

4.4 CULTURAL RESOURCES

This section presents an evaluation of the potential for the proposed project to affect cultural resources that may be present within the study area. The study area is defined as the area that would be subject to disturbance by construction of the proposed project. This section also identifies mitigation measures intended to avoid or reduce the significance of impacts to cultural resources within the study area.

No public comments relating to cultural resources were received during the public scoping period.

4.4.1 Environmental Setting

The following brief description of the study area provides a broad overview of the environmental context for cultural resources within the vicinity of the proposed project.

Topographically the study area is on the ridges and alluvial plains of southeastern Marin County. In general, the site of the proposed desalination plant and ancillary facilities rests on San Quentin peninsula, a ridge and adjoining slopes of moderate relief that jut into the northwest arm of San Francisco Bay, and in the adjacent bayside hills and plains. The proposed desalination plant site itself is located on an area of fill material along the Bay shore of San Rafael.

The dominant geological substrate for the study area is derived from the Franciscan series which includes marine deposited sandstone, shale and chert, as well as glaucophane schist and volcanic rocks. Chert, a common prehistoric tool material, is evident on the ground surface at a number of locations within the study area, and fine quality chert was quarried at an archaeological site in the area. Bedrock outcrops are relatively rare within the study area. Many areas of the project are within highly disturbed contexts such as former rock quarries, Bay fill, or cross lands graded for subdivisions. The majority of the study area is urbanized.

Vegetation within open space areas of the study area is characteristic of Central Coast Range communities at low elevation. Vegetative zones range from grassland communities on the alluvial plains to grass/oak woodland communities on the surrounding hills. The grasslands are dominated by nonnative species associated with Euro-American incursions during the 18th and 19th centuries. Oak woodland species include isolated stands of valley oak (*Quercus lobata*) and coast live oak (*Quercus agrifolia*). In better-watered areas are California bay laurel (*Umbellularia californica*) and California buckeye (*Aesculus californica*). The riparian zones are composed of the species listed above, dense stands of blackberry (*Rubus vitifolius*) and poison oak (*Toxicodendron diversiloba*), and numerous introduced species.

The fauna of the study area are typical of the natural area of the coastal California. Black-tailed deer (*Odocoileus hemionus*) are evident throughout the study area, as are numerous smaller mammals, including the ground squirrel (*Spermophilus beechyi*), gray squirrel (*Sciurus griseus*), brush rabbit (*Sylvilagus bachmani*), black-tailed hare (*Lepus californicus*), pocket gopher (*Thomomys bottae*), and broad-handed mole (*Scapanus latimanus*). A large bird population is also evident.

The marshlands of the eastern margin of the study area contain a wide diversity of wetland species of both terrestrial and avian wildlife. The marshlands have served as an important habitat since prehistoric times. Early historic accounts depict the sound of ducks and geese as analogous

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to a “mighty waterfall” (Del Davis Associates, Inc. 1976:22). Shellfish of the marshlands and Bay margin have also been very significant in the natural and cultural history of the study area.

4.4.1.1 Ethnographic, Archaeological, and Historical Background

A concise overview of the archaeology of Marin County may be found in *California Archaeology* (Moratto 1984). The San Francisco Bay Area was the focus of some of the earliest academically based archaeology in North America. Of particular significance to the prehistoric record is Nelson’s recording and stratigraphically controlled excavation of many of the shellmounds (prehistoric occupation sites) that ring San Francisco Bay (Nelson 1909a).

One Marin County site, CA-MRN-17, has been dated to 5,480±125 years in the past. There is evidence of human occupation in the Bay region for at least 10,000 years. Native American occupation of the region has been continuous since the first human entry, and traditional lifeways continued to be practiced, at least in some aspects, well into the 19th century.

The Coast Miwok were the Native American population that was extant in the study area at the time of Euro-American contact. The Miwok had resided in Marin some 3,000 years prior to contact. Coast Miwok ethnography is described in Kelly (1978).

The Coast Miwok are encompassed within the Utian family of Penutian speakers. Early descriptions are limited at best. Because of the early disruptive impacts of missionization that were influential on Miwok culture prior to any ethnographic recordation, observations made on the Coast Miwok may not reflect native culture prior to contact. There is evidence of European contact with the Coast Miwok as early as 1579, when Sir Francis Drake is presumed to have landed at Drake’s Estero.

Ethnographers have learned less from Bay Area Indian groups than from any other area in Central California. Because the missions were established at Native American population centers in the Bay Area, San Francisco Bay region cultures were among the first to be disrupted.

The Coast Miwok, like other Bay Area groups, were hunters and gatherers participating in a subsistence cycle focused on the seasonal availability of resources. Animals such as deer and waterfowl were hunted, and various plant foods, especially acorns, were gathered. Shellfish was an important food resource throughout the region. Agriculture was not practiced. Villages were located near the Bay shore or streams or near springs in interior valleys within catchments rich in natural resources. South-facing and wind-sheltered slopes seem also to have been preferred.

Like other California groups, the Coast Miwok had no metal tools prior to European contact, except for a few that may have reached the Miwok as the result of European and/or Chinese shipwrecks or through trade with groups to the south. Instead, the Miwok made and used a wide variety of tools from the locally prevalent chert and from obsidian, which was obtained in trade or by travel to the sources (Napa County and the northern and eastern Sierra). Local sandstones, as well as harder rocks, were used for grinding tools and for bedrock mortars. Bone and antler were used for other tools. Shell, particularly clam, abalone and olivella shells were used for ornaments and possibly as a form of currency.

The Coast Miwok wore little clothing. Men occasionally wore a deerskin loincloth, and women wore a double apron of deerskin or tule. Hair was worn long, and men allowed their beards to grow. Various kinds of shell beads and ornaments were worn.

Dwellings were conical pole-and-grass or tule-covered structures, large enough to hold six to ten persons. Villages also had a sweathouse, a circular semisubterranean structure sometimes with a redwood bark slab roof. This was used in ceremonies, and in part as a social and work center for men. Large villages often had a dance house as well. These structures measured about 15 feet in diameter and were constructed similarly to the sweathouse.

Large villages had a chief, called *hoypuh*, who directed village activities through consensus. The chief's position was not hereditary but was likely based on the persuasive powers of the individual, or other outstanding skills. The old chief and four elderly women tutored the man chosen to replace him.

The history of the study area began around 1579, the date at which many researchers believe Sir Francis Drake established a fort in the Point Reyes area. In 1595, Juan Sebastian Ceremeño's Manila galleon, San Augustin, ran aground at Drake's Bay. European artifacts in many protohistoric sites in Marin probably had their origin in this shipwreck. Recent research also suggests that Chinese traders may have visited the area in 1422 (Menzies 2002), although further research is needed to corroborate this hypothesis.

More significant in local history was the establishment of Spanish missions: at San Francisco in 1776, at San Rafael in 1817, and at Solano-Sonoma in 1823. Forced missionization, dislocation of populations and associated cultural impacts including epidemics of introduced disease, resulted in disintegration of native culture and rapid depopulation. Miwok population was reduced from approximately 2,000 prior to contact to only 250 by 1850 (Kelly 1978:414).

After secularization of the missions in 1834–36, the remnant Miwok population dispersed. Most formerly native lands were rapidly claimed by Californios and, in the next decade by the Americans who claimed California in 1846. Cattle ranching and small-scale farming were the principal activities in the study area. San Rafael was the principal population center. During this time, a few former Miwok villages were reinhabited by small Native American groups, possibly groups that had been culturally mixed at the missions. At least one rancho, Rancho Olompali, was "granted" to a Native American, Camilio Ynita (McGuire and Parkman 1981).

The study area remained relatively rural into the 20th century. Development – principally light industrial, commercial and residential – focused on the strip between the Bay and US 101. Most significant in terms of the archaeological resource base has been the extensive 20th century filling of the Bay, extending from the bayside marshes. This occurred gradually, with 19th century diversions of creeks and diking of marshes to create flat grazing and residential lands, and to reduce marshlands, which were considered undesirable. Water was diverted from bayside creeks for use on orchards and crops on the bayside; many creeks were channelized by the early 1900s. Since marsh and creek margins were highly sensitive archaeological locations, many sites were damaged or destroyed by these activities. The expansion of US 101, which transformed it from a narrow wagon road in 1910 to a variable to 2- to 4-lane highway by the 1950s, and to a major freeway by 1980, also affected many archaeological sites, and probably resulted in razing of many historic structures, which had clustered along the major thoroughfare.

4.4.1.2 Archaeological Inventory of the Study Area

A cultural resources inventory was conducted for this project in May 2004 by MMWD's consultant, URS Corporation. URS produced a Technical Report (2004) that documents the

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reconnaissance survey of the study area and is attached as confidential **Appendix E**. The reconnaissance survey was performed by two archaeologists who walked all open space areas within the study area and drove through the urbanized portions where pipelines are proposed to be constructed within existing streets.

The following archaeological sites were identified within the study area, as a result of an updated archaeological records search (File Number 03-738) at the Northwest Information Center of the California Historical Resources Information System for the project, and a reconnaissance survey:

- CA-MRN-65: a prehistoric archaeological deposit including a variety of artifacts
- CA-MRN-80: a prehistoric site with midden deposit, artifacts and burials
- CA-MRN-86: prehistoric site with midden deposits and burials
- CA-MRN-129: a prehistoric archaeological deposit including a variety of artifacts
- CA-MRN-520: a prehistoric archaeological deposit including a variety of artifacts
- CA-MRN-598: a prehistoric archaeological deposit including a variety of artifacts.

In addition, three possible sites are noted immediately adjacent to the study area; however, none has been confirmed to exist within the study area.

- P-25-000679: a prehistoric archaeological deposit including a variety of artifacts
- P-25-000681: a possible prehistoric archaeological chert quarry
- “Unrecorded site”: A site location is plotted on the Northwest Information Center site atlas near the study area, but no information exists as to the nature of the purported site. No indication of this site was noted during the reconnaissance survey.

4.4.1.3 Historic Architectural Inventory of the Study Area

Historic architectural features typically must be at least 50 years of age to be considered for listing in the California Register of Historical Resources (CRHR). Records searches at the Northwest Information Center (URS 2004) revealed the following previously recorded historic architectural features:

- A segment of the Northwestern Pacific Railroad is within the study area, a resource currently being evaluated for eligibility to the National Register of Historic Places as a Historic District for the concurrent Sonoma-Marin County Rapid Transit Project (GANDA, pers. comm., 2003). This resource is treated as if eligible to the CRHR within this EIR.
- The Marin Rod & Gun Club pier is located within the study area and has been evaluated as not eligible for the California or National Register of Historic Places (JRP 2004).

No other historic architectural features are within the study area.

4.4.2 Impacts and Mitigation Measures

4.4.2.1 *Standards of Significance*

For the purposes of this EIR, the proposed project would have a significant impact on cultural resources if it would:

- Cause a significant adverse change in the significance of a historical resource as defined in CEQA Guideline Section 15064.5.

The standards of significance for historical resources are based on Appendix G and Section 15064.5 of the CEQA Guidelines. As currently worded in CEQA Guidelines Section 15064.5, historical resources include resources listed in, or determined to be eligible for listing in, the CRHR; resources included in a qualifying local register (such as the City of San Rafael Register of Historic Resources); and resources that the lead agency determines to meet the criteria for listing in the CRHR. These criteria may apply to any historic built environmental feature, and to historic or prehistoric archaeological sites. Properties or sites that are eligible for inclusion in the CRHR are termed “historical resources.” Under the provisions of CEQA Guidelines Section 15064.5(a)(3) generally, a lead agency should find that a property is historically significant if it determines that it meets one or more of the criteria for listing on the CRHR, which extend to any building, structure, feature or site that:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Is associated with lives of persons important in our past;
- 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
- Has yielded, or may be likely to yield, information important in prehistory or history.

With few exceptions, to qualify as a historical resource a property must be at least 50 years old and also must retain physical integrity and integrity to its period of significance. For historic structures and buildings, significantly altering the setting, remodeling, or moving the structure may diminish or destroy its integrity. However, under some conditions, a building that has been moved or altered may still retain its historic significance. Landscaping or landscape features may in some cases contribute to the significance of a historic architectural property. Such elements would be assessed as part of the evaluation of the related historic architectural property. Archaeological sites may also qualify as historical resources under CEQA Guidelines Section 15064.5(a)(3). Archaeological sites most often are assessed relative to CRHR Criterion D (for potential to yield data important to history or prehistory). An archaeological deposit that has been extensively disturbed and archaeological artifacts found in isolation may not be eligible for listing in the CRHR, because the lack of stratigraphic context may reduce the potential for the resource to yield significant data. A resource that does not meet one of the criteria for eligibility to the CRHR is not a historical resource under CEQA, and impacts to such a property are not significant.

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4.4.2.2 *Archaeological Resources Standards of Significance*

The standards of resource significance and for significance of impacts are defined by California Public Resources Code (PRC) Section 5024.1, 14 CCR 4850, which establishes the CRHR.

For purposes of this EIR, impacts of the proposed project would be significant if they would:

- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines Section 15064.5; or
- Disturb any human remains, including those interred outside of formal cemeteries.

“Unique archaeological resources” are defined under CEQA through PRC Section 21083.2(g). A unique archaeological resource implies an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it meets one of the following criteria:

- The archaeological artifact, object, or site contains information needed to answer important scientific questions and there is a demonstrable public interest in that information;
- The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
- The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

For a resource to qualify as a unique archaeological resource, the lead agency must determine that there is a high probability that the resource meets one of these criteria without merely adding to the current body of knowledge (PRC Section 21083.2[g]). An archaeological artifact, object, or site that does not meet the above criteria is a nonunique archaeological resource (PRC Section 21083.2[h]). An impact to a nonunique archaeological resource is not a significant environmental impact under CEQA (CEQA Guidelines Section 15064.5[c][4]). If an archaeological resource qualifies as a historical resource under CRHR criteria, then the resource is treated as a historical resource for the purposes of CEQA.

Under CEQA Guidelines Section 15064.5, a project would potentially have significant impacts if it would cause substantial adverse change in a unique paleontological resource or unique geologic feature (i.e., where the project would directly or indirectly destroy a site).

Section 15064.5 of the CEQA Guidelines also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC Section 5097.98. California Health and Safety Code Section 7050.5(b) prohibits disturbance of human remains uncovered by excavation until the Coroner has made a finding relative to PRC Section 5097 procedures.

4.4.2.3 *Analytical Method*

Impacts to archaeological resources and human remains most often occur as a result of excavation or grading within the vertical or horizontal boundaries of a significant archaeological site. Archaeological resources may also receive impacts as a result of a project activity that increases erosion or increases the accessibility of a surface resource, and thus increases the potential for vandalism or illicit collection.

Significant impacts to historic built-environment features (such as buildings, canals, bridges, and in some cases, associated landscaping) may result from demolition or physical alteration of the features. Significant impacts may occur if the setting of a historic structure or feature is altered by the introduction of incompatible elements, in cases where the property retains integrity of setting and the setting of the resource contributes to its significance.

The proposed project includes specific footprints and areas of disturbance for new or redeveloped facilities and related grading and excavations. The extent of ground disturbance anticipated for the proposed project is reasonably understood, and a qualified archaeologist who meets the criteria for the Secretary of Interior's Standards reviewed the project plan in consultation with the project engineer.

In some cases, through consideration of cultural resources early in the planning process, it has been possible to redesign the proposed project to minimize or eliminate impacts on archaeological resources. Preservation in place is the preferred mitigation for impacts to archaeological sites that are historical resources (CEQA Guidelines Section 15126.4[b][3][A]).

Consistent with CEQA Guidelines, the analysis that follows is designed as a tiered process: (1) to identify cultural resources that might be affected by a proposed project; (2) to determine whether the cultural resource is significant under CEQA standards—that is, whether it qualifies as a historical resource or a unique archaeological resource; and (3) to mitigate impacts to those cultural resources that are significant under CEQA standards.

The majority of the proposed study area would be traversed by the proposed pipeline routes that would have no potential to affect, either directly or indirectly, known built environment resources and potential historic landscapes. Aside from the Marin Rod & Gun Club pier and Northwest Pacific Railroad, no potentially historic built environment resources or potential historic landscapes were identified in areas of above-ground project components including the proposed tank sites, pumping stations, plant site, and intake structure. Therefore, only structures potentially directly affected by the proposed project were subject to analysis.

Two structures or features 45 years old or older were located within the study area. One, the Marin Rod & Gun Club pier, has been determined ineligible for inclusion in the CRHR, and is therefore not considered further in this analysis (JRP 2004). The other, the Northwestern Pacific Railroad, is considered eligible to the CRHR as a Historic District. Therefore, a mitigation measure has been developed to avoid impacts to this resource.

The California State Historic Preservation Officer determined that, in some cases, recordation is not sufficient to mitigate the demolition of a historic resource (CEQA Guidelines Section 15126.4[b][2]). However, since no demolition or direct or indirect effects to historic buildings or structures are anticipated, additional measures would not be required to mitigate potential impacts.

4.4.2.4 Project Impacts and Mitigation Measures

Impact 4.4-1: Construction of the in-system pipelines could cause a substantial adverse change in the significance of known potentially unique archaeological resources (CA-MRN-80, CA-MRN-86, CA-MRN-129), as defined in CEQA Guidelines 15064.5, as the result of ground disturbance associated with project development.

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Significance:	Potentially significant
Mitigation 4.4-1(a)	Route the pipeline (Reach 1) along the easternmost edge/curb of the concrete access road adjacent to the mapped location of the intact remnant of CA-MRN-80. This would keep the project out of the demonstrated location of the deposit.
Mitigation 4.4-1(b)	Require full-time archaeological monitors to be present during the cut and removal of the concrete road within 75 feet in either direction from the plotted location of CA-MRN-80, as well as intermittent monitoring at this location during trenching at the professional discretion of a professional archaeologist. Implement Mitigation 4.4-2(b) and 4.4-2(c) if a discovery occurs.
Mitigation 4.4-1(c)	Require a full-time archaeological monitor to be present during the removal of the aggregate roadbed (beneath the pavement) within 75 feet in either direction from the plotted location of CA-MRN-86 and CA-MRN-129, as well as intermittent monitoring at this location during trenching activities at the professional discretion of a professional archaeologist. Implement Mitigation 4.4-2(b) and 4.4-2(c) if a discovery occurs.
<u>Mitigation 4.4-1(d)</u>	<u>If ground-disturbing activities are necessary within Caltrans right-of-way, a Cultural Resources Study will be required prior to obtaining an encroachment permit from Caltrans that evaluates the potential for buried unrecorded sites within the area impacted by activities. If an archaeological site is identified within Caltrans right-of-way, the following will be submitted to Caltrans as part of MMWD's application for an encroachment permit: 1) effect evaluation of potential project impacts to the archeological site; 2) mitigation plan per CEQA Guidelines 15126.4(b)(3) including implementation of Mitigation Measure 4.4-1(b)–(c); and 3) evidence of consultation with the territorial Native American group(s) for the area pursuant to Section 5097 of the California Public Resources Code. Any archaeological site identified will be avoided to the extent feasible. If a historically or culturally significant resource cannot be avoided, MMWD will implement a Data Recovery Plan approved by Caltrans.</u>
Residual Significance	Less than significant

Discussion:

While no significant impacts are anticipated as a result of this project, mitigation measures have been developed to minimize the potential for impacts at several known archaeological sites immediately adjacent to the study area. Mitigation measures set forth in this EIR establish a program of protocols for identification and treatment of archaeological and other cultural resources that may be present within the study area. These archaeological mitigation measures establish variable levels of intensity for project-associated archaeological work, based on the sensitivity of the presumed setting. To mitigate potential impacts to buried archaeological sites and human remains, this EIR establishes mitigation measures to be implemented based on

proximity to known resources, or if resources are encountered. They are intended to mitigate impacts to a less-than-significant level.

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Impact 4.4-2: Construction activities associated with the project could cause a substantial adverse change in the significance of an unknown unique archaeological resource, as defined in CEQA Guidelines Section 15064.5, as the result of an inadvertent discovery in the course of ground disturbance, associated with project development.

Significance: Potentially significant

Mitigation 4.4-2(a) Contractor crews will be required to attend an informal training session prior to the start of earth moving, regarding how to recognize archaeological sites and artifacts. Prior to disturbing the soil, contractors will be notified that they are required to watch for potential archaeological sites and artifacts and to notify MMWD immediately if any are found. In the event of a find, MMWD will implement Mitigation 4.4-2(b), below.

Mitigation 4.4-2(b) If an archaeological deposit is encountered, immediately halt all digging within 100 feet of the find, and have a professional qualified archaeologist assess the integrity and significance of the deposit. Further testing to establish the significance of impacts and/or mitigation of significant impacts would be developed in consultation between MMWD and the professional archaeologist.

Mitigation 4.4-2(c) In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps would be taken:

1. There will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
 - a. The coroner of the County must be contacted to determine that no investigation of the cause of death is required; and
 - b. If the coroner determines the remains to be Native American:
 - i. The coroner will contact the Native American Heritage Commission within 24 hours.
 - ii. The Native American Heritage Commission will identify the person or persons it believes to be the most likely descended from the deceased Native American.
 - iii. The most likely descendent may make recommendations to the landowner or the person

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responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in California PRC Section 5097.98, or

2. Where the following conditions occur, the landowner or his authorized representative will rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance:
 - a. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission;
 - b. The descendent identified fails to make a recommendation; or
 - c. The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Section 8100 of the California Health and Safety Code provides that six or more human bodies buried at one place constitute a cemetery. Section 7052 makes it a felony for anyone found guilty of mutilating or removing any human remains from a cemetery without authority of law. Section 7050.0 makes it a misdemeanor for anyone who disturbs, mutilates or removes human remains from any location other than a cemetery. This circumstance applies most often to archaeological investigations but would also apply to remains found during maintenance activities. It requires any person to stop disturbing ground in the vicinity of discovered human remains and to call the county coroner.

Residual Significance: Less than significant

Discussion:

While no significant impacts are predicted as a result of this project, mitigation measures have been developed to minimize the potential for impacts at several known archaeological sites immediately adjacent to the study area. Mitigation measures set forth in this EIR establish a program of protocols for identification and treatment of archaeological and other cultural resources that may be present within the project area. These archaeological mitigation measures establish variable levels of intensity for project-associated archaeological work, based on the sensitivity of the presumed setting. To mitigate potential impacts to buried archaeological sites and human remains, this EIR establishes mitigation measures to be implemented based on proximity to known resources, or if resources are encountered. They are intended to mitigate impacts to a less-than-significant level.

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Impact 4.4-3: Construction activities associated with the project could cause a substantial adverse change in the significance of a historic resource (the Northwestern Pacific Railroad Historic District), as defined in CEQA Guidelines Section 15064.5, as the result of ground disturbance associated with project development.

Significance: Potentially significant

Mitigation 4.4-3 Avoid all direct impacts to the Northwestern Pacific Railroad tracks, berm, or any associated contributing elements. Route the pipeline away from the tracks, and where crossings are necessary, use directional boring under the feature.

Residual Significance: Less than significant

Discussion:

The Northwestern Pacific Railroad Historic District is located in the study area, and the proposed pipelines would cross the alignment of this District. This railroad alignment was an important transportation link in the region and contributed to the development of Marin County. The boundary of the Historic District is readily visible and can be avoided by the project. Where the pipeline needs to parallel the resource, it would be aligned to avoid impacting any of the contributing elements of the Historic District. Where the pipeline must cross, the mitigation proposed required that the pipe be bored underneath the Historic District to avoid all potential impacts. Through the implementation of Mitigation Measure 4.4-3, there would be a less-than-significant impact to the Northwestern Pacific Railroad Historic District.

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Impact 4.4-4: Construction activities associated with the project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Significance: No impact

Mitigation: No mitigation required

Discussion:

According to Blake et al. (2000), two sets of fossils are recorded from bedrock exposures in the study area. The first set is made up of radiolaria, silicic plankton that are preserved in chert in the Franciscan complex. The second set is composed of members of the genus *Inoceramus*, which have been used to determine the age of the various Franciscan complex sandstones. Neither of these fossil assemblages are either especially rare or of outstanding scientific value. The Bay Mud underlying the areas of fill along the margin of San Rafael Bay also contains marine and estuarine fossils. However, these fossils are relatively abundant and have modern-day living equivalents. They are therefore neither rare nor of especial scientific value.

The area of San Francisco Bay surrounding the proposed desalination plant site and distribution infrastructure does not contain any unique geological formations, geological features, or geomorphological features that would be adversely impacted by the various project features.

