Central Railway.

Sand Mining

Beginning almost immediately after construction of the railroad and expanding following the 1906 earthquake in San Francisco, a sand mining industry developed along Monterey Peninsula's shore. Companies used sand from the coastal dunes that line Monterey Bay to produce both glass and building materials. Sand from Monterey's coastline was hauled by railroad and used in the rebuilding of San Francisco, as well as in the growing cities and towns across the state. The San Francisco Sand Company opened the CEMEX sand mining facility (also referred to herein as the Lapis Sand Mining Plant) north of Marina in 1906 and constructed a small spur from the main line that extended west to the dunes. At the industry's height, between 300,000 and 400,000 cubic yards of sand were removed annually from the region (Herbert et al., 2010:18). The CEMEX sand mining facility is the only remaining sand mining facility in operation in Monterey Bay and represents one of the earliest and largest sand mining operations in southern Monterey Bay. The property consists of a variety of industrial, commercial, and residential resources that characterize the establishment and growth of both the facility and the sand mining industry in California as a whole (SWCA, 2014).

4.15.3 Existing Site Conditions

4.15.3.1 Study Methods

Background Research

For this analysis, a records search was conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System at Sonoma State University on June 18, 2010 (File No. 09-1597) and updated February 28, 2013 (File No. 12-0934). The purpose of the records search was to: (1) determine whether known cultural resources have been recorded within the direct and indirect APE; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby resources; and (3) develop a context for the identification and preliminary evaluation of cultural resources. The records search consisted of an examination of the following documents:

- **NWIC base maps** (U.S. Geological Survey [USGS] Monterey, Seaside, and Marina, California 7.5-minute topographic maps) to identify recorded archaeological sites and studies within a 1/2-mile radius of the proposed project.

- **NWIC base maps** (USGS Monterey, Seaside, and Marina, California 7.5-minute topographic maps) to identify recorded architectural/structural resources and studies conducted within or immediately adjacent to the proposed project.

- **Resource Inventories:** California Department of Parks and Recreation (1976), *California Inventory of Historical Resources.* California Department of Parks and Recreation,

Sacramento; California Office of Historic Preservation (2010), *Historic Properties Directory Listing for Monterey County* (through April 2012); California Department of Transportation (Caltrans), *Historic Bridge Inventory, District 4, Monterey County*, Updated 2010.

- **Prehistoric Archaeology:** Jones, Terry, L., Nathan E. Stevens, Deborah A. Jones, Richard T. Fitzgerald, and Mark G. Hylkema, (2007), The Central Coast: A Midlatitude Milieu. In *California Prehistory: Colonization, Culture, and Complexity*. Jones, Terry L., Klar, Kathryn A., eds., Altamira Press, MD.

- **Ethnographic Sources:** Levy, Richard (1978), Costanoan. In *California, Handbook of North American Indians, Vol. 8*, edited by Robert F. Heizer, pp. 485–495; William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.; L. Kroeber (1925) *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Smithsonian Institution, Washington, D.C.

- **Historical Background Sources:** Gudde, Erwin G. (1988), *California Place Names: The Origin and Etymology of Current Geographical Names.* Berkeley: University of California Press; Hoover, M.B., H.E. Rensch, E.G. Rensch, W.N. Abeloe (2002), *Historic Spots in California.* Revised by Douglas E. Kyle. Palo Alto, CA: Stanford University Press.

- **Historical Maps:** An extensive online historical map collection with approximately 50 maps and views of the Monterey Bay area is available online at http://davidrumsey.com.

Native American Contact

The Native American Heritage Commission was contacted on October 19, 2010 to request a database search for sacred lands or other cultural properties of significance within or adjacent to the proposed project. A response was received on October 27, 2010. The sacred lands file did not contain any information on the presence of cultural resources in the vicinity of the proposed project. The Commission provided a list of Native American contacts that might have further knowledge of cultural resources in the vicinity of the proposed project. An introductory letter regarding the proposed project was sent to each contact on November 15, 2010. Native American consultation will be ongoing during the Section 106 process for National Historic Preservation Act compliance.

Survey Methods and Conditions

Portions of the proposed project that had not been recently surveyed according to current standards were intensively surveyed on October 26 and 27, 2010; November 29 and 30, 2010; September 20, 2012; March 8, 2013; June 7, 2013; and April 24, 2014. Aerial photographs of the proposed project vicinity and copies of USGS 7.5-minute topographic maps showing previously recorded cultural resources were used in the field to guide the survey effort. The survey corridor varied depending on location and project component. In narrow survey areas, transects were spaced approximately 5 to 10 meters apart. In wider survey areas, such as the desalination plant direct APE and the subsurface slant wells direct APE, survey transects were spaced approximately 10 to 20 meters apart.

Paved or built-up portions of the proposed project, especially city streets in Monterey, Seaside, and Marina, were subject to a cursory survey that included driving the project route to identify historic-era buildings or other structures located within the indirect APE. Photographs were taken to document the typical styles of each neighborhood or block. Areas of exposed ground surface, including adjacent landscaping, were periodically checked, especially in the direct APE nearest to areas containing previously recorded cultural resources.

For the 2010 survey effort, permission was obtained to access the Armstrong Ranch property, the Monterey Regional Wastewater Treatment Plant, and in the vicinity of the proposed subsurface slant wells. Access to the Terminal Reservoir/ASR Pump Station location on the former Fort Ord military base was restricted due to current cleanup efforts and safety issues. Arcadis (an environmental services company) retains control of the munitions remediation and response areas—which include the Terminal Reservoir/ASR Pump Station—until such time that regulatory site closure is achieved and the land is formally transferred to the City of Seaside (scheduled for 2014). However, as discussed below in Section 4.15.3.2, Previous Studies, the Terminal Reservoir/ASR Pump Station has been previously investigated as part of several former Fort Ord military base archaeological sensitivity studies, and the analysis in this EIR partially relies on information obtained during these surveys. Additionally, URS surveyed the Terminal Reservoir APE on September 11, 2014 (Rehor, 2014).

Two previously developed Programmatic Agreements identified procedures for managing cultural resources in the project vicinity. A March 1993 Programmatic Agreement between the U.S. Army, the ACHP, and the SHPO addresses historic properties and accidental discovery procedures for the Presidio of Monterey Historic District. An April 1994 Programmatic Agreement between the U.S. Army, the ACHP, and the SHPO established that the Phase I Archaeological Survey for prehistoric sites identified no historic properties within the contiguous boundaries of the former Fort Ord military base. The Fort Ord Programmatic Agreement also summarized accidental discovery and monitoring requirements for continued environmental cleanup activities within the former Fort Ord military base property (Reese, 2004).

During the surface surveys, all exposed ground surface was checked for evidence of cultural materials or other evidence of past human use and occupation. Surface visibility was highly variable throughout the APE. Rodent burrow back dirt piles, cut banks, and exposed sand dune areas were closely inspected for indicators of archaeological deposits. Encountered cultural resources were formally recorded on the appropriate Department of Parks and Recreation 523 forms. All resources were photographed and plotted on a USGS 7.5-minute topographic quadrangle.

The proposed project is located in several diverse settings, including active and stable dune formations, paved city streets, and the Carmel Valley. Direct APE locations nearest to previously recorded resources, including landscaped areas or other areas of exposed soils, were thoroughly inspected.

- The direct APE for the subsurface slant wells is located on the west side of active coastal dunes. Visibility was good (approximately 90 percent). The entire area within the direct

APE has been highly disturbed from the activities at the CEMEX sand mining facility. The contributing resources to the Lapis Sand Mining Plant Historic District were noted during the survey, including the Lapis Siding located within the direct APE.

- The MPWSP Desalination Plant direct APE was covered in low-lying grasses. The soil was a light brown sandy loam, and visibility was moderate (approximately 50 percent).

- City streets in Marina, Seaside, Sand City, Monterey, and Pacific Grove as well as along the Highway 68 satellite systems were paved, offering limited visibility. Unpaved areas adjacent to roadways were inspected, but natural vegetation and landscaping obscured the ground surface.

- The newly-constructed General Jim Moore Boulevard had good visibility (approximately 70 percent) along the roadway shoulders.

- Certain areas of the Terminal Reservoir APE had prior ground disturbance (roads, staging areas, maneuver training areas, etc.), less vegetation, and increased ground visibility. Survey transects were spaced approximately 5 to 10 meters apart. The vegetation consisted of low-lying grasses, coastal scrub and brush. Ground visibility in these areas was increased by intermittently scraping away the vegetation.

- Site Option 1 for the Valley Greens Pump Station is primarily paved and/or landscaped. Ground visibility ranged from 0 to 50 percent. About 40 percent of the project area is paved with decaying asphalt. Dense vegetation limited ground visibility in other areas. Numerous spoils piles from burrowing animals were present and inspected for presence of archaeological materials. Soil type observed is medium brown-gray sandy silt with small pebbles (<0.5 centimeters).

- Site Option 2 for the Valley Greens Pump Station is located on the south side of Carmel Valley Road near Carmel Rancho Boulevard, in the northeast corner of the Carmel Rancho Shopping Center. This location has been disturbed from grading of the adjacent parking area and the existing pump station. No native soils were observed.

4.15.3.2 Records Search Results

Records on file at the NWIC indicate that 36 archaeological resources and 16 architectural/ structural resources have been previously recorded within the records search radius, as defined in Section 4.15.3.1 Study Methods. The southwestern portion of the records search radius is located within an area rich in both prehistoric and historic-era resources, including the Monterey Old Town Historic District, the historic Presidio of Monterey, and the NRHP-listed El Castillo (a large prehistoric habilitation site). The recently-evaluated Lapis Sand Mining Plant Historic District in the vicinity of the proposed Source Water Pipeline has been determined eligible for listing in the NRHP and the CRHR (SCWA, 2014) (see the discussion under the heading, MPWSP Test Slant Well, below, for additional discussion).

Previous Studies

Dozens of cultural resources investigations have been completed in the project vicinity, primarily in the city of Monterey. Numerous shell middens as well as the Spanish- and Mexican-period occupations have been the focus of several studies and investigations. Several studies completed

for linear projects (including the installation of fiber-optic cable, water lines, and the railroad) have evaluated cultural resources in the northern part of the proposed project. The closure of Fort Ord resulted in several studies that included cultural resources surface surveys, archaeological and architectural evaluations, and an archaeological sensitivity study.

Portions of the project area were surveyed within the past decade for other projects using current standards and reporting methods. These projects are described below. Those areas previously surveyed within the past 5 years were not resurveyed for the proposed project.

CalAm Coastal Water Project

In 2009, Jones and Holson from Pacific Legacy, Inc. completed a cultural resources investigation for the Coastal Water Project (CWP) Environmental Impact Report (SCH No. 2006101004) (CPUC, 2009), which evaluated three project alternatives at a project-level of detail: the Regional Project, the Moss Landing Project, and the North Marina Project. The proposed project that is evaluated in the MPWSP EIR is a modified version of the North Marina Project, and as a result there is substantial overlap between the MPWSP and the CWP (Jones and Holson, 2009). Busby (2005) also completed a cultural resources assessment for the CWP.

Busby (2005) and Jones and Holson (2009) reviewed the archival records and previous studies completed within the CWP area and summarized those inventory efforts. They also completed a surface survey in select locations of the CWP area that had not been recently surveyed by a qualified archaeologist. Field personnel completed the pedestrian survey by walking systematic transects spaced no more than 15 meters (50 feet) apart. In areas of poor surface visibility, field personnel thoroughly inspected animal burrows, road grading, cutbanks, pavement cracks, and drainage banks and intensively checked all rock outcrops and flat areas for the presence of cultural resources.

The facilities that were included in the CWP that are also included in the MPWSP include the Transmission Main and the segment of the Monterey Pipeline from Seaside to Pacific Grove.

Following the cultural resources assessment for the CWP, the proposed pipeline alignment was revised to avoid cultural resources in the vicinity of the Presidio of Monterey. Three recorded historic-era resources are within or adjacent to the direct APE, including the Monterey Branch Line of the Southern Pacific Railroad (P-27-002923), the Del Monte Hotel Depot foundation (P-27-002940), and the historic-era fence near the Armstrong Ranch (P-27-002416). The previously recorded foundation remains of the Estrada Adobe (P-27-001830) were not relocated and were determined to have been destroyed during hotel construction (Jones and Holson, 2009). Dark soils and non-*in situ* shell were relocated at the mapped location of prehistoric site P-27-001859. Site record updates on Department of Parks and Recreation 523 forms were completed for all relocated sites.

Presidio of Monterey Studies

Pacific Legacy, Inc. completed the cultural resources inventory and analysis for the components of the project under the jurisdiction of the U.S. Army, which include the Monterey Pipeline through

the Presidio of Monterey as well as the aquifer storage and recovery (ASR) well locations on the former Fort Ord military base property. The study included archival research, a surface survey, and a survey using a metal detector to locate any potential historic-era resources associated with the Presidio (Reese, 2011). The metal detector did not find "clear signs of intact historic-era features" (Reese, 2011:21). The archival research and surface survey identified three prehistoric sites in the vicinity of the proposed Monterey Pipeline direct APE: CA-MNT-931 (located approximately 200 feet from the direct APE), and two areas of midden immediately adjacent to the direct APE (designated Presidio #1 and Presidio #2 for this analysis). Pacific Legacy concluded that Presidio #1 is re-deposited midden used for fill during landscaping. Pacific Legacy's survey was inconclusive as to whether the sparse surface scatter of Presidio #2 represents an intact prehistoric deposit or re-deposited midden soil from an unknown prehistoric site, and whether it extends into the Monterey Pipeline direct APE. The cultural resources consultant recommended limited subsurface testing of Presidio #2 to clarify these two issues (Reese, 2011:22).

Monterey Peninsula Light Rail Transit Project

Far Western Anthropological Group, Inc. (Far Western) and JRP Historical Consulting LLC (JRP) surveyed the Monterey Branch Line of the Southern Pacific Railroad in 2010 for the TAMC's proposed Light Rail Transit Project (Herbert et al., 2010; Ruby, 2010).

Far Western completed an intensive survey for archaeological resources, which included background research and a geoarchaeological assessment. Far Western and JRP surveyed the TAMC's proposed Light Rail Transit Project corridor, which included the railroad right-of-way from Castroville to Monterey. The TAMC's proposed Light Rail Transit Project corridor overlaps with the direct APE between Marina and Monterey. The majority of the survey was completed using narrow (less than 7-meter) transects; however, in some locations the survey area was wider, and transects were spaced approximately 20 meters apart. Visibility varied. Along the railroad tracks the ground surface was covered in railroad ballast. Dense ice plant and pavement also obscured portions of the survey area.

Far Western did not record any prehistoric or historic-era archaeological sites in the portion of the TAMC corridor that overlaps with the direct APE. However, as described in Section 4.15.2.2, above, the geoarchaeological assessment for the TAMC's proposed Light Rail Transit Project concluded that the corridor traverses areas with stream or river crossings, estuaries, and lagoons that are highly sensitive for buried prehistoric archaeological sites (Meyer in Ruby, 2010).

JRP recorded and evaluated the Monterey Branch Line of the Southern Pacific Railroad. With the exception of the Monterey Southern Pacific Passenger Depot (which was determined eligible for listing in the NRHP in 2005 but is located outside of the direct APE), JRP recommended that the railroad and associated features were ineligible for listing in the NRHP (or the CRHR) due to a lack of integrity (Herbert et al., 2010). As of this writing, the SHPO has not yet concurred with this recommendation.

Fort Ord Studies

The former Fort Ord military installation overlaps the location of the Terminal Reservoir portion of the direct APE. Several cultural resources studies have been conducted within the boundaries of former Fort Ord, including: *Historical and Architectural Documentation Reports for Fort Ord* (Office of Directorate of Environmental Programs, 1993); *Historic-period Archaeological Survey at Henneken's Ranch and the Windmill Site, Fort Ord, Monterey County, California* (Bowman et al., 1994); *Management Summary of the Historic Period Archaeological Survey at Fort Ord, Monterey County, California* (Bowman, 1994); *A Cultural Resources Survey of 783 Hectares, For Ord, Monterey County, California* (Waite, 1994); *An Inventory of Historic-period Archaeological Sites at Fort Ord, Monterey County, California* (Babson, 1993); and *Historical and Architectural Documental Reports for Fort Ord, California* (Lapp et al., 1993). While Stilwell Hall and 35 other buildings were determined eligible for listing in the NRHP, none of these architectural or structural resources are located in the Terminal Reservoir/ASR Pump Station project location.

Archaeological sensitivity studies of the former Fort Ord military base were performed to determine the nature and extent of archaeological resources on the base (Swernoff, 1981; U.S. Army Corps, 1992; Waite, 1994). During the 1981 study a total 1,047.5 acres were surveyed. While not physically surveyed, the 1981 study determined the Terminal Reservoir/ASR Pump Station direct APE has a low sensitivity for prehistoric archaeological resources (Swernoff, 1981). Alternatively the 1992 investigation determined that the Terminal Reservoir/ASR Pump Station direct APE to have a moderate sensitivity for prehistoric archaeological resources (U.S. Army Corps, 1992). While only one prehistoric archaeological resource has been recorded within the former Fort Ord military base, the paucity of sites within the large (+20,000-acre) military base can be attributed to the long period of U.S. Army occupation at the base and the resulting major disturbances; the shifting nature of the western half of the base's soils in dune areas; the steep nature of the eastern portion of the base; the marginal nature of much of the soils and landforms within the base; and the small percentage of archaeologically surveyed areas or subsurface archaeological testing (Swernoff, 1981).

The ACHP, the SHPO, and the U.S. Army entered into a Programmatic Agreement to address issues related to cultural resources during base closure. The Programmatic Agreement incorporated the results of the archaeological survey completed by the U.S. Army and includes provisions for handling any previously unidentified cultural resources or human remains discovered during environmental testing and cleanup.

URS conducted a thorough pedestrian survey of the Terminal Reservoir portion of the APE, within the former Fort Ord area, on September 11, 2014. Survey transects were spaced approximately 5 to 10 meters apart. Surface visibility was highly variable throughout the APE. Certain areas of prior ground disturbance (roads, staging areas, maneuver training areas, etc.) did have less vegetation and increased ground visibility. The vegetation consisted of low-lying grasses, coastal scrub and brush. Ground visibility in these areas was increased by intermittently scraping away the vegetation. Rodent-burrow back dirt piles, cut banks, and exposed sand dune areas were closely inspected for indicators of archaeological deposits.

MPWSP Test Slant Well

As discussed in Chapter 3, Project Description, CalAm has constructed a test slant well at the CEMEX active mining area in north Marina and will operate the test slant well for up to 18 months as part of a pilot program. Environmental review covering the construction of the test slant well and operation of the pilot program was completed by the Monterey Bay National Marine Sanctuary in accordance with NEPA requirements in October 2014 and by the California Coastal Commission (CCC) in accordance with CEQA requirements in November 2014. The test slant well was also evaluated by the city of Marina in the *California American Water Slant Test Well Project Draft Initial Study/Mitigated Negative Declaration* (State Clearinghouse No. 2014051060) (City of Marina, 2014).

Under contract to the city of Marina and as part of that earlier CEQA effort, SWCA Environmental Consultants (SWCA) prepared a cultural resources investigation and evaluation for the test slant well (SWCA, 2014). SWCA evaluated the CEMEX sand mining facility (referred to therein as the Lapis Sand Mining Plant and CEMEX Plant) and determined it to be a Historic District eligible for listing in the NRHP and the CRHR under Criteria A/1 (association with an important event) and Criteria C/3 (architectural merit). SWCA noted the CEMEX sand mining facility is "an excellent example of a continuously operating coastal sand mining operation in the southern Monterey Bay, an increasingly rare property type". SCWA determined that the Historic District retains a high level of integrity and captures the evolution of the plant through its period of significance (1906–1960). The Lapis Sand Mining Plant Historic District includes several contributing resources: the Sorting Plant, Washing Plant, Canal Flume, Lapis Siding, Superintendent's Residence, Bunkhouse, Garage/Office, Maintenance Shop, Scale House and Office, and a number of small ancillary buildings spread throughout the property. The settling ponds and dredging pond located in the active mining area, just north of the Source Water Pipeline, were initially developed as part of the modernization of the facility in 1959–1960 (SWCA, 2014).

SWCA determined that development of the test slant well would result in direct damage or removal of the Lapis Siding, causing a significant impact on a Historic District contributor. SWCA recommended that the project be redesigned to avoid direct impacts to the Lapis Siding in adjacent areas that do not contain structures associated with the Lapis Sand Mining Plant. Several other contributing resources are located in close proximity of proposed trenching and earthmoving activities; however, given the industrial nature of the site, these activities would be consistent with the ongoing operations of the CEMEX sand mining facility. Construction and operation of the test slant well was not anticipated to have any visual effects to the Historic District because the test slant well and related components would be below ground (SWCA, 2014).

SWCA did not identify any archaeological resources at the CEMEX sand mining facility. However, SWCA recommended that all construction workers and supervisory personnel be required to attend a cultural resources awareness training session and that an archaeological monitor be present during any ground-disturbing activities occurring within 100 feet of historic buildings (SWCA, 2014).

4.15.3.3 Study Findings

Archaeological Resources

Records on file at the NWIC indicate that 36 archaeological resources have been recorded within a 0.5-mile radius of the direct APE. Twenty archaeological resources are prehistoric shell middens, three of which contain documented human remains. Five resources are multicomponent, including the above-mentioned El Castillo NRHP-listed site. One site is the former location of a post-contact village with wooden houses and a cultivated field. The 10 recorded historic-era archaeological resources include building and wall foundations, a railroad grade, a fenceline, and a shipwreck.

The records search results indicate that no prehistoric sites have been previously recorded within the direct APE; three prehistoric sites (CA-MNT-931 and two unnumbered areas of midden in the Presidio of Monterey) have been identified within a 200-foot radius of the direct APE.

The records search results also indicate that a portion of two previously recorded historic-era resources (fenceline [P-27-002416] and the Monterey and Salinas Valley Railroad [P-27-002417]) are within the direct APEs of the Salinas Valley Return Pipeline and the MPWSP Desalination Plant, respectively, and that one previously recorded historic-era resource (the Del Monte Hotel Depot foundation [P-27-002940]) is mapped within 200 feet of the direct APE of the Monterey Pipeline. These six resources as well as the potential historic-period archaeological resources at the Lapis Sand Mining Plant Historic District are described in detail below. All other documented archaeological resources are greater than 200 feet from the direct APE and are primarily within the cities of Monterey and Pacific Grove (see **Table 4.15-3**).

Subsurface Slant Wells

No archaeological resources have been previously identified in the direct APE for the subsurface slant wells. No archaeological resources were identified in this direct APE during the 2010–2013 survey effort.

MPWSP Desalination Plant

One historic-era resource has been previously identified in the MPWSP Desalination Plant direct APE (railroad grade [P-27-002417]).

P-27-002417 *(CA-MNT-2080H)*, a historic-era, narrow-gauge railroad grade, was recorded by Morgan et al. in 1998. The railroad grade consisted of cuts through low hills and sand dunes with raised berms across low-lying areas. No ties, spikes, or other artifacts related to the railroad were observed. The railroad grade represents the remains of California's first narrow-gauge railroad—the Monterey and Salinas Valley Railroad. This railroad was constructed by local farmers to facilitate the shipping of produce to Salinas and was incorporated in 1874 (Morgan et al., 1998b). Jones and Holson revisited the grade in 2008 and recorded three discontinuous segments (Jones and Holson, 2009). The railroad grade is mapped within the proposed MPWSP Desalination Plant direct APE.

TABLE 4.15-3
ARCHAEOLOGICAL RESOURCES PREVIOUSLY IDENTIFIED IN THE ½-MILE RECORDS-SEARCH RADIUS

Primary	Trinomial	Age	Description	Recorded By/Date	Previous Eligibility Determination
P-27-000151	CA-MNT-15	Prehistoric	Shell midden	Pilling/1948; Gerbic/2006	Listed in the NRHP (El Castillo – #71000167)
P-27-000157	CA-MNT-21	Protohistoric	Post-contact village site	Pilling/1948	Not evaluated
P-27-000158	CA-MNT-22	Prehistoric	Game field	Pilling/1948	Not evaluated
P-27-000163	CA-MNT-27/H	Multicomponent	Artifact concentration with possible prehistoric component	Pilling/1948	Not evaluated
P-27-000236	CA-MNT-101/H	Multicomponent	Large habitation site (9 feet deep); beads, stone artifacts, bedrock mortars, burials; also part of original Spanish Presidio; tile fragments and pottery fragments	Pilling/1948; Gerbic/2006	Listed in the NRHP (El Castillo – #71000167)
P-27-000237	CA-MNT-102	Prehistoric	Site at base of breakwater; no additional information	Fisher/1935	Not evaluated
P-27-000238	CA-MNT-103/H	Multicomponent	Large habitation site; shell midden, bedrock mortar, possible petroglyphs, human remains; historic-period artifact scatter	Fisher/1935; Loeffler and Wilfong/1981	Not evaluated
P-27-000243	CA-MNT-108/H	Multicomponent	Shell midden with human remains; Vizcaino landing site	Pilling/1948; Gerbic/2006	Listed in the NRHP (El Castillo – #71000167)
P-27-000305	CA-MNT-198	Historic-era	Destroyed adobe building location with related artifacts	Pilling/1949	Not evaluated
P-27-000306	CA-MNT-199	Historic-era	Castro's headquarters; stone building (at time of recording) with related artifacts	Pilling/1949	Not evaluated
P-27-000398	CA-MNT-295	Historic-era	Presidio wall	Pilling/1953	Not evaluated
P-27-000399	CA-MNT-296	Historic-era	Remains of an adobe building and related artifacts	Broadbent/1953	Not evaluated
P-27-000401	CA-MNT-298	Prehistoric	Shell midden	Pilling/n.d.	Not evaluated
P-27-000480	CA-MNT-1060	Prehistoric	Shell midden	Breschini/1980	Not evaluated
P-27-000482	CA-MNT-388	Prehistoric	Shell midden	Howard/1973	Not evaluated
P-27-000483	CA-MNT-389	Prehistoric	Shell midden	Howard/1973	Not evaluated
P-27-000484	CA-MNT-390	Prehistoric	Shell midden	Howard/1973	Not evaluated
P-27-000485	CA-MNT-391	Prehistoric	Shell midden with human remains	Howard/1973	Not evaluated
P-27-000657	CA-MNT-575	Prehistoric	Midden	Edwards/1974	Not evaluated
P-27-000775	CA-MNT-697	Prehistoric	Shell scatter	Fazio/1977	Not evaluated
P-27-000986	CA-MNT-929H	Historic-era	Adobe wall	Roberts/1979	Not evaluated
P-27-000988	CA-MNT-931	Prehistoric	Shell midden	Langer/1978	Not evaluated
P-27-000989	CA-MNT-932	Prehistoric	Shell midden	Ellison/1979	Not evaluated
P-27-001007	CA-MNT-950	Prehistoric	Shell midden	Mounday/1979	Not evaluated

TABLE 4.15-3 (Continued)
ARCHAEOLOGICAL RESOURCES PREVIOUSLY IDENTIFIED IN THE ½-MILE RECORDS-SEARCH RADIUS

Primary	Trinomial	Age	Description	Recorded By/Date	Previous Eligibility Determination
P-27-001011	CA-MNT-955	Prehistoric	Shell midden with human remains	Breschini/1979	Not evaluated
P-27-001031	CA-MNT-975	Prehistoric	Shell midden	Whitlow/1980	Not evaluated
P-27-001032	CA-MNT-976/H	Multicomponent	Shell midden, rock wall	Hampson/1980	Not evaluated
P-27-001116	CA-MNT-386	Prehistoric	Shell midden with human remains	Howard/1973	Not evaluated
P-27-001830	CA-MNT-1243H	Historic-era	Estrada Adobe foundation	Breschini and Haversat/1983	Not evaluated
P-27-001859	CA-MNT-662	Prehistoric	Midden	Roop/1976	Not evaluated
P-27-002416	CA-MNT-2079H	Historic-era	Fenceline	Morgan et al./1998	Not eligible
P-27-002417	CA-MNT-2080H	Historic-era	Railroad grade	Morgan et al./1998	Not evaluated
P-27-002940	–	Historic-era	Del Monte Hotel Depot foundation	Jones and Holson/2008	Not evaluated
–	–	Historic-era	Washington Street shipwreck	Breschini and Haversat/1999	Not eligible
Presidio #1	–	Prehistoric	Re-deposited midden identified during archaeological monitoring near Stilwell Avenue in the Presidio of Monterey	Reese/2010	Not evaluated
Presidio #2	–	Prehistoric	Sparse shell midden, possibly re-deposited	Reese/2011	Not evaluated

SOURCE: NWIC

The railroad grade was not identified in the MPWSP Desalination Plant direct APE during the 2010 survey effort (Koenig and Brewster, 2014); this site is presumed to have been graded or otherwise leveled in the recent past. No further consideration of this resource is necessary for the proposed project.

Pipelines North of Reservation Road

Pipelines north of Reservation Road include the Source Water Pipeline, Pump-to-Waste Pipeline, Desalinated Water Pipeline, Salinas Valley Return Pipeline, and Brine Discharge Pipeline. One historic-era resource (fenceline [P-27-002416]) has been recorded in the direct APE for all pipelines north of Reservation Road. Additionally, the Lapis Sand Mining Plant Historic District is within the direct and indirect APE of the Source Water Pipeline.

Lapis Sand Mining Plant Historic District. Previous survey efforts did not identify any archaeological resources in the portion of the Source Water Pipeline direct APE located within the CEMEX sand mining facility (SWCA, 2014). However, the area surrounding this section of the pipeline alignment is generally considered to have a high potential for buried cultural resources associated with prehistoric populations and Native Americans. Additionally, the historic-era use of the CEMEX sand mining facility may have generated archaeological deposits, including refuse pits and buried foundations. As a result, the direct APE for this pipeline section should be treated as potentially sensitive for the presence of both prehistoric and historic-era archaeological resources. The area of greatest sensitivity is the eastern portion of the facility because this area contains buildings that are contributing elements of the Lapis Sand Mining Plant Historic District. This area has been subject to less ground disturbance from sand mining than the western portion of the Source Water Pipeline direct APE, and is more likely to contain intact prehistoric sites or buried historic-era archaeological features associated with the sand mining facility. Section 4.15.5.4, Construction Impacts and Mitigation Measures, below, provides recommendations regarding potential archaeological resources in the Lapis Sand Mining Plant Historic District.

P-27-002416 *(CA-MNT-2079H)*, a historic-era fenceline, was first recorded by Morgan et al. in 1998. The resource consists of two segments of fence and is located along the border of the proposed Salinas Valley Return Pipeline direct APE. The fence was constructed from 4- by 6-inch vertical posts, 1- by 6-inch horizontal rails at the top and bottom, and vertical pickets of various sizes between the posts. Barbed wire was stapled to the fence. A chain-link fence had replaced a large section of the historic fence at the Monterey Regional Wastewater Treatment Plant. Pacific Legacy revisited the fence in 2008. At that time, the fence appeared to be in the same general condition as described by Morgan et al. (Jones and Holson, 2009).

The fence was originally recorded in association with the Armstrong Ranch (Morgan et al., 1998a). The Armstrong Ranch (P-27-002415) also consisted of a former historic-era building cluster, a windmill (Feature 1), and a 120-foot-long fenceline (Feature 2). A row of Cypress trees (Linear Feature 1), access roads, and a sparse artifact concentration were also noted. At the time of the 1998 recording, the buildings (including a residence, barn, and outbuildings) had been removed/demolished and the vicinity graded and leveled for use as an equipment yard and agricultural field. The site was described as lacking integrity with limited data potential (Morgan et al., 1998a).

In 2005, the area was resurveyed and functioned as an equipment storage yard and a staging area (Busby, 2005). The windmill had been removed by that time. Based on the surface components of the site, the Armstrong Ranch was recommended as ineligible for listing in the NRHP and the CRHR under any of the criteria (Busby, 2005).

The fenceline was revisited during the 2010 survey effort (Koenig and Brewster, 2014). Section A of the fenceline is located in the direct APE, south of a row of Cypress trees along the access road leading to the Monterey Regional Water Treatment Plant. Section A consists of 4- by 6-inch vertical posts with barbed wire. Most of the posts have collapsed, and the barbed wire has been removed. Cross boards are scattered in the Cypress trees. Much of the segment has been replaced with a modern chain-link fence beginning at the water treatment plant's entrance gate. Section B of the fenceline is outside of the direct APE.

Section A of the fence within the direct APE does not appear to meet any criteria for listing in the NRHP, either individually or as a district contributor. The fenceline is associated with the Armstrong Ranch, which is an early American-period ranch in the Monterey Bay area; however; the fence itself does not represent an important event in the history of California (Criterion A) and is not specifically associated with a significant person (Criterion B). The fence does not represent the craftsmanship of a master builder or style of construction (Criterion C) and does not have the potential to yield information important to history (Criterion D). Furthermore, the fence does not retain integrity of design, materials, workmanship, or feeling because a substantial portion of the original fence has been replaced by a chain-link fence. The fenceline has been previously recommended as ineligible for listing in the CRHR (Busby, 2005:29), and the assessment of the fenceline performed for this study concurs with this recommendation. In addition, the fenceline does not appear eligible for the NRHP, and no further consideration of this resource is necessary for the proposed project.

Improvements to ASR System

The proposed improvements to the Seaside Groundwater Basin ASR System include installation of two additional ASR injection/extraction wells (the ASR-5 and ASR-6 Wells), two ASR Conveyance Pipelines, the ASR Pump-to-Waste Pipeline, the ASR Settling Basin, and the ASR Pump Station. No archaeological resources have been previously identified in the direct APE for these improvements. No archaeological resources were identified in the direct APE for these improvements during the 2010–2013 survey effort.

Pipelines and Other Conveyance Facilities South of Reservation Road

Pipelines and other conveyance facilities south of Reservation Road include the Transmission Main, Transfer Pipeline, Monterey Pipeline, Terminal Reservoir, Valley Greens Pump Station, and interconnection improvements for Highway 68 satellite systems (i.e., Ryan Ranch-Bishop and Main System-Hidden Hills). Three prehistoric archaeological resources (CA-MNT-931 and two unnumbered areas of midden in the Presidio of Monterey) and one historic-era resource (the Del Monte Hotel Depot foundation [P-27-002940]) have been recorded in or immediately adjacent to the direct APE for the pipelines and other conveyance facilities south of Reservation Road.

P-27-000988 (CA-MNT-931) is prehistoric midden located in the Presidio of Monterey. The deposit was originally recorded in 1978 (Langley, 1978). Test excavations conducted in 1985 suggest the "site" is actually re-deposited midden soils used for fill during landscaping (Hildebrandt et al., 1985:22–24 cited in Reese, 2011). No further consideration of this resource is necessary for the proposed project.

Presidio #1 is an unnumbered midden deposit (temporarily designated as *Presidio #1*) in the Presidio of Monterey (Reese, 2010a:6 cited in Reese, 2011). Pacific Legacy concluded that the materials appear to be discrete and re-deposited patches of midden soil that were likely imported during landscaping activities (Reese, 2010a:6, 2010b:4-5 cited in Reese, 2011). The midden patch is highly disturbed by both historic-era construction and rodent bioturbation (Reese, 2010b:4-5 cited in Reese, 2011).

Based on the known conditions of Presidio #1, the midden soil does not appear to be an intact or significant prehistoric deposit; it does not retain "focus"[1] and therefore the integrity necessary to convey the archaeological significance necessary for NRHP eligibility. Presidio #1 does not appear eligible for listing in the NRHP or the CRHR, and no further consideration of this resource is necessary for the proposed project.

Presidio #2 is a second area of unnumbered midden (temporarily designated as *Presidio #2*) located in the Presidio of Monterey. The deposit measures approximately 18 meters north-south by 30 meters east-west. Pacific Legacy identified several faunal bone fragments, one Monterey-banded chert flake, and several small pieces of shell. The sediments surrounding the midden soil deposit are composed of yellowish-tan decomposing granite gravels (Reese, 2011:15–16). It was unclear whether the sparse surface scatter of Presidio #2 represents an intact prehistoric deposit or re-deposited midden soil from an unknown prehistoric site. The surface evidence was inconclusive as to whether the site extends into the Monterey Pipeline direct APE, because the direct APE is paved in this location.

The conditions of Presidio #2 are unclear. The subsurface stratigraphy of the deposit has not been investigated, and it is not known whether the midden soils extend into the boundaries of the Monterey Pipeline direct APE. While formal evaluation to determine the site's eligibility for listing in the NRHP or the CRHR has not been conducted, sufficient information exists to suggest that the site may qualify as a historical resource pursuant to CEQA Section 15064.5(a)(4) and Public Resources Code 21098.1 and as a historic property based on the criteria of the National Historic Preservation Act of 1966, as amended. As such, this analysis considers Presidio #2 to be a historical resource. Section 4.15.5.4, Construction Impacts and Mitigation Measures, below, provides recommendations regarding Presidio #2.

P-27-002940, the Del Monte Hotel Depot foundation, is a concrete and tile foundation recorded by Jones and Holson in 2009. It is the foundation of the Colonial Revival-style railroad depot built for the third Del Monte Hotel during the 1920s (Cain, 2005:114). The foundation is located in a parking

[1] Focus refers to the accuracy with which the archaeological remains represent a situation or condition.

lot and is marked by a Monterey Historical Society sign. The foundation is constructed of board-molded concrete and red ceramic tile flooring. A wood frame is visible on portions of the exterior. It measures 46 feet east-west and 18 feet north-south and extends approximately 14 inches above the ground surface. Three metal tables are located on the eastern end of the foundation. The foundation is immediately adjacent to, but outside of, the Monterey Pipeline direct APE. The foundation was revisited during the 2010 survey effort (Koenig and Brewster, 2014); however, the foundation is not located in the direct APE and would not be affected by the proposed project. No further consideration of this resource is necessary for the proposed project.

Architectural/Structural Resources

Monterey Pipeline

A total of 23 architectural/structural resources have been identified in the direct and indirect APE for the Monterey Pipeline. This includes one resource in the direct APE (the Presidio Entrance Monument partially within Stillwell Avenue) and 22 resources in the indirect APE along W. Franklin Street in downtown Monterey. In addition, the Lapis Sand Mining Historic District, which has been determined to be eligible for listing in the NRHP and CRHR, is located within the direct and indirect APEs for the Source Water Pipeline. These resources are listed in **Table 4.15-4** and shown in **Figures 4.15-2a** and **4.15-2b**.

The Monterey Pipeline would extend through the NRHP-eligible Presidio of Monterey Historic District, which includes 90 separate contributing resources (OHP, 2012). Three contributing structures are within the direct and indirect APE through the Presidio, located either within or adjacent to Stillwell Avenue. These include: (1) the 1935 Entrance Monument (Structure 112) located partially within Stillwell Avenue; (2) the 1935 Flagpole (Structure 133); and (3) the 1904 Officer's Club (Building 105) (see **Figure 4.15-2a**).

The Monterey Pipeline would also extend along W. Franklin Street in downtown Monterey, from High Street to the south to Figueroa Street to the north. 22 historical resources constructed between 1849 (the Osio-Rodruquez Adobe) and 1928 (the Blazer Building) are concentrated along this stretch of W. Franklin Street (see **Figure 4.15-2a**). These resources are located between 10 feet and 44 feet from the curb and are within the indirect APE for the Monterey Pipeline.

The Source Water Pipeline traverses the NRHP/CRHR-eligible Lapis Sand Mining Plant Historic District (see discussion below and **Figure 4.15-2b**).

The Monterey Pipeline would terminate near the existing Eardley Pump Station on Sinex Avenue at the end of Eardley Avenue. The Eardley Pump Station was constructed in 1926 and is on the City of Pacific Grove's Historic Register. CalAm owns the building and site. The functions of the pump station itself have been transferred to the pump station at the David Avenue Reservoir; the pump station is no longer in operation. CalAm plans to remove the pumps, motors, and piping in the near future and is considering building demolition. The Eardley Pump Station is outside of the direct and indirect APE for the MPWSP.

TABLE 4.15-4
HISTORIC ARCHITECTURAL RESOURCES IN THE MPWSP DIRECT AND INDIRECT APE

Number on Figure 4.15-2a	Historic Name	Address	Date of Construction	Determination of Eligibility	Distance from Curb (feet)
1	Osio-Rodriguez Adobe	380 Alvarado Street	1849	3S	44
2	Ordway Block Building, Ordway Pharmacy	398 Alvarado Street	1905	3S	10
3	Monterey County Bank, Wells Fargo Bank	399 Alvarado Street	1931	3S	15
4	Goldstine Block Building, Atlas Pawn Shop	400 Alvarado Street	1906	3S	10
5	Monterey Hotel	408 Alvarado Street	1904	2S2	30
6	Village Hardware	410 Alvarado Street	1880	3S	30
7	Blazer Development	201 W. Franklin Street	1928	3S	10
8	Unnamed residence	498 W. Franklin Street	1903	5S3	32
9	Unnamed residence	530 W. Franklin Street	1911	5S1	20
10	Unnamed residence	541 W. Franklin Street	1926	5S3	25
11	Unnamed residence	560 W. Franklin Street	1907	5S3	30
12	Unnamed residence	632 W. Franklin Street	1908	5S3	20
13	Unnamed residence	698 W. Franklin Street	1908	5S3	25
14	Unnamed residence	702 W. Franklin Street	1908	5S3	32
15	Unnamed residence	716 W. Franklin Street	1908	5S3	25
16	Unnamed residence	759 W. Franklin Street	1905	5S3	25
17	Unnamed residence	882 W. Franklin Street	n.d.	5S3	20
18	Unnamed residence	898 W. Franklin Street	1908	5S3	20
19	Unnamed residence	899 W. Franklin Street	n.d.	5S3	20
20	Monterey First Presbyterian Church	398 Pacific Street	1910	3S	10
21	Entrance Monument, Structure 112	Presidio- Stillwell Avenue	1935	2D2	Within direct APE
22	Flagpole Structure 133	Presidio- Stillwell Avenue	1935	2D2	25
23	Officer's Club, Building 105	Presidio- Stillwell Avenue	1904	2D2	44
-	Lapis Sand Mining Plant Historic District	Lapis Road	1906–1960s	3D[a]	Within direct APE

ELIGIBILITY CODES:

1S = Individual property listed in the NRHP by the Keeper. Listed in the CRHR.
2S2 = Individual property determined eligible for the NRHP by consensus through the Section 106 process. Listed in the CRHR.
3S = Appears eligible for the NRHP as an individual property through survey evaluation.
3D = Appears eligible for the NRHP as a contributor to a NR eligible district through survey evaluation.
5S1 = Individual property that is listed or designated locally.
5S3 = Appears eligible for local listing or designation through survey evaluation.
6Y = Determined ineligible for the NRHP by consensus through the Section 106 process. Not evaluated for the CRHR or local listing.

NOTE:

[a] Recent evaluation not yet approved by the Office of Historic Preservation.

SOURCE: Office of Historic Preservation, Historic Property Directory for Monterey County, 2012.

NOTE:
*Project area boundary refers to the area within which all construction related disturbance would occur.

SOURCE: ESA, 2013

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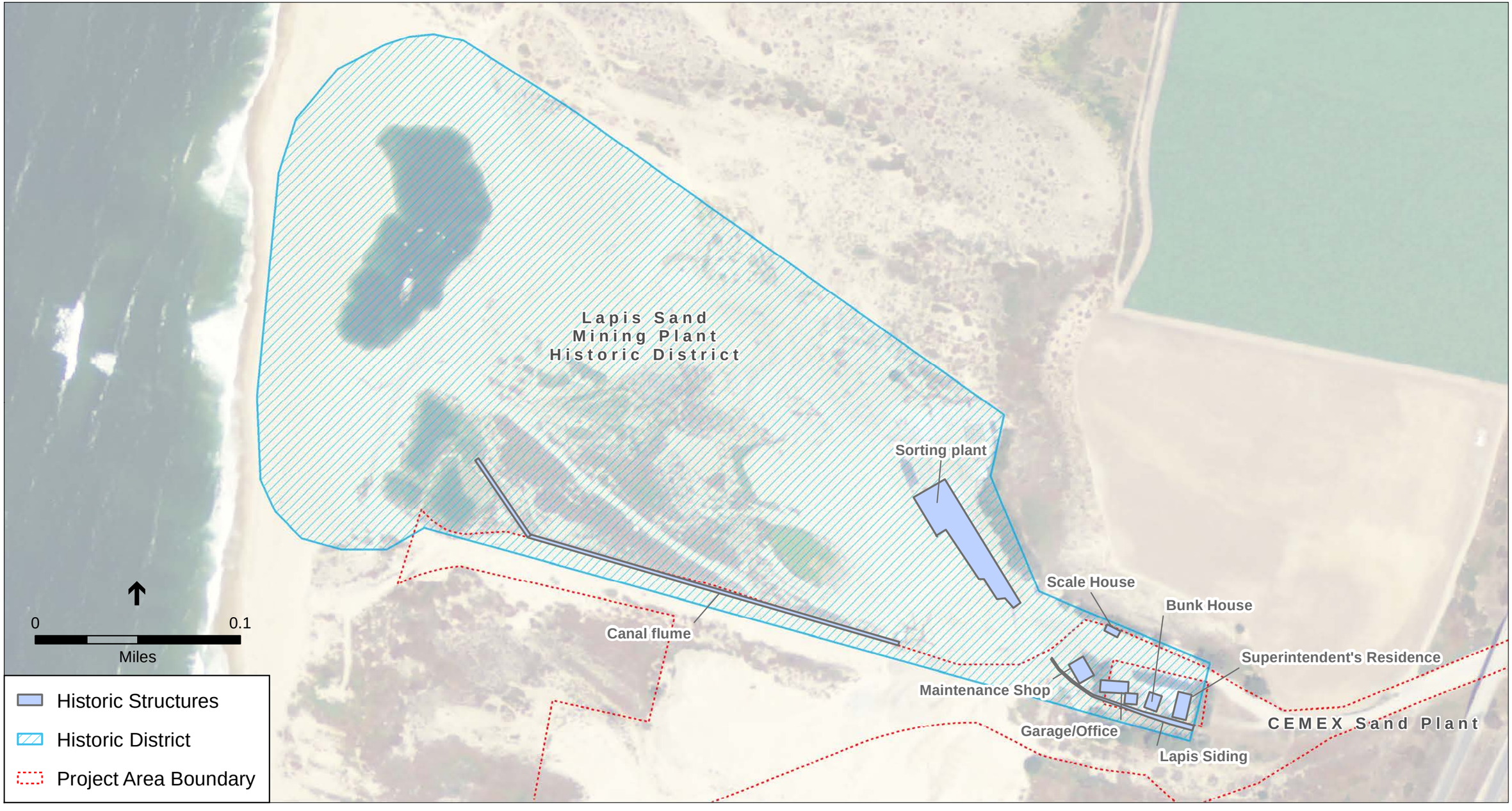
Figure 4.15-2a

Historic Resources within the Monterey Pipeline APE



NOTE:
*Project area boundary refers to the area within which all construction related disturbance would occur.

SOURCE: ESA, 2013

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Figure 4.15-2b

Historic Resources in the Source Water Pipeline APE

Section 4.15.5.4, Construction Impacts and Mitigation Measures, below, provides mitigation measures to avoid direct and indirect impacts resulting from construction of the Monterey and Source Water Pipelines.

Subsurface Slant Wells

No historical resources listed in or eligible for listing in the CRHR or historic properties eligible for listing in the NRHP are located in the direct or indirect APEs of the subsurface slant wells.

MPWSP Desalination Plant

No historical resources listed in or eligible for listing in the CRHR or historic properties eligible for listing in the NRHP are located in the direct or indirect APEs of the MPWSP Desalination Plant.

Improvements to ASR System

No historical resources eligible for listing in the CRHR or historic properties eligible for listing in the NRHP are located in the direct or indirect APEs for the proposed ASR injection/extraction wells (ASR-5 and ASR-6 Wells), ASR Settling Basin, Terminal Reservoir/ASR Pump Station, ASR Conveyance Pipelines, and ASR Pump-to-Waste Pipeline.

Salinas Valley Return Pipeline, Brine Discharge Pipeline, Transfer Pipeline, Valley Greens Pump Station, Ryan Ranch-Bishop Interconnection Improvements, and Main System-Hidden Hills Interconnection Improvements

No historical resources eligible for listing in the CRHR or historic properties eligible for listing in the NRHP are located in the direct or indirect APEs for the proposed Salinas Valley Return Pipeline, Brine Discharge Pipeline, Transfer Pipeline, Valley Greens Pump Station, Ryan Ranch-Bishop Interconnection Improvements, and Main System-Hidden Hills Interconnection Improvements.

Source Water Pipeline, Desalinated Water Pipeline, Transmission Main, and Monterey Pipeline

Historical resources eligible for listing in the CRHR (historic properties eligible for listing in the NRHP) are located in the direct and indirect APEs of the Source Water Pipeline (Lapis Sand Mining Plant Historic District), the Desalinated Water Pipeline and the Transmission Main (Monterey Branch Line of the Southern Pacific Railroad), and the Monterey Pipeline (Monterey Branch Line of the Southern Pacific Railroad, Monterey Old Town Historic District, and the Presidio of Monterey Historic District).

Lapis Sand Mining Plant Historic District. The direct and indirect APEs of the Source Water Pipeline traverse the Lapis Sand Mining Plant Historic District. SWCA recorded and evaluated the historic district in 2014 as eligible for listing in the NRHP and the CRHR. The historic district comprises several contributing elements including the Sorting Plant, Washing Plant, Canal Flume, Lapis Siding, Superintendent's Residence, Bunkhouse, Garage/Office, Maintenance Shop, Scale House and Office, a number of small ancillary buildings spread throughout the property, several settling ponds, and a dredging pond. The section of the proposed Source Water Pipeline

located within the CEMEX sand mining facility would be aligned along the south side of several contributing buildings and, as proposed, would require the removal of the Lapis Siding. The Lapis Siding consists of an approximately 420-foot-long railroad segment that was constructed circa 1906 to connect the Lapis Sand Mining Plant with the Monterey Branch Line of the Southern Pacific Railroad to the east (see discussion of Monterey Branch Line, below). The eastern portion of the Lapis Siding consists of two parallel rail lines that merge into one rail line at a rail switch located approximately 135 feet to the west of the CEMEX sand mining facility entrance. The siding continues along a general northwesterly course for approximately 285 feet before it becomes covered by sand and dirt. Since its decommissioning in the late 1980s, the recorded segment of the Lapis Siding has been partially in-filled and as a result, no ballast or ties are currently visible. The recorded segment of the Lapis Siding retains integrity of location, design, setting, feeling, and association. Historic topographic maps indicate that historically the Lapis Siding extended further west and north than was observed (SCWA, 2014). Because of the constantly shifting sand dunes, there is potential that other intact segments of Lapis Siding are buried underneath the changing landscape.

Monterey Branch Line of the Southern Pacific Railroad (P-27-002923). The Monterey Branch Line of the Southern Pacific Railroad traverses the Desalinated Water Pipeline, Transmission Main, and Monterey Pipeline. Fourteen contributing resources, including the railroad line and associated buildings, have been evaluated for their eligibility to the NRHP (Herbert et al., 2010). One building (located outside the indirect APEs of the pipelines)—the Monterey Southern Pacific Passenger Depot—was determined eligible for individual listing in the NRHP. Previous evaluations of the railroad line found that the surveyed portions and related structures are not eligible for listing in the NRHP.

The most recent recording and evaluation effort included all portions of the Monterey Branch Line located within the Desalinated Water Pipeline, Transmission Main, and Monterey Pipeline direct APEs. The evaluation concluded that while the Monterey Branch Line appears to meet the significance criteria for listing in the NRHP, it lacks integrity to convey its significance. Therefore, it was determined to be ineligible for listing in the NRHP (Herbert et al., 2010). As a result, no further consideration of this resource is necessary for the proposed project.

Monterey Old Town Historic District is a NRHP-listed District (#70000137) that includes 17 adobes and other early Spanish Colonial buildings in downtown Monterey. The District lies within in the Monterey State Historical Park and includes the Custom House, Cooper-Molera Adobe Complex, Larkin House, California's First Brick House, Colton Hall (City Hall of Monterey), Old Whaling Company, Stevenson House, First Theater, Pacific House Museum, Interpretive House, Casa del Oro, and Casa Soberanes. The Monterey Old Town Historic District was listed in the NRHP in 1970 and does not have an established boundary. It is divided into two discontiguous sections. The southern section is bounded roughly by the four blocks surrounding the intersection of Madison and Pacific Streets; the northern section borders the Monterey Bay and encompasses the blocks surrounding the intersections of Scott Street, Pacific Street, Olivier Street, Alvarado Street, and Calle Principal. None of the contributors to the NRHP-listed Monterey Old Town Historic District are within the direct or indirect APE of the Monterey

Pipeline. The section of the Monterey Pipeline along W. Franklin Street passes approximately two blocks (about 900 feet) to the east of the northern section of the District and one block (approximately 700 feet) to the west of the southern section of the District. Due to the distance between the proposed Monterey Pipeline alignment and the Monterey Old Town Historic District, no further consideration of this resource is necessary for the proposed project.

Presidio of Monterey Historic District. As described above, the Presidio of Monterey has been determined eligible for listing in the NRHP. The boundary of the District coincides with the boundary of the Presidio of Monterey. Ninety buildings at the Presidio of Monterey are contributing elements, along with Soldier Field, the road system, and retaining walls. Another 26 buildings, built after the period of significance identified for the District, are not considered contributing elements. The Monterey Pipeline would pass through the Presidio of Monterey Historic District along Stillwell Avenue and Fitch Avenue. The pipeline would pass within 45 feet of three contributing elements (1935 Entrance Monument, 1935 Flagpole, and the 1904 Officer's Club) as described above.

4.15.3.4 Summary of Cultural Resources in the MPWSP APE

This section summarizes significant cultural resources within the direct and indirect APE of the proposed project components. The relevant proposed project components are identified in brackets at the end of each bullet.

- **Presidio #2.** It is unclear whether the midden soil at Presidio #2 is intact, re-deposited, or extends into the indirect APE of the Monterey Pipeline. For this assessment, Presidio #2 is considered a historical resource and eligible for listing in the NRHP and the CRHR. Impact 4.15-2, below, analyzes the potential for project implementation to adversely affect this resource. (Monterey Pipeline)

- **Subsurface Prehistoric Archaeological Resources.** Based on the geoarchaeological assessment described under the heading, Geological Context, in Section 4.15.2.2, above, there is the potential for deeply buried archaeological resources to exist within at the locations shown on **Figure 4.15-1**. Impact 4.15-2, below, analyzes the potential for project implementation to adversely affect buried archaeological resources. (Monterey Pipeline and Valley Green Pump Station [both site options])

- **Downtown Monterey and Lapis Sand Mining Plant Historic District – Subsurface Archaeological Resources.** There is potential for unknown historic-era subsurface archaeological resources to be discovered during installation of the: (1) Monterey Pipeline in downtown Monterey along W. Franklin Street between High Street and Figueroa Street, and (2) section of the Source Water Pipeline that traverses the Lapis Sand Mining Plant Historic District. Historic-era archaeological resources in downtown Monterey could include features or deposits related to early Spanish and Mexican occupation, including roads or other transportation-related features and water conveyance features such as pipelines and sewer systems. At the Lapis Sand Mining Plant Historic District there could be artifacts or features related to the early establishment of the mining facility. Impact 4.15-2, below, analyzes the potential for project implementation to adversely affect these resources. (Monterey Pipeline and Source Water Pipeline)

- **Downtown Monterey – Historic Architectural Resources.** No buildings and structures that contribute to the Monterey Old Town Historic District are located within the direct or indirect APE for the Monterey Pipeline. No aboveground components would be visible from the Historic District after project completion. Similarly, no aboveground components would be located within the viewshed of other eligible or listed historic buildings adjacent to the area of direct impact of the Monterey Pipeline. However, numerous historic architectural resources located along W. Franklin Street in downtown Monterey are within the area of indirect impact. These resources could be affected by construction vibration because they are within 45 feet from the street curb. This analysis uses a damage threshold of 0.12 in/sec PPV at a distance of 45 feet. Due to the concentration of historic properties in downtown Monterey, the relatively minimal building setbacks in this area, and the assumption that the Monterey Pipeline could be constructed anywhere within the right of way of W. Franklin Street, there is the potential that construction could occur within 45 feet from historic properties. Impact 4.15-1, below, analyzes the potential for project implementation to adversely affect these resources. (Monterey Pipeline)

- **Presidio of Monterey Historic District – Historic Architectural Resources.** The majority of the 90 contributing buildings at the Presidio of Monterey Historic District, including Soldier Field, and numerous streets and retaining walls are not within the area of direct impact of the Monterey Pipeline, and no aboveground project components would be visible within this NRHP-eligible District after project completion. However, three contributing buildings or structures in the Presidio of Monterey Historic District could be affected either directly because they are within the direct APE (i.e., the Presidio Entrance Monument on Stillwell Avenue), or indirectly from construction vibration because they are within 45 feet of the street curb. Impact 4.15-1, below, analyzes the potential for project implementation to adversely affect this resource. (Monterey Pipeline)

- **Lapis Sand Mining Plant Historic District – Lapis Siding.** Lapis Siding, a contributing feature of the Lapis Sand Mining Plant Historic District is within the direct and indirect APEs of the Source Water Pipeline. Based on information provided by CalAm, it appears that the Source Water Pipeline alignment, as proposed, could require removal of a portion of the Lapis Siding. Impact 4.15-1, below, analyzes the potential for project implementation to adversely affect this resource. (Source Water Pipeline)

- **Lapis Sand Mining Plant Historic District – Other Historic Architectural Resources.** With the exception of the Source Water Pipeline, all other contributing buildings and structures associated with the Lapis Sand Mining Plant Historic District are not within the proposed project's direct APE, and no aboveground components would be visible within the Historic District after project completion (the nearby electrical control building for the slant wells would be located on the south side of the Cypress trees demarcating the southern boundary of the Lapis Sand Mining Plant Historic District and would not be visible from any contributing elements to the District). Similarly, no aboveground components would be located within the viewshed of other eligible or listed historic buildings adjacent to the area of direct impact. However, other historic architectural resources within the Lapis Sand Mining Plant Historic District are located within the area of indirect impact for the Source Water Pipeline. Ground disturbing activities associated with installation of the Source Water Pipeline in the CEMEX sand mining facility could be within 15 of other buildings and structures that contribute to the Lapis Sand Mining Plant Historic District. Impact 4.15-1, below, analyzes the potential for project implementation to adversely affect this resource. (Source Water Pipeline)

4.15.4 Regulatory Framework

4.15.4.1 Federal Regulations

National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966, as amended, requires that a federal agency with direct or indirect jurisdiction over a proposed federal or federally assisted undertaking, or issuing licenses or permits, consider the effect of the proposed undertaking on historic properties. A historic property may include a prehistoric or historic-era building, structure, object, site or district included in, or eligible for inclusion in, the NRHP maintained by the U.S. Secretary of the Interior. Federal agencies must also allow the Advisory Council on Historic Preservation (ACHP) to comment on the proposed undertaking and its potential effects on historic properties.

The implementing regulations for Section 106 of the NHPA (36 CFR 800) require consultation with the State Historic Preservation Officer (SHPO), the ACHP, federally recognized Indian tribes and other Native Americans, and interested members of the public throughout the compliance process. The four principal steps are:

- Initiate the Section 106 process, including consultation with interested parties (36 CFR 800.3);
- Identify historic properties, i.e., resources eligible for inclusion in the NRHP (36 CFR 800.4);
- Assess the effects of the undertaking on historic properties within the area of potential effect (36 CFR 800.5); and
- Resolve adverse effects (36 CFR 800.6).

Adverse effects on historic properties are often resolved through preparation of a Memorandum of Agreement or Programmatic Agreement developed in consultation between the federal agency, the SHPO, Indian tribes, and interested members of the public. The ACHP is also invited to participate. The agreement describes stipulations to mitigate adverse effects on historic properties listed in or eligible for the NRHP (36 CFR 60).

National Register of Historic Places

The National Historic Preservation Act established the NRHP 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" (36 CFR Section 60.2). The NRHP recognizes both historic-era 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. Buildings, structures, objects, sites or districts of potential significance must meet one or more of the following four established criteria (NPS, 1990):

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; or

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 (NPS, 1990).

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" (NPS, 1990). The NRHP recognizes seven qualities that, in various combinations, define integrity. 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. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

Although the NRHP standards for historic integrity are high, the National Register accepts that a property "must also be judged with reference to the particular criteria under which a resource is proposed for eligibility." Most archaeological properties are evaluated under Criterion D; the most applicable qualities of integrity under this criterion are those of location, materials, and association.

Integrity also defines the research potential of a resource. To possess research potential, archaeological data must have integrity in the form of what has been called "focus" (Deetz, 1977). Focus in this context means the accuracy with which the archaeological remains represent a situation or condition. When focus is absent or inadequate because of disturbance, a resource does not retain integrity. Remains that represent several activities or have materials that cannot be separated from one another into discrete contexts may also lack focus and therefore integrity.

4.15.4.2 State Regulations

Office of Historic Preservation

The State of California implements the National Historic Preservation Act through its statewide comprehensive cultural resources surveys and preservation programs. The Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, implements the policies of the National Historic Preservation Act on a statewide level. The OHP also maintains the California Historical Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the state's jurisdictions.

California Register of Historical Resources

The CRHR is "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" (PRC Section 5024.1[a]). The criteria for CRHR eligibility are based on NRHP criteria (PRC Section 5024.1[b];

California Code of Regulations [CCR], Title 14, Section 4850 et seq.). Certain resources are determined by the statute to be automatically included in the CRHR, including California properties formally determined eligible for, or listed in, the NRHP.

To be eligible for the CRHR, a prehistoric or historic-era property must be significant at the local, state, and/or federal level under one or more of the following four criteria. The resource:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history [PRC 5024.1(c)].

An eligible resource for the CRHR must meet one of the criteria of significance described above and retain enough of its historical character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance.

Additionally, the CRHR consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed in the NRHP and those formally determined eligible for the NRHP;
- California Registered Historical Landmarks from No. 770 onward; and
- California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Resources Commission for inclusion on the CRHR in accordance with adopted criteria.

Resources that may be nominated to the CRHR include:

- Individual historical resources;
- Historical resources contributing to the significance of an historic district under criteria adopted by the State Historical Resources Commission;
- Historical resources identified as significant in historical resources surveys, provided the survey meets the criteria listed in subdivision (g);
- Historical resources and historic districts designated or listed as city or county landmarks;
- Historic properties or districts that were designated or listed under a city or county ordinance, provided the criteria for designation or listing are consistent with the California Register; and
- Local landmarks or historic properties designated under any municipal or county ordinance.

California Environmental Quality Act

Historical Resources

CEQA requires lead agencies to determine, prior to approval, if a project would have a significant adverse effect on historical or unique archaeological resources.

The CEQA Guidelines generally recognize that a historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC Section 5024.1); (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 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, provided the lead agency's determination is supported by substantial evidence in light of the whole record (14 CCR Section 15064.5[a]).

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 of CEQA and CEQA Guidelines Section 15064.5 apply. If an archaeological site does not meet the criteria for a historical resource contained in the CEQA Guidelines, then the site may be treated as a "unique" archaeological resource in accordance with the provisions of PRC Section 21083. As defined in Section 21083.2, a unique archaeological resource is 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 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; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

A non-unique archaeological resource is an archaeological artifact, object, or site that does not meet the criteria in PRC Section 21083.2(g) and need not be given further consideration, other than the simple recording of its existence by the lead agency if it so elects (PRC Section 21083.2[h]). The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (14 CCR Section 15064.5[c][4]).

PRC Section 15064.5(f) requires a lead agency to make provisions for handling the accidental discovery of historical or unique archaeological resources during construction. Provisions include an immediate evaluation of the find by a qualified archaeologist. Work may continue on other parts of the project site while historical or unique archaeological resource mitigation takes place.

In the event that human remains are discovered in any location other than a dedicated cemetery, PRC Section 15064.5(e) requires all work to stop until the county coroner in which the remains are discovered is contacted. If the coroner determines the remains to be Native American, the coroner must contact the Native American Heritage Commission within 24 hours. The Commission would then identify any person or persons it believes to be the most likely descended from the deceased individual.

Paleontological Resources

Paleontological resources also are afforded protection by environmental legislation set forth under CEQA. Appendix G (Part V) of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources, stating that a project will normally result in a significant impact on the environment if it will "…disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study."

The SVP has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most California State regulatory agencies accept the SVP standard guidelines as a measure of professional practice.

California Public Resources and Administrative Codes

Several sections of the California Public Resources Code protect paleontological resources. Section 5097.5 prohibits "knowing and willful" excavation, removal, destruction, injury, and defacement of any paleontological feature on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted express permission. Section 5097.5 of the Public Resources Code specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, the California Penal Code Section 622.5 specifies that any person who willfully injures, disfigures, defaces, or destroys any object or thing of archaeological or historical interest or value, whether situated on private lands or within any public park or place, is guilty of a misdemeanor. PRC Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

4.15.4.3 Applicable State, Regional and Local Land Use Plans and Policies Relevant to Cultural Resources

Table 4.15-5 describes the regional and local land use plans, policies, and regulations pertaining to cultural resources that are relevant to the MPWSP and were adopted for the purpose of avoiding or mitigating an environmental effect. A general overview of these policy documents is provided in Section 4.8, Land Use, Land Use Planning, and Recreation. Also included in **Table 4.15-5** is an analysis of project consistency with such plans, policies, and regulations. Where the analysis concludes the proposed project would not conflict with the applicable plan, policy, or regulation, the finding is noted and no further discussion is provided. Where the analysis concludes the proposed project may conflict with the applicable plan, policy, or regulation, the reader is referred to Section 4.15.5, Impacts and Mitigation Measures, for additional discussion.

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TABLE 4.15-5
APPLICABLE STATE, REGIONAL, AND LOCAL LAND USE PLANS AND POLICIES RELEVANT TO CULTURAL AND PALEONTOLOGICAL RESOURCES

Project Planning Region	Applicable Plan	Plan Element/ Section	Project Component(s)	Specific Plan, Policy, or Ordinance	Relationship to Avoiding or Mitigating a Significant Environmental Impact	Project Consistency with Plan, Policy, or Ordinance
City of Monterey	Downtown Specific Plan	National Historic Landmark District Design Guidelines	Monterey Pipeline	***Treatment of Character-defining Features and Architectural Details.*** Character defining features and architectural details contribute to the character of a structure. Specific details are associated with each architectural style.	This policy is intended to protect and preserve historical resources, specifically architectural resources.	Consistent: The proposed project would not involve development that would affect previously identified historical and cultural resources within the city of Monterey.
Cities of Marina and Monterey (coastal zone)	California Coastal Act	Land Use	Subsurface Slant Wells, Monterey Pipeline	***Section 30244 Archaeological or paleontological resources.*** Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.	This policy is intended to protect and preserve archaeological and paleontological resources.	Potentially Inconsistent: No known archaeological or paleontological resources are present in the areas of Marina where MPWSP components are proposed. However, ground-disturbing activities associated with the project components in the city of Marina or Monterey coastal zone could result in the inadvertent discovery of and damage to unknown archaeological resources. This issue is discussed further in Impact 4.15-2. The proposed project would not affect any geologic units that are known or suspected to contain paleontological resources.
City of Marina (coastal zone and inland areas)	City of Marina General Plan	Community Design and Development	Subsurface Slant Wells, Source Water Pipeline, Desalinated Water Pipeline, Transmission Main	***Policy 4.126:*** The following scenic and cultural resources are deemed to be particularly valuable, and the following policies should be pursued. 1. All archaeological resources which may be present in the Marina Planning Area shall be protected and preserved. To this end, development proposed in areas of high archaeological sensitivity, i.e., the terraces and benches along the Salinas River, the peripheries of vernal ponds, and coastal beaches, shall be required to undertake a reconnaissance by a qualified archaeologist, and, where artifacts are identified, to protect and preserve such resources.	This policy is intended to protect and preserve archaeological resources.	Potentially Inconsistent: No known archaeological resources are present in the areas of Marina where MPWSP components are proposed. However, areas of high archaeological sensitivity exist in the Source Water Pipeline vicinity. Additionally, ground-disturbing activities associated with construction of the Subsurface Slant Wells, Source Water Pipeline, Desalinated Water Pipeline, and Transmission Main could result in the inadvertent discovery of and damage to unknown archaeological resources. This issue is discussed further in Impact 4.15-2.
City of Seaside (coastal zone)	City of Seaside Local Coastal Program Land Use Plan	Land Use and Development	Transmission Main, Monterey Pipeline, Transfer Pipeline	***Policy LUD-CZ 2.11****:* General Permit Considerations – Cultural Resources. Mitigations are to be required as a condition of development where it would adversely impact any archaeological or paleontological resources as identified by the State Historic Preservation Officer (IV.B.3.d.4).	This policy is intended to reduce adverse impacts on archaeological or paleontological resource identified by the State Historic Preservation Officer.	Potentially Inconsistent: No known archaeological or paleontological resources identified by the State Historic Preservation Officer are present in the areas of Seaside where MPWSP components are proposed. However, project components proposed for Seaside would involve ground disturbing activities that could result in the inadvertent discovery of and damage to unknown archaeological resources. This issue is discussed further in Impacts 4.15-2. The proposed project would not affect any geologic units that are known or suspected to contain paleontological resources.
City of Seaside (coastal zone and inland areas)	Seaside General Plan	Conservation/ Open Space	Transmission Main, Monterey Pipeline, Transfer Pipeline, ASR Conveyance Pipeline, ASR Pump-to-Waste Pipeline, ASR Settling Basin, ASR Pump Station, Terminal Reservoir	***Policy COS-5.1:*** Identify and conserve archaeological, architectural, and historic resources within Seaside.	This policy is intended to conserve archaeological, architectural, and historic resources.	Potentially Inconsistent: No known archaeological, architectural, and historical resources are present in the areas of Seaside where MPWSP components are proposed. Construction of project components within Seaside's coastal zone and inland areas would not impact any architectural or historical resources. However, construction would involve ground disturbing activities that could result in the inadvertent discovery of and damage to unknown archaeological resources. This issue is discussed further in Impact 4.15-2.

TABLE 4.15-5 (Continued)
APPLICABLE STATE, REGIONAL, AND LOCAL LAND USE PLANS AND POLICIES RELEVANT TO CULTURAL AND PALEONTOLOGICAL RESOURCES

Project Planning Region	Applicable Plan	Plan Element/ Section	Project Component(s)	Specific Plan, Policy, or Ordinance	Relationship to Avoiding or Mitigating a Significant Environmental Impact	Project Consistency with Plan, Policy, or Ordinance
City of Seaside (coastal zone and inland areas)	Seaside General Plan	Conservation/ Open Space	Transmission Main, Monterey Pipeline, Transfer Pipeline, ASR Conveyance Pipeline, ASR Pump-to-Waste Pipeline, ASR Settling Basin, ASR Pump Station, Terminal Reservoir	***Implementation Plan COS-5.1.1:*** Assess and Mitigate Impacts to Cultural Resources. Continue to assess development proposals for potential impacts to sensitive historic, archaeological, and paleontological resources pursuant to the California Environmental Quality Act (CEQA). a) For structures that potentially have historic significance, require that a study be conducted by a professional archaeologist or historian to determine the actual significance of the structure and potential impacts of the proposed development in accordance with CEQA Guidelines Section 15064.5. The City may require modification of the project and/or mitigation measures to avoid any impact to a historic structure, when feasible. Assess development proposals for potential impacts to significant paleontological resources pursuant to of the California Environmental Quality Act Guidelines. If the project involves earthworks, the City may require a study conducted by a professional paleontologist to determine if paleontological assets are present, and if the project will significantly impact the resources. If significant impacts are identified, the City may require the project to be modified to avoid impacting the paleontological materials, or require mitigation measures to mitigate the impacts.	This policy is intended to assess and mitigate impacts on cultural resources, including historic, archaeological, and paleontological resources.	Potentially Inconsistent: No known cultural resources are present in the areas of Marina where MPWSP components are proposed. Construction of project components within Seaside's coastal zone and inland areas would not impact any architectural or historical resources. However, construction would involve ground disturbing activities that could result in the inadvertent discovery of and damage to unknown archaeological resources. The proposed project would not affect any geologic units that are known or suspected to contain paleontological resources.
County of Monterey (coastal zone and inland areas)	Monterey County General Plan	Public Service	Source Water Pipeline, Desalinated Water Pipeline, Brine Discharge Pipeline, Salinas Valley Return Pipeline, MPWSP Desalination Plant, Main System-Hidden Hills and Ryan Ranch-Bishop Interconnection Improvements, Valley Greens Pump Station (both site options)	***Policy PS-12.5:*** The Monterey County Historic Resources Review Board shall: a. Review and make recommendations on restoration, rehabilitation, alteration, and demolition proposals affecting identified historical and cultural resources. b. Work for the continuing education of county residents concerning historic resources; c. Seek financial support from local, state, and federal governments as well as the private sector to protect, preserve, and enhance the County's historic resources; d. Coordinate its activities with all groups concerned with the preservation of historic resources; and Review projects that involve historic resources on the National Register of Historic Places, California Register of Historical Resources, or the County's Local Register of Historic Resources to assure projects are consistent with good preservation practices.	This policy is intended to ensure the continued protection of Monterey County's historical and cultural resources on the National Register of Historic Places, California Register of Historical Resources, or the County's Local Register of Historic Resources.	Consistent: The proposed project would not involve development that would affect previously identified historical and cultural resources within unincorporated areas of Monterey County.
County of Monterey (coastal zone and inland areas)	Monterey County General Plan	Public Service	Source Water Pipeline, Desalinated Water Pipeline, Brine Discharge Pipeline, Salinas Valley Return Pipeline, MPWSP Desalination Plant, Main System-Hidden Hills and Ryan Ranch-Bishop Interconnection Improvements, Valley Greens Pump Station (both site options)	***Policy PS-12.10:*** Historic landscape, consisting of resource features important to the setting of a designated historic site, such as mature trees and vegetation, walls and fences, within historic neighborhoods, districts, and heritage corridors for which there is an adopted plan shall be protected.	This policy is intended to protect historic landscapes contributing to the designation of those sites as historic.	Consistent: None of the project components are proposed for locations that would affect a historic landscape contributing to the designation of any historic site within unincorporated Monterey County.
County of Monterey (coastal zone and inland areas)	Monterey County General Plan	Public Service	Source Water Pipeline, Desalinated Water Pipeline, Brine Discharge Pipeline, Salinas Valley Return Pipeline, MPWSP Desalination Plant, Main System-Hidden Hills and Ryan Ranch-Bishop Interconnection Improvements, Valley Greens Pump Station (both site options)	***Policy PS-12.11:*** An active involvement in historic and cultural resource management programs and support for the efforts of the Monterey County's historical organizations to preserve the County's historical resources shall be continued.	This policy is intended to ensure continued preservation of the County's historical resources.	Consistent: The proposed project would not involve development that would affect previously identified historical resources within unincorporated areas of Monterey County.
County of Monterey (coastal zone and inland areas)	Monterey County General Plan	Public Service	Source Water Pipeline, Desalinated Water Pipeline, Brine Discharge Pipeline, Salinas Valley Return Pipeline, MPWSP Desalination Plant, Main System-Hidden Hills and Ryan Ranch-Bishop Interconnection Improvements, Valley Greens Pump Station (both site options)	***Policy PS-12.12:*** Historical and cultural resources and sites shall be protected through zoning and other regulatory means. New development shall be compatible with existing historical resources to maintain the special values and unique character of the historic properties.	This policy is intended to protect historical and cultural resources (including historical character) from impacts of new development.	Consistent: The proposed project would not involve development that would affect previously identified historical resources within unincorporated areas of Monterey County.

TABLE 4.15-5 (Continued)
APPLICABLE STATE, REGIONAL, AND LOCAL LAND USE PLANS AND POLICIES RELEVANT TO CULTURAL AND PALEONTOLOGICAL RESOURCES

Project Planning Region	Applicable Plan	Plan Element/ Section	Project Component(s)	Specific Plan, Policy, or Ordinance	Relationship to Avoiding or Mitigating a Significant Environmental Impact	Project Consistency with Plan, Policy, or Ordinance
County of Monterey (coastal zone and inland areas)	Monterey County General Plan	Public Service	Source Water Pipeline, Desalinated Water Pipeline, Brine Discharge Pipeline, Salinas Valley Return Pipeline, MPWSP Desalination Plant, Main System-Hidden Hills and Ryan Ranch-Bishop Interconnection Improvements, Valley Greens Pump Station (both site options)	***Policy PS-12.15:*** The special character of designated historic districts and neighborhoods shall be retained.	This policy is intended to ensure continued protection of designated historic districts and neighborhoods.	Consistent: None of the project components are proposed for locations that would affect a designated historic district within unincorporated Monterey County.
County of Monterey (coastal zone)	North County Land Use Plan	Resource Management	Source Water Pipeline, Desalinated Water Pipeline	***Specific Policies 2.9.3*** 1. No development proposals in archaeologically sensitive areas or in areas described in policy 2.9.2(2) above shall be categorically exempt from environmental review. 2. When sufficient planning flexibility does not permit avoiding construction on archaeological or other types of cultural sites, adequate preservation measures shall be required. Mitigation shall be designed in accordance with guidelines of the State Office of Historic Preservation and the State of California Native American Heritage Commission. Any adverse impacts of development on archaeological or paleontological resources will be mitigated to the maximum extent feasible. 3. Off-road vehicle use, unauthorized collecting of artifacts, and other activities which could destroy or damage archaeological or cultural sites shall be prohibited. 4. Public access to or over known archaeological or paleontological sites should be limited, and concentrated in areas where supervision and interpretive facilities are available.	This policy is intended to minimize disturbance to archaeologically sensitive areas and limit public access to known archaeological and paleontological sites.	Potentially Inconsistent: No known archaeological or paleontological resources are present in the North County Land Use Plan areas where MPWSP components are proposed. However, project components would involve ground disturbing activities that could result in the inadvertent discovery of and damage to unknown archaeological resources. This issue is discussed further in Impacts 4.15-2. The proposed project would not affect any geologic units that are known or suspected to contain paleontological resources.
County of Monterey (coastal zone)	North County Land Use Plan	Resource Management	Source Water Pipeline, Desalinated Water Pipeline	***General Policy 2.9.1:*** North County's archaeological resources, including those areas considered to be archaeologically sensitive but not yet surveyed and mapped, shall be maintained and protected for their scientific and cultural heritage values. New land uses, both public and private, should be considered compatible with this objective only where they incorporate all site planning and design features necessary to minimize or avoid impacts to archaeological resources.	This policy is intended to minimize and avoid impacts of development on archaeological resources.	Potentially Inconsistent: No known archaeological resources are present in the North County Land Use Plan areas where MPWSP components are proposed. However, project components would involve ground disturbing activities that could result in the inadvertent discovery of and damage to unknown archaeological resources. This issue is discussed further in Impacts 4.15-2.
County of Monterey (coastal zone)	North County Land Use Plan	Resource Management	Source Water Pipeline, Desalinated Water Pipeline	***General Policies 2.9.2*** 1. Monterey County shall encourage the timely identification and evaluation of archaeological, historical, and paleontological resources, in order that these resources be given consideration during the conceptual design phase of land use planning or project development. 2. Whenever development is to occur in the coastal zone, including any proposed grading or excavation activity or removal of vegetation for agricultural use, the Archaeological Site Survey Office or other appropriate authority shall be contacted to determine whether the property has received an archaeological survey. If not, the parcel(s) on which the proposed development will take place shall be required to have an archaeological survey made if located: a. within 100 yards of the floodways of the Pajaro or Salinas Rivers, McCluskey, Bennett, Elkhorn, Moro Cojo, or Tembladero Sloughs, the Old Salinas River Channel or Moss Landing Harbor; b. within 100 yards of any known archaeological site (unless the area has been previously surveyed and recorded). The archaeological survey should describe the sensitivity of the site and appropriate levels of development, and development mitigation consistent with the site's need for protection. 3. All available measures, including purchase of archaeological easements, dedication to the County, tax relief, purchase of development rights, etc., shall be explored to avoid development on sensitive prehistoric or archaeological sites. 4. When developments are proposed for parcels where archaeological or other cultural sites are located, project design shall be required which avoids or substantially minimizes impacts to such cultural sites. To this end, emphasis should be placed on preserving the entire site rather than on excavation of the resource, particularly where the site has potential religious significance.	This policy is intended to avoid and minimize impacts of new development on archaeological, historical, and paleontological resources.	Potentially Inconsistent: No known archaeological, historical, or paleontological resources are present in the North County Land Use Plan areas where MPWSP components are proposed. However, areas of high archaeological sensitivity exist in the vicinity of proposed project components. Project construction would involve ground disturbing activities that could result in the inadvertent discovery of and damage to unknown archaeological resources. This issue is discussed further in Impacts 4.15-2. The proposed project would not affect any geologic units that are known or suspected to contain paleontological resources. None of the project components are proposed for locations that would affect a designated historic district within unincorporated Monterey County.

TABLE 4.15-5 (Continued)
APPLICABLE STATE, REGIONAL, AND LOCAL LAND USE PLANS AND POLICIES RELEVANT TO CULTURAL AND PALEONTOLOGICAL RESOURCES

Project Planning Region	Applicable Plan	Plan Element/ Section	Project Component(s)	Specific Plan, Policy, or Ordinance	Relationship to Avoiding or Mitigating a Significant Environmental Impact	Project Consistency with Plan, Policy, or Ordinance
Fort Ord Reuse Authority (inland areas)	Fort Ord Base Reuse Plan	Conservation	ASR Pipelines, ASR Settling Basin, ASR Pump Station, Terminal Reservoir, Transfer Pipeline	***Cultural Resources Policy A-1:*** The City of Seaside shall ensure the protection and preservation of archaeological resources at the former Fort Ord. ***Program A-1.1:*** The City of Seaside shall conduct a records search and a preliminary archaeological surface reconnaissance as a part of environmental review for any development project(s) proposed in a high archaeological resource sensitivity zone. ***Program A-1.2:*** The City of Seaside shall require that all known and discovered sites on the former Fort Ord with resources likely to be disturbed by a proposed project be analyzed by a qualified archaeologist with local expertise, recommendations made to protect and preserve resources and, as necessary, restrictive covenants imposed as a condition of project action or land sale. ***Program A-1.3:*** As a contractor work specification for all new construction projects, the City of Seaside shall include that during construction, upon the first discovery of any archaeological resource or potential find, development activity shall be halted within 50 meters of the find until ***the*** potential resources can be evaluated by a qualified professional archaeologist and recommendations made.	This program is intended to protect and preserve archaeological resources.	Potentially Inconsistent: No known archaeological resources are present within the areas of the former Fort Ord military base where the ASR Pipelines, ASR Settling Basin, ASR Pump Station, Terminal Reservoir, and Transfer Pipeline are proposed. However, ground-disturbing activities associated with the construction of these project components could result in the inadvertent discovery of and damage to unknown archaeological resources. This issue is discussed further in Impact 4.15-2.
Fort Ord Reuse Authority (Monterey County)	Fort Ord Base Reuse Plan	Conservation	Ryan Ranch–Bishop Interconnection Improvements	***Cultural Resources Policy A-1:*** The County of Monterey shall ensure the protection and preservation of archaeological resources at the former Fort Ord. ***Program A-1.1:*** The County of Monterey shall conduct a records search and a preliminary archaeological surface reconnaissance as a part of environmental review for any development project(s) proposed in a high archaeological resource sensitivity zone. ***Program A-1.2:*** The County of Monterey shall require that all known and discovered sites on the former Fort Ord with resources likely to be disturbed by a proposed project be analyzed by a qualified archaeologist with local expertise, recommendations made to protect and preserve resources and, as necessary, restrictive covenants imposed as a condition of project action or land sale. ***Program A-1.3:*** As a contractor work specification for all new construction projects, the County of Monterey shall include that during construction, upon the first discovery of any archaeological resource or potential find, development activity shall be halted within 50 meters of the find until the potential resources can be evaluated by a qualified professional archaeologist and recommendations made.	This policy is intended to minimize and avoid impacts of development on archaeological resources.	Potentially Inconsistent: No known archaeological resources are present within the areas of the former Fort Ord military base where the ASR Pipelines, ASR Settling Basin, ASR Pump Station, Terminal Reservoir, and Transfer Pipeline are proposed. However, ground-disturbing activities associated with the construction of these project components could result in the inadvertent discovery of and damage to unknown archaeological resources. This issue is discussed further in Impact 4.15-2.

SOURCE: City of Marina, 2006; City of Seaside, 2004, 2012; FORA, 2007; Monterey County 1982, 2010.

4.15.5 Impacts and Mitigation Measures

4.15.5.1 Significance Criteria

In accordance with Appendix G of the CEQA Guidelines, implementation of the proposed project would have a significant impact related to cultural and paleontological resources if it would:

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

In accordance with Section 106 of the NHPA, this analysis also considers the potential for the proposed project to result in adverse effects on historic properties.[2] In accordance with the specific Criteria of Effect and Adverse Effect defined in 36 CFR 800.5 for the evaluation of an undertaking's effects on historic properties, implementation of the proposed project would have a significant impact related to cultural resources if it would:

- Cause an adverse effect on a historic property when it may alter the characteristics of the property that qualify the property for inclusion in the NRHP. For the purpose of determining effect, alteration to features of the property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered.
- Cause an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:

    (1) Physical destruction, damage, or alteration of all or part of the property;

    (2) Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the NRHP;

    (3) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;

    (4) Neglect of a property resulting in its deterioration or destruction; and

    (5) Transfer, lease, or sale of the property.

[2] A historic property may include a prehistoric or historic-era district, site, building, structure, or object listed in, or eligible for listing in, the NRHP maintained by the U.S. Secretary of the Interior.

4.15.5.2 Approach to Analysis

Ground disturbance and excavation during project construction could disturb or destroy known and previously unrecorded cultural resources, including historical, archaeological, and paleontological resources and human remains. CalAm operations under the proposed project would have no impact on cultural and paleontological resources because project operations would not cause additional ground disturbance or generate strong vibrations. Thus, the analysis below focuses only on construction-related impacts to cultural and paleontological resources.

Architectural/Structural Historical Resources

Potential impacts on architectural resources are assessed by identifying whether implementation of the proposed project could affect resources that have been identified as historic properties for the purposes of the NHPA or as historical resources for the purposes of CEQA. Individual properties and districts include those that are significant because of their association with important events, people, or architectural styles or master architects, or for their informational value (NRHP and CRHR Criteria A/1, B/2, C/3, and D/4) and that retain sufficient historic integrity to convey their significance. Criterion D/4, however, is typically applied to the evaluation of archaeological resources and not to architectural resources, as described below. Once a resource has been identified as significant, it must be determined whether the impacts of the project would "cause a substantial adverse change in the significance" of the resource (CEQA Guidelines Section 15064.5[b]). A substantial adverse change in the significance of a historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of [the] historical resource would be materially impaired" (CEQA Guidelines Section 15064.5[b][1]). A historical resource is materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in (or eligibility for inclusion in) the CRHR or a qualified local register (CEQA Guidelines Section 15064.5[b][2]).

The currently established vibration damage threshold for historic buildings is 0.12 in/sec PPV at a distance of 25 feet. Using the FTA equation, the distance at which a vibratory roller PPV is lower than the damage threshold of 0.12 in/sec is at approximately 45 feet. The distance at which a typical drill rig PPV is lower than the damage threshold of 0.12 in/sec is at approximately 25 feet. At greater distances, no damage to historic buildings is expected due to vibrations.

Archaeological Resources

The significance of most prehistoric and historic-era archaeological sites is usually assessed under NRHP and CRHR Criterion D/4. This criterion stresses the importance of the information potential contained within the site, rather than its significance as a surviving example of a type or its association with an important person or event. Archaeological resources may qualify as historical resources under the definition provided in CEQA Guidelines Section 15064.5(a), or they may also be assessed under CEQA as unique archaeological resources, defined as archaeological artifacts, objects, or sites that contain information needed to answer important scientific research questions (PRC Section 21083.2). A substantial adverse change in the significance of an archaeological resource is assessed similarly to other historical resources, i.e., it means the destruction or material

alteration in an adverse manner of those physical characteristics of the resource that convey its significance under the relevant criteria (CEQA Guidelines Section 15064.5[b][2]).

Paleontological Resources

The paleontological analysis evaluates the potential to encounter paleontological resources (i.e., plant, animal, or invertebrate fossils or microfossils) during excavations associated with the proposed project. The paleontological potential of the geologic units that would be disturbed is used to evaluate the potential to encounter paleontological resources at the location of each project component. A potentially significant impact on paleontological resources would occur if: (1) construction of the project components would move or excavate previously undisturbed bedrock (native rock) and/or (2) the bedrock to be disturbed has a high paleontological potential. The potential impacts related to paleontological resources were analyzed qualitatively, based on review of published geologic and paleontological data for the project area and professional judgment. No paleontological field surveys were conducted for the proposed project.

Human Remains

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including PRC Section 5097.98 and Health and Safety Code Section 7050.5. These laws are identified above in Section 4.15.4.2, State Regulations. This analysis considers impacts including intentional disturbance, mutilation, or removal of interred human remains.

4.15.5.3 Summary of Impacts

Table 4.15-6 summarizes the proposed project's impacts and significance determinations for cultural and paleontological resources.

TABLE 4.15-6
SUMMARY OF IMPACTS – CULTURAL AND PALEONTOLOGICAL RESOURCES

Impacts	Significance Determinations
Impact 4.15-1: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines or historic properties pursuant to 36 CFR 800.5 during construction.	LSM
Impact 4.15-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines during construction.	LSM
Impact 4.15-3: Directly or indirectly destroy a unique paleontological resource or site, or unique geological feature during construction.	LS
Impact 4.15-4: Disturbance of any human remains, including those interred outside of formal cemeteries, during construction.	LSM

LS = Less than Significant
LSM = Less than Significant impact with Mitigation

4.15.5.4 Construction Impacts and Mitigation Measures

Impact 4.15-1: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines or historic properties pursuant to 36 CFR 800.5 during construction. (*Less than Significant with Mitigation*)

Monterey Pipeline

Direct Impacts. The Monterey Pipeline would be constructed within the rights-of-way of various streets, including those that pass through Presidio of Monterey Historic District and downtown Monterey. There is one historical resource located within the area of direct impact (the direct APE). The Presidio's Entrance Monument (Structure 112), which consists of two decorative stone columns capped by Spanish tile, is located partially within Stillwell Avenue and immediately adjacent to the curbs on either side of this street. Constructed in 1935, this stone entrance monument is a contributing element to the Presidio of Monterey Historic District, which has been determined eligible for listing in the National Register of Historic Places. Since the Monterey Pipeline could be constructed anywhere within the Stillwell Avenue road right-of-way, installation of the proposed pipeline could directly impact the entrance monument through inadvertent damage or alteration during construction. However, with implementation of **Mitigation Measure 4.15-1a (Avoidance and Vibration Monitoring for Pipeline Installation in the Presidio of Monterey Historic District, Downtown Monterey, and the Lapis Sand Mining Plant Historic District)**, this impact would be reduced to a less-than-significant level. Construction of the Monterey Pipeline could also indirectly impact the entrance monument due to construction vibration from the use of vibratory rollers, which could cause structural damage to this resource (see discussion of indirect impacts due to construction vibration, below).

Indirect Impacts. Aside from the Presidio Entrance Monument, there are 22 other historical resources are located within the area of indirect impact (the indirect APE) for the Monterey Pipeline. These resources are located along Stillwell Avenue in the Presidio of Monterey Historic District, and along W. Franklin Street in downtown Monterey. They are identified in **Table 4.15-4** and **Figures 4.15-2a-** and **4.15-2b**. Due to the concentration of historic properties in the Presidio of Monterey Historic District and downtown Monterey, the relatively minimal building setbacks from the street curbs in these areas (which range anywhere from 0 to 45 feet), and the fact that the Monterey Pipeline could be installed anywhere within the road rights-of-way of Stillwell Avenue and W. Franklin Street, the use of vibratory rollers during construction of the Monterey Pipeline could cause cosmetic or structural damage to historical resources. This analysis uses a damage threshold for historical resources, including older masonry structures, of 0.12 in/sec PPV at a distance of 25 feet. The use of vibratory rollers must occur at distances greater than 45 feet in order to avoid exceeding the threshold. Cosmetic or structural damage to these historical resources could result in a substantial adverse change in their significance, which would be a significant impact. However, with implementation of **Mitigation Measure 4.15-1a (Avoidance and Vibration Monitoring for Pipeline Installation in the Presidio of Monterey Historic District, Downtown Monterey, and the Lapis Sand Mining Plant Historic District)**, this impact would be reduced to a less-than-significant level by ensuring that construction-related vibration does not exceed the 0.12 in/sec PPV threshold.

Source Water Pipeline

Direct Impacts. Portions of the Lapis Sand Mining Plant Historic District are located within the area of direct area of impact (the direct APE) of the Source Water Pipeline. A segment of the Lapis Siding, a contributing element to the Lapis Sand Mining Plant Historic District, could require removal to accommodate the proposed Source Water Pipeline alignment if the pipeline were installed using open trench construction methods. Removal of the siding would result in a significant impact to a historical resource. Implementation of **Mitigation Measure 4.15-1b (Special Construction Techniques to Preserve Lapis Siding)** would reduce the impact to a less-than-significant level by requiring that the construction contractor use trenchless technologies to install the Source Water Pipeline beneath the Lapis Siding and employ measures to protect the Lapis Siding during construction.

Indirect Impacts. The Lapis Sand Mining Plant Historic District is also within the area of indirect impact (the indirect APE) of the Source Water Pipeline. The proposed Source Water Pipeline would be constructed less than 45 feet away from contributing elements to the Historic District and, in some cases, only 15 feet away from contributing elements. The use of vibratory rollers during construction of the Source Water Pipeline could cause cosmetic or structural damage to historical resources (the established threshold for damage to older masonry structures from a vibratory roller [expected construction equipment with the greatest PPV] is 0.12 in/sec PPV at a distance of 45 feet). Cosmetic or structural damage to these historical resources could result in a substantial adverse change in the significance of historical resources, which would be considered a significant impact. However, with implementation of **Mitigation Measure 4.15-1a (Avoidance and Vibration Monitoring for Pipeline Installation in the Presidio of Monterey Historic District, Downtown Monterey, and the Lapis Sand Mining Plant Historic District)**, this impact would be reduced to less than significant by ensuring that construction-related vibration does not exceed the 0.12 in/sec PPV threshold.

All Other Project Components

No historical resources listed in or eligible for listing in the CRHR or NRHP are located within the direct or indirect APE for the proposed subsurface slant wells, MPWSP Desalination Plant, Pump-to-Waste Pipeline, Desalinated Water Pipeline, Salinas Valley Return Pipeline, Brine Discharge Pipeline, Transmission Main, Transfer Pipeline, Terminal Reservoir/ASR Pump Station, ASR-5 and ASR-6 Wells, ASR Conveyance Pipelines, ASR Settling Basin, ASR Pump-to-Waste Pipeline, Valley Greens Pump Station, Main System-Hidden Hills Interconnection Improvements, and the Ryan Ranch-Bishop Interconnection Improvements. Therefore, no impact to historical resources would result from construction of these facilities.

Impact Conclusion

Installation of the Monterey Pipeline and Source Water Pipeline could result in direct (i.e., historic resources exist within the estimated construction disturbance area) and indirect (i.e., from construction-related vibration) impacts to contributing elements to the Presidio of Monterey Historic District and Lapis Sand Mining Plant Historic District, respectively. In addition, installation of the Monterey Pipeline could result in indirect impacts to other historical resources located along W. Franklin Street in downtown Monterey. Any physical alteration and/or

inadvertent damage to these historical resources would result in a significant impact. However, the impact would be reduced to a less-than-significant level with implementation of the prescribed mitigation measures. No impact would result from implementation of all other proposed project facilities because there are no historical resources within the direct and indirect APEs for these facilities.

Mitigation Measures

Mitigation Measure 4.15-1a applies only to the segment of the Monterey Pipeline located in downtown Monterey along W. Franklin Street between High Street and Figueroa Street, and the segment of the Source Water Pipeline located within the CEMEX sand mining facility.

Mitigation Measure 4.15-1a: Avoidance and Vibration Monitoring for Pipeline Installation in the Presidio of Monterey Historic District, Downtown Monterey, and the Lapis Sand Mining Plant Historic District.

CalAm shall construct the section of the Monterey Pipeline located on Stillwell Avenue within the Presidio of Monterey Historic District and within W. Franklin Street in downtown Monterey as close as possible to the centerlines of these streets to: (1) avoid direct impacts to the historic Presidio Entrance Monument, and (2) reduce indirect impacts from construction vibration to below the 0.12 inches per second (in/sec) peak particle velocity vibration (PPV) threshold. If CalAm determines that the pipeline cannot be located near the centerline of these street segments due to traffic concerns or existing utilities, the historic properties identified in **Table 4.15-4** shall be monitored for vibration during pipeline construction, especially during the use of jackhammers and vibratory rollers. If construction vibration levels exceed 0.12 in/sec PPV, construction shall be halted and other feasible construction methods shall be employed to reduce the vibration levels below the standard threshold. Alternative construction methods may include using concrete saws instead of jackhammers or hoe-rams to open excavation trenches, the use of non-vibratory rollers, and hand excavation.

CalAm shall also monitor all contributing buildings to the Lapis Sand Mining Plant Historic District located within 45 feet of the proposed Source Water Pipeline alignment. If construction vibration levels exceed 0.12 in/sec PPV, construction shall be halted and other feasible construction methods shall be employed that would reduce the levels below the standard threshold. Such alternative methods may include the use of non-vibratory rollers, using concrete saws or hoe-rams instead of jackhammers to open excavation trenches, as well as hand excavation.

If impact sheet pile installation is needed (i.e., for horizontal directional drilling or jack-and-bore) within 80 feet of any historical resource or within 80 feet of a historic district, CalAm shall monitor vibration levels to ensure that the 0.12-in/sec PPV damage threshold is not exceeded. If vibration levels exceed the applicable threshold, the contractor shall use alternative construction methods such as vibratory pile drivers.

Mitigation Measure 4.15-1b applies only to the Source Water Pipeline located within the CEMEX sand mining facility.

Mitigation Measure 4.15-1b: Special Construction Techniques to Preserve Lapis Siding.

CalAm's construction contract specifications shall identify specific design and construction techniques to be implemented during installation of the Source Water Pipeline in the vicinity of the Lapis Siding to avoid removal and modifications to this historical resource and protect

it from damage. The Source Water Pipeline shall be installed beneath the Lapis Siding using trenchless construction methods such as horizontal directional drilling or jack-and-bore. If sheet piles are needed for trenchless construction, impact sheet pile installation shall be prohibited within 80 feet of the Lapis Siding. Vibratory drivers shall be used instead of impact drivers where needed to reduce vibration levels below the 0.12 in/sec PPV damage threshold.

Impact 4.15-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines during construction. (*Less than Significant with Mitigation*)

Monterey Pipeline

Presidio #2, a possible prehistoric archaeological resource, is located within the Presidio of Monterey and immediately adjacent to the direct APE of the Monterey Pipeline. The surface evidence was inconclusive as to whether the site extends into the Monterey Pipeline direct APE, because the direct APE is paved in this location (Reese, 2011). As a result, construction of the Monterey Pipeline could result in inadvertent damage or disturbance to this resource, a significant impact.

Avoidance as the preferred manner of mitigating impacts to this archaeological site as required by CEQA Section 15126.4(b)(3) has been considered. Because of the difficulty in determining the location of buried resources and the general archaeological sensitivity of the Presidio of Monterey, especially nearer to the Monterey Bay shoreline, rerouting the pipeline alignment to aboid Presidio #2 could result in impacts to other unknown previously undiscovered archaeological sites. Preserving archaeological resources in place (i.e., incorporating the archaeological sites into parks or green space, covering or capping archaeological sites, and/or deeding sites into a permanent conservation easement) is not appropriate as the proposed pipeline would be below grade and wholly within an existing CalAm easement. However, potentially significant impacts to Presidio #2 could be reduced to a less-than-significant level with implementation of **Mitigation Measure 4.15-2a (Establish Archaeologically Sensitive Areas)**, which requires that all ground disturbing activities within 100 feet of Presidio #2 be monitored by a qualified archaeologist. This measure is consistent with the measure recommended in the *Final Environmental Assessment for the Monterey Bay Regional Desalination Project Monterey Presidio Pipeline Crossing* (RFB, 2012). The archaeological monitor would ensure that any potential impacts to buried unknown archaeological resources during construction are adequately mitigated by the appropriate protocols.

There is also potential for unknown historic-era subsurface archaeological resources to be discovered, and inadvertently damaged or destroyed, during installation of the section of the Monterey Pipeline located in the W. Franklin Street road right-of-way in downtown Monterey. Historic-era archaeological resources could include features or deposits related to early Spanish and Mexican occupation as well as early roads or transportation related features and water conveyance features such as pipelines or sewer systems. Project construction activities could result in damage or disturbance to such resources if they exist, a potentially significant impact.

However, impacts to unknown subsurface historic-era resources in downtown Monterey could be reduced to a less-than-significant impact with implementation of **Mitigation Measure 4.15-2a (Establish Archaeologically Sensitive Areas)**, which requires archaeological monitoring during project construction on W. Franklin Street between High Street and Figueroa Street.

Based on the geoarchaeological assessment in the Geological Context above, there is potential for deeply buried well-developed soil horizons to be located in the direct APE near Laguna del Rey in the city of Seaside, and El Estero Lake and Del Monte Lake in the city of Monterey as shown on **Figure 4.15-1**. Therefore, there is the potential for archaeological resources associated with those buried soils to be encountered during project work at the above locations. Project construction activities could result in damage or disturbance to such resources if they exist, a potentially significant impact. As discussed in Section 4.15.2.2 Geological Context, given the relatively narrow (maximum width of 7 feet) and linear nature of the ground disturbance for the Monterey Pipeline, the active coastal dune environment (which may have destroyed, disturbed, and/or removed archaeological materials), as well as the paucity of previously discovered deeply buried sites in the Monterey Bay vicinity, no additional subsurface investigations are recommended. To mitigate potential impacts to previously undiscovered buried archaeological resources in these Archaeologically Sensitive Areas (ASAs), this EIR recommends **Mitigation Measure 4.15-2a (Establish Archaeologically Sensitive Areas)**. This measure requires archaeological monitoring during project construction in ASAs so that if archaeological resources are encountered a qualified archaeological consultant can order cessation of work in the vicinity of the discovery and immediately assess the find to provide additional recommendations as necessary. Implementation of this mitigation measure would reduce potentially significant impacts to unknown prehistoric archaeological resources in the ASAs to a less-than-significant level.

Source Water Pipeline

There is potential for unknown historic-era subsurface archaeological resources related to the early operations within the Lapis Sand Mining Plant Historic District to be discovered and inadvertently damaged and/or destroyed during installation of the Source Water Pipeline, a significant impact. However, impacts to unknown subsurface historic-era resources in the Lapis Sand Mining Plant Historic District could be reduced to a less-than-significant impact with implementation of **Mitigation Measure 4.15-2a (Establish Archaeologically Sensitive Areas)**, which requires archaeological monitoring during project construction within 100 feet of any buildings or structures contributing to the Lapis Sand Mining Plant Historic District.

Valley Greens Pump Station (Both Site Options)

Based on the geoarchaeological assessment described in the Geological Context above, there is potential for deeply buried well-developed soil horizons to be located in the direct APE at the Valley Greens Pump Station Option 1 and Option 2 in unincorporated Monterey County. This impact is considered significant. To mitigate potential impacts to previously undiscovered buried archaeological resources in these ASAs, the project applicant shall implement **Mitigation Measure 4.15-2a (Establish Archaeologically Sensitive Areas)**, as described above.

All Other Project Components

No archaeological resources eligible for listing in the CRHR or the NRHP are located within the direct APE for the proposed subsurface slant wells, MPWSP Desalination Plant, Pump-to-Waste Pipeline, Desalinated Water Pipeline, Salinas Valley Return Pipeline, Brine Discharge Pipeline, Transmission Main, Transfer Pipeline, Terminal Reservoir/ASR Pump Station, ASR-5 and ASR-6 Wells, ASR Conveyance Pipelines, ASR Settling Basin, ASR Pump-to-Waste Pipeline, and interconnection improvements for Highway 68 satellite systems (i.e., Ryan Ranch-Bishop and Main System-Hidden Hills). Therefore, no impact to known archaeological resources would result from construction of these facilities. There is however the potential to uncover as yet undiscovered resources during project construction. To mitigate potential impacts to previously undiscovered buried archaeological resources, this EIR recommends **Mitigation Measure 4.15-2b (Inadvertent Discovery of Cultural Resources)** for all project components. This measure would ensure that work would halt in the vicinity of an archaeological find and that the resources were treated appropriately.

Impact Conclusion

A significant impact to archaeological resources could occur during construction of the proposed Monterey Pipeline, the Source Water Pipeline, and the Valley Greens Pump Station. However, the impact would be reduced to a less-than-significant level with implementation of **Mitigation Measure 4.15-2a (Establish Archaeologically Sensitive Areas)**. The mitigation would ensure that excavation activities located: within 100 feet of Presidio #2 in the Presidio of Monterey; in downtown Monterey along W. Franklin Street between High Street and Figueroa Street; within 100 feet of buildings and structures that are contributing elements of the Lapis Sand Mining Plant Historic District; and in the ASAs located along the Monterey Pipeline alignment and at the Valley Greens Pump Station (both site options) are monitored by a qualified archaeologist to ensure that no impacts to known and unknown prehistoric and historic-era archaeological resources would occur.

While no additional impacts to archaeological resources are expected, the possibility of uncovering unknown archaeological resources in the remaining direct APE cannot be entirely discounted. The potential inadvertent discovery of archaeological resources could be a significant impact. However, implementation of **Measure 4.15-2b (Inadvertent Discovery of Cultural Resources)** would ensure that work would halt in the vicinity of an unanticipated find so that a qualified archaeologist can make additional recommendations to reduce potential impacts to a less-than-significant level.

Land Use Plan & Policy Consistency

In addition to the physical impacts described above, as noted in **Table 4.15-5**, the MPWSP could conflict with applicable land use plans, policies, or ordinances related to cultural resources that were adopted for the purpose of avoiding or mitigating an environmental effect. As described above, construction of the Source Water Pipeline, Desalinated Water Pipeline, Transmission Main, Monterey Pipeline, Transfer Pipeline, ASR Conveyance Pipeline, ASR Pump-to-Waste Pipeline, ASR Settling Basin, ASR Pump Station, Terminal Reservoir, and Valley Greens Pump Station would involve ground-disturbing activities that could inadvertently disrupt or damage

unknown archaeological sites. As a result, construction of MPWSP components could conflict with one or more of the following: California Coastal Act Section 30244, the City of Marina General Plan Policy 4.126, the City of Seaside Local Coastal Program Land Use Plan Policy LUD-CZ 2.11, Seaside General Plan Policy COS-5.1, the North County Land Use Plan Specific Policy 2.9.3 and General Policies 2.9.1 and 2.9.2, and the Fort Ord Reuse Plan Policy A-1 for Inland Areas and Monterey County. Each of these policies was adopted for the purpose of avoiding or minimizing impacts to archaeological resources. As discussed in the preceding paragraphs, **Mitigation Measures 4.15-2a (Establish Archaeologically Sensitive Areas)** and **4.15-2b (Inadvertent Discovery of Cultural Resources)** would require archaeological monitoring and established protocols for accidental discovery of archaeological resources. With these measures implemented, the MPWSP would be brought into conformance with the above-noted policies.

Mitigation Measures

Mitigation Measure 4.15-2a applies to the Monterey Pipeline, Source Water Pipeline, and Valley Greens Pump Station (both site options).

Mitigation Measure 4.15-2a: Establish Archaeologically Sensitive Areas.

CalAm shall contract with a qualified archaeologist meeting the Secretary of the Interior's Qualification Standard (Lead Archaeologist) to prepare and implement an Archaeological Monitoring Plan, and oversee and direct all archaeological monitoring activities during project construction. Archaeological monitoring shall be conducted for all subsurface excavation work within 100 feet of Presidio #2 in the Presidio of Monterey; in downtown Monterey on W. Franklin Street between High and Figueroa Streets; within 100 feet of contributing buildings at the Lapis Sand Mining Plant Historic District; and in the Archaeologically Sensitive Areas (Laguna del Rey in the city of Seaside, El Estero Lake and Del Monte Lake in the city of Monterey, and the Valley Greens Pump Station [both site options] options in unincorporated Monterey County). At a minimum, the Archaeological Monitoring Plan shall:

- Detail the cultural resources training program that shall be completed by all construction and field workers involved in ground disturbance;
- Designate the person(s) responsible for conducting monitoring activities, including Native American monitor(s), if deemed necessary;
- Establish monitoring protocols to ensure monitoring is conducted in accordance with current professional standards provided by the California Office of Historic Preservation;
- Establish the template and content requirements for monitoring reports;
- Establish a schedule for submittal of monitoring reports and person(s) responsible for review and approval of monitoring reports;
- Establish protocols for notifications in case of encountering cultural resources, as well as methods for evaluating significance, developing and implementing plan to avoid or mitigate significant resource impacts, Native American participation and consultation, collection and curation plan, and consistency with applicable laws

including Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the Public Resources Code;

- Establish methods to ensure security of cultural resources sites;
- Describe the appropriate protocols for notifying the County, Native Americans, and local authorities (i.e. Sheriff, Police) should site looting and other illegal activities occur during construction with reference to Public Resources Code 5097.99.

During the course of the monitoring, the Lead Archaeologist may adjust the frequency—from continuous to intermittent—of the monitoring based on the conditions and professional judgment regarding the potential to encounter resources.

If archaeological materials are encountered, all soil disturbing activities within 100 feet of the find shall cease until the resource is evaluated. The Lead Archaeologist shall immediately notify the CPUC of the encountered archaeological resource. The Lead Archaeologist shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological resource, present the findings of this assessment to the CPUC. In the event archaeological resources qualifying as either historical resources pursuant to CEQA Section 15064.5 or as unique archaeological resources as defined by Public Resources Code 21083.2 are encountered, preservation in place shall be the preferred manner of mitigation.

If preservation in place is not feasible, the applicant shall implement an Archaeological Research Design and Treatment Plan (ARDTP). The Lead Archaeologist, Native American representatives, and the CPUC shall meet to determine the scope of the ARDTP. The ARDTP will identify a program for the treatment and recovery of important scientific data contained within the portions of the archaeological resources located within the project Area of Potential Effects (APE); would preserve any significant historical information obtained and will identify the scientific/historic research questions applicable to the resources, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The results of the investigation shall be documented in a technical report that provides a full artifact catalog, analysis of items collected, results of any special studies conducted, and interpretations of the resource within a regional and local context. All technical documents shall be placed on file at the Northwest Information Center of the California Historical Resources Information System.

Mitigation Measure 4.15-2b applies to all project components.

Mitigation Measure 4.15-2b: Inadvertent Discovery of Cultural Resources.

Following implementation of Mitigation Measure 4.15-2a, if prehistoric or historic-era cultural materials are encountered, all construction activities within 100 feet shall halt and the CPUC shall be notified. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse.

A Secretary of the Interior-qualified archaeologist shall inspect the find within 24 hours of discovery. If the find is determined to be potentially significant, the archaeologist, in

consultation with the CPUC and the appropriate Native American representative shall determine whether preservation in place is feasible. Consistent with CEQA Guidelines Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist, in consultation with the lead agency and the appropriate Native American representative, shall prepare and implement a detailed Archaeological Research Design and Treatment Plan (ARDTP). Treatment of unique archaeological resources shall follow the applicable requirements of Public Resources Code Section 21083.2. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project. The ARDTP shall include provisions for analysis of data in a regional context, reporting of results within a timely manner and subject to review and comments by the appropriate Native American representative before being finalized, curation of artifacts and data at a local facility acceptable to the appropriate Native American representative, and dissemination of final confidential reports to the appropriate Native American representative, the Northwest Information Center of the California Historical Resources Information System, the CPUC, and interested professionals.

Impact 4.15-3: Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature during construction. (*Less than Significant*)

All Project Components

The construction of the proposed project components would require the excavation through several geologic units that have the potential to contain paleontological resources, particularly vertebrate fossils. These geologic units include the Older Dune Sands, Marine Terrace Deposits, and the Monterey Formation. Vertebrate fossils have been collected from the Monterey Formation, but not from the other listed geologic units. Encountering fossils, particularly, vertebrate fossils, would be considered a significant impact.

As discussed above in Section 4.15.2.1, Paleontological Setting, and Section 4.15.4, Regulatory Framework, the SVP has established professional standards for evaluating the potential for paleontological resources based on the type of geologic unit, the previous discovery of fossils within the geologic unit and within or in close proximity to the proposed project, and whether the fossils are uncommon. Of the geologic units through which the project components would require excavation, only the Monterey Formation is known to have vertebrate fossils that would qualify as a significant paleontological resource. However, the project components would be constructed within a limited extent of the Monterey Formation within the previously-disturbed rights-of way. In addition, the diatoms and benthic foraminifera that comprise much of the formation are not considered a significant paleontological resource. Therefore, the potential impact to paleontological resources would be considered less than significant and no mitigation is necessary.

Mitigation Measures

None required.

Impact 4.15-4: Disturbance of any human remains, including those interred outside of formal cemeteries, during construction. (*Less than Significant with Mitigation*)

All Project Components

While no known human remains have been documented within the MPWSP direct APE, the possibility of inadvertently uncovering human remains cannot be entirely discounted. The potential inadvertent discovery of human remains is considered a significant impact. However, the impact would be reduced to a less-than-significant level with implementation of **Mitigation Measure 4.15-4 (Inadvertent Discovery of Human Remains)**. Mitigation Measure 4.15-4 would ensure that if human remains are uncovered during project construction the Most Likely Descendant of the deceased Native American is contacted and the remains are treated per the recommendations of the Coroner.

Mitigation Measures

Mitigation Measure 4.15-4 applies to all project components.

Mitigation Measure 4.15-4: Inadvertent Discovery of Human Remains.

In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find shall cease. The Monterey County Coroner shall be contacted immediately. The Coroner then has two working days to determine if the remains are Native American. If the remains are determined to be Native American, and no investigation of the cause of death is required, the Native American Heritage Commission (NAHC) will be contacted within 24 hours. The NAHC will then identify and contact the person or persons it believes to be the Most Likely Descendant (MLD)" of the deceased Native American(s), who in turn would make recommendations to the project applicant, the CPUC for the appropriate means of treating the human remains and any grave goods.

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