

## 2.11 Cultural Resources

Cultural resources in the Bay Area reflect centuries of human settlement in the region and document the changing character of economic, social, and spiritual activities. There are several kinds of cultural resources in the Bay Area, including historic buildings and bridges, prehistoric archaeological sites, Native American sacred sites, native plants with important cultural significance to local tribes, as well as sensitive locations where resources are likely to be identified in the future, based on our existing knowledge of historic and prehistoric settlement patterns.

This chapter evaluates the potential cultural resource impacts resulting from the implementation of the proposed Plan. Cultural resources are the material remains identified with either the prehistoric inhabitants of the area (any time prior to the arrival of the Spanish in the latter half of the 18th century) or with the historic inhabitants. The historic period begins with the arrival of the Spanish and continues up to 45 years ago, a definition that is recognized under both CEQA and NEPA guidelines. While there are procedural differences between the State and federal guidelines, both establish the conditions under which a particular resource is determined to be significant and require mitigation as part of a proposed plan or project.

### **Environmental Setting**

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#### **PHYSICAL SETTING**

This section summarizes both historic and prehistoric resources and identifies the types of geographic areas within the Planning Area that may contain cultural resources.

#### **Prehistoric Resources**

Prehistoric cultural resources are composed of Native American structures or sites of historical or archaeological interest. These may include districts, buildings, objects, landscape elements, sites, or features that reflect human occupations of the region, such as villages and burial grounds.

The moderate climate, combined with the abundant natural resources found throughout the nine-county region, has supported human habitation for several thousand years Before Present (BP). Some theories suggest that the prehistoric bay and river margins were inhabited as early as 10,000 years ago.<sup>1</sup> Rising sea levels, the formation of the San Francisco Bay, and the resulting filling of inland valleys have covered

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<sup>1</sup> EIP Associates, Rainier Avenue Cross Town Connector and U.S. 101 Interchange Project DEIR, prepared for the City of Petaluma, July 1993.

these early sites, which were most likely located along the then existing bay shore and waterways. Existing evidence indicates the presence of many village sites from at least 5,000 years BP in the region. The arrival of Native Americans into the Bay Area is associated with documented cultural resources from circa 5,500 BP.<sup>2</sup>

Six different groups of Native population, identified by their language, lived within the Bay Area, including Costanoan, Eastern Miwok, Patwin, Coast Miwok, Pomo and Wappo. These Native populations periodically increased between 5,000 BP and the arrival of the Spanish in the late 18th century. Native villages and campsites were inhabited on a temporary basis and are found in several ecological niches due to the seasonal nature of their subsistence base.

By the end of the first millennium A.D., population densities had grown to the point where less favorable environmental settings were being used for habitation. Traditional tribal territorial boundaries thus usually overlap; this is particularly the case in the South Bay. Groups competed for hunting grounds, seed and acorn gathering areas, and other areas necessary to a hunting-and-gathering culture. Remains of these early peoples indicate that main villages, seldom more than 1,000 residents, were usually established along water courses and drainages. Remains of satellite villages have been found in areas used for the procurement of food or other resources. By the late 1760s, about 300,000 Native Americans lived in California.<sup>3</sup>

## Historic Resources

Historic resources are standing structures of historic or aesthetic significance. Architectural sites dating from the Spanish Period (1529–1822) through the late 1960s are generally considered for protection if they are determined to be historically or architecturally significant. These may include missions, historic ranch lands, and structures from the Gold Rush and the region's early industrial era. Post-Depression sites may also be considered for protection if they could gain historic significance in the future. Historic resources are often associated with archaeological deposits of the same age.

The arrival of the Spanish and the development of the mission system in the latter half of the 18th century permanently disrupted the indigenous societies flourishing in the area. Native American settlements were abandoned and replaced with agricultural land, housing, and military support for the missions. The San Francisco Mission (Mission San Francisco de Asisi or Mission Dolores) and the Presidio (Yerba Buena) were founded in 1776. Both the Mission Santa Clara and the Pueblo de San José de Guadalupe were founded in 1777 in Santa Clara County.

After the Mexican revolt against Spain in 1822, California lands came under Mexican rule, and large tracts of land, including the former missions, were granted to individual owners. It was during the Mexican era that most of the historic ranch lands and associated living quarters and operational structures originate.

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<sup>2</sup> U.S. Dept. of Interior, Minerals Management Service, Pacific OCS Region. *California, Oregon, and Washington Archaeological Resource Study*, November 1990.

<sup>3</sup> San Francisco Estuary Partnership, Land Use and Population Fact Sheet, [www.sfestuary.org/userfiles/ddocs/Land\\_Use-Population.pdf](http://www.sfestuary.org/userfiles/ddocs/Land_Use-Population.pdf), accessed August 2012.

Mexico ceded control of California to the United States at the end of the Mexican-American War (1846–1848), and the discovery of gold in the late 1840s brought thousands of prospectors and settlers into California. The Bay Area became the gateway to the gold of the Sierra Nevada, with rapid growth occurring in several of the region’s fledgling cities, focusing in San Francisco as a shipping and financial center. Today the structures and sites from this Gold Rush period are often considered to be of historic significance.

An era of increased agricultural production followed the Gold Rush, with much of the region’s inland valley natural grasslands plowed for wheat, orchard, and vegetable cultivation. Construction of levees in the Sacramento/San Joaquin delta reclaimed wetland areas for field crops and orchards, and lumbering, begun during the gold rush to supply mining operations, continued to supply a growing population. The completion of the intercontinental railroad in San Francisco in 1888 assured the Bay Area’s continued prominence as an economic and population center for the West in general and for California.

In the early 1900s, the Bay Area’s economic base continued to grow and diversify, with a maritime industry developing around the Bay and manufacturing, trade, and the lumber industry aiding in the growth and development of the region. Urban areas continued to grow in accordance with transportation corridors. The rail lines of the early 1900s supported new development along their routes, with residential and commercial centers at their stops. The arrival of the automobile and roadway construction allowed population and economic centers to develop in more dispersed patterns throughout the region. Cultural resources from this manufacturing era include sites and structures associated with industrial development (i.e., railroad and maritime industries) and with prominent citizens of the time.

### **Recorded Regional Resources**

The interpretations and designations of archaeological resources in the Bay Area are documented at the Northwest Information Center (NWIC) at Sonoma State University. This information reflects the presence of known archaeological sites; known geological, soil, biological, hydrological, and topographical features; and the experience of archaeologists familiar with the field occurrences of such resources in the Bay Area.

As shown in **Table 2.11-1**, approximately 8,118 pre-historic and historic cultural sites have been recorded in the Bay Area and are listed with the California Historical Resources Information System (CHRIS), maintained at the NWIC. If one counts all historic and prehistoric recorded sites, buildings, and structures with and without trinomial numbers assigned, there are over 33,000 such sites, buildings, and structures in the Bay Area.

Of the 8,118 sites recorded in the nine-county Bay Area, there are currently 1,006 cultural resources listed on the California Register of Historic Resources, meaning that they are significant at the local, State, or national level as specified under a set of established criteria (see details in Regulatory Setting below); of those, 744 are also listed on the National Register of Historic Places. From this list, 249 resources are listed as California Historic Landmarks. Completed only once in 1976, the California Inventory of Historic Resources documents a total of about 818 historic buildings, sites, or objects and 2,340 archaeological sites. No comprehensive Bay Area historic or archaeological surveys have been conducted more recently. The greatest concentration of listed historic resources in the Bay Area occurs in San Francisco, with 181 sites on the National and California registers. Alameda County has the second highest number of Register-listed historic resources, at 147.

**TABLE 2.11-1: RECORDED ARCHAEOLOGICAL AND HISTORICAL SITES IN THE BAY AREA**

Source of Record	County								
	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma
Recorded Prehistoric and Historic Sites <sup>1</sup>	514	842	809	1,166	140	403	925	352	2,967
Total Recorded Resources (including buildings) <sup>2</sup>	11,242	3,060	2,775	1,517	4,873	2,252	2,599	747	4,304
Individually Listed Resources on the National Register of Historic Places <b>and</b> the California Register of Historic Resources <sup>3</sup>	147 BSO 0 AS	39 BSO 0 AS	41 BSO 5 AS	78 BSO 0 AS	181 BSO 5 AS	51 BSO 1 AS	104 BSO 2 AS	22 BSO 0 AS	64 BSO 4 AS
Individually Listed Resources <b>Only</b> on the California Register of Historic Resources	302 BSO 12 AS	18 BSO 41 AS	25 BSO 4 AS	18 BSO 11 AS	242 BSO 2 AS	32 BSO 0 AS	121 BSO 31 AS	66 BSO 5 AS	59 BSO 17 AS
California Historical Landmarks <sup>4</sup>	37	15	14	17	48	34	43	14	27
California Inventory (1976) <sup>5</sup>	221 BSO 344 AS	108 BSO 352 AS	30 BSO 413 AS	31 BSO 328 AS	141 BSO 26 AS	75 BSO 152 AS	149 BSO 61 AS	30 BSO 264 AS	33 BSO 400 AS
Historic Bridges Listed on the Caltrans Local Bridge Survey <sup>6</sup>	175	187	123	93	78	120	239	115	223

**Abbreviations:** BSO (Building, Site, or Object); AS (Archaeological Site).

**Notes:**

1. Northwest Information Center Database, August 2012.
2. Northwest Information Center Database, August 2012; number of all recorded sites including prehistoric and historic archaeological sites with and without trinomials, as well as recorded historic-period buildings and structures.
3. State Office of Historic Preservation’s Quarterly Historic Property Directory, April 2012. Not included here are resources that have been listed as *contributors* to an Archaeological or Historic District, or resources that have been determined to be *eligible* for listing on the National Register or the California Register of Historical Resources.
4. State Office of Historic Preservation’s Quarterly Historic Property Directory, August 2012. BSO and AS are reported together.
5. Listings on the California Inventory of Historic Resources. Please note this inventory was done one time in 1976.
6. Caltrans Local Bridge Survey, Update 2005, computer database, query only pre-1960 bridges. Please note, a previous “Category 3” used to compile prior RTP EIR listings no longer exists in this survey, with the result that this update may show lower totals compared to previous surveys reported in other EIRs.

Source: Northwest Information Center, Sonoma State University, 2012.

It is noted that the overall number of pre-historic and historic recorded cultural sites has decreased since the Transportation 2035 Plan was adopted in 2008. However, according to NWIC, this is not a result of cultural resources having been destroyed, but rather due to the fact that NWIC's system for assigning resource identification numbers has changed. As a result, certain resources may have been grouped inappropriately in the past, thus leading to over-counting.<sup>4</sup>

### **Locations of Sensitivity**

Dense concentrations of Native American archaeological sites occur along the historic margins of San Francisco and San Pablo Bays. In addition, archaeological sites have also been identified in the following environmental settings in all Bay Area counties: near sources of water, such as vernal pools and springs; along ridgetops and on midslope terraces; and at the base of hills and on alluvial flats.

Native American archaeological sites have also been identified in the inland valleys of all Bay Area counties. Remains associated with a Native American archaeological site may include chert or obsidian flakes, projective points, mortars and pestles, and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials.

Dense concentrations of historic resources are often found in large urban areas and smaller cities that experienced growth and development during the historic period. Historic resources are also found in rural settings where homesteads, ranches, or farms were once present. Historic remains may include stone or adobe foundations or walls, structures and remains with square nails, and refuse deposits often in old wells and privies.

## **REGULATORY SETTING**

### **Federal Regulations**

#### ***The National Historic Preservation Act***

The National Historic Preservation Act (NHPA) is the most prominent federal law dealing with historic preservation. The NHPA established guidelines to “preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice.” The NHPA includes regulations specifically for federal land-holding agencies, but also includes regulations (Section 106) which pertain to all projects that are funded, permitted, or approved by any federal agency and which have the potential to affect cultural resources. All projects that are subject to the National Environmental Policy Act (NEPA) are also subject to compliance with Section 106 of the NHPA. Furthermore, all projects that are carried out by Caltrans are also subject to Section 106. At the federal level, the Office of Historic Preservation (OHP) carries out reviews under Section 106 of the NHPA.

#### ***National Register of Historic Places***

Additionally, the NHPA authorizes the Secretary of the Interior to establish a National Register of Historic Places (National Register), an inventory of districts, sites, buildings, structures, and objects significant on a national, state, or local level in American history, architecture, archeology, engineering,

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<sup>4</sup> Much, Bryan. Northwest Information Center, email correspondence, 28 August 2012.

and culture. The National Register is maintained by the National Park Service, the Advisory Council on Historic Preservation, State Historic Preservation Office, and grants-in-aid programs.

## **State Regulations**

### ***Office of Historic Preservation***

The mission of the Office of Historic Preservation (OHP) and the State Historical Resources Commission (SHRC) is to preserve and enhance California's irreplaceable historic heritage as a matter of public interest so that its vital legacy of cultural, educational, recreational, aesthetic, economic, social, and environmental benefits will be maintained and enriched for present and future generations.<sup>5</sup> California Public Resources Code 5024 requires consultation with the State Historic Preservation Officer (SHPO) when a project may impact historical resources located on State-owned land.

### ***California Register of Historic Resources***

The SHPO also maintains the California Register of Historic Resources (California Register). Historic properties listed, or formally designated for eligibility to be listed, on the National Register are automatically listed on the California Register (PRC Section 5024.1). State Landmarks and Points of Interest are also automatically listed. The California Register can also include properties designated under local preservation ordinances or identified through local historic resource surveys.

For a historic resource to be eligible for listing on the California Register, it must be significant at the local, State, or national level under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. It is associated with the lives of persons important to local, California, or national history;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation (California Public Resources Code).

### ***California Historical Resources Information System***

The CHRIS is a statewide system for managing information on the full range of historical resources identified in California. CHRIS is a cooperative partnership between the citizens of California, historic preservation professionals, twelve Information Centers, and various agencies. This system bears the following responsibilities: integrate newly recorded sites and information on known resources into the California Historical Resources Inventory; furnish information on known resources and surveys to governments, institutions, and individuals who have a justifiable need to know; and supply a list of consultants who are qualified to do work within their area.

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<sup>5</sup> Office of Historic Preservation website: [http://ohp.parks.ca.gov/?page\\_id=1066](http://ohp.parks.ca.gov/?page_id=1066)

## **California Environmental Quality Act**

### **21083.2: Archaeological Resources**

CEQA directs the lead agency on any project undertaken, assisted, or permitted by the State to include in its environmental impact report for the project a determination of the project's effect on unique archeological resources. Public Resources Code section 21083.2 defines unique archeological resource; enables a lead agency to require an applicant to make reasonable effort to preserve or mitigate impacts to any affected unique archeological resource; sets requirements for the applicant to provide payment to cover costs of mitigation; and restricts excavation as a mitigation measure.

### **21084.1: Historic Resources**

CEQA establishes that an adverse effect on an historical resource qualifies as a significant effect on the environment; and defines historical resource.

## **CEQA Guidelines**

### **Resource Significance**

Section 15064.5 of CEQA guidelines defines three ways that a property can qualify as a significant historical resource for the purposes of CEQA review:

1. If the resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR);
2. If the resource is included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code, or is identified as significant in a historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless a preponderance of evidence demonstrates that it is not historically or culturally significant; or
3. If the lead agency determines the resource to be significant as supported by substantial evidence (California Code of Regulations, Title 14, Division 6, Chapter 3, section 15064.5).

In addition to determining the significance and eligibility of any identified historical resource under CEQA and the California Register, historic properties must be evaluated under the criteria for the National Register should federal funding or permitting become involved in any undertaking subject to this document.

### **Mitigation of Cultural Resources Impacts**

CEQA Guidelines Section 15126.4 states that "public agencies should, whenever feasible, seek to avoid damaging effects on any historical resources of an archaeological nature." The Guidelines further state that preservation-in-place is the preferred approach to mitigate archaeological resource impacts. However, according to Section 15126.4, if data recovery through excavation is "the only feasible mitigation," then a "data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resources, shall be prepared and adopted prior to any excavation being undertaken." Data recovery is *not* required for a resource of an archaeological nature if "the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource." The section further states that its provisions apply to those archaeological resources that also qualify as historic resources.

### ***Paleontological Resources***

Paleontological resources are afforded protection by 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 “directly or indirectly destroy a unique paleontological resource or site or unique geological feature.” 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 sets the penalties for the damage or removal of paleontological resources.

### ***Native American Heritage Act***

The Native American Heritage Act (NAHA) of 1976 established the Native American Heritage Commission (NAHC) and protects Native American religious values on State property (see California Public Resources Code 5097.9).

### ***Public Notice to California Native American Indian Tribes***

Government Code, Section 65092 includes California Native American tribes that are on the contact list maintained by the Native American Heritage Commission in the definition of “person” to whom notice of public hearings shall be sent by local governments.

### ***Tribal Consultation Guidelines***

Passed in 2004, Senate Bill (SB) 18 (Burton, D-San Francisco), now Government Code Section 65351 and 65352, establishes a procedure to help tribes and jurisdictions define tribal cultural resources and sacred areas more clearly and incorporate protection of these places earlier into local general plan and specific plan processes. The SB 18 process mirrors the federal 106 review process used by archaeologists as part of the environmental review conducted under NEPA (36 CFR Part 800.16) While not a component of CEQA review per se, the lead agency is required to request consultation with responsible and trustee agencies, such as NAHC and neighboring tribes, during the initial study and EIR process (PRC 21080.3, 21080.4). Tribal consultation conducted for this EIR is described in the Impact Analysis, under Method of Analysis.

### ***Disposition of Human Remains***

Health and Safety Code Section 7050.5 states that when an initial study identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC as provided in Public Resources Code 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials. Furthermore, Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

### ***Native American Graves Protection and Repatriation Act***

Health and Safety Code Section 8010-8011 establishes a State repatriation policy intent that is consistent with and facilitates implementation of the federal Native American Graves Protection and Repatriation Act. The Act strives to ensure that all California Indian human remains and cultural items are treated with

dignity and respect. It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. It also states the intent for the State to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

## **Local Regulations**

### ***Historic Preservation Ordinances***

In addition to national and State historic preservation legislation, many Bay Area counties and cities have adopted optional historic preservation general plan elements<sup>6</sup> or enacted local ordinances that recognize and preserve historic sites. At least 19 Bay Area cities participate in the Certified Local Government Program (CLG) through the OHP. The CLG program is a partnership among local governments, the OHP, and the National Park Service (NPS), which is responsible for administering the National Historic Preservation Program. Participating cities include: Alameda, Benicia, Berkeley, Campbell, Danville, Los Altos, Los Gatos, Napa, Oakland, Palo Alto, Redwood City, Richmond, San Francisco, San José, Santa Clara, Saratoga, Sausalito, Sunnyvale, and Vallejo.

## **Impact Analysis**

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### **SIGNIFICANCE CRITERIA**

Implementation of the proposed Plan would have a potentially significant adverse impact on cultural resources in the Bay Area if it would:

- Criterion 1:** Cause a substantial adverse change in the significance of a historic resource, defined as physical demolition, destruction, relocation or alteration of the resource or its immediate surroundings such that the significance of the historic resource would be materially impaired (Guidelines Section 15064.5).
- Criterion 2:** Cause a substantial adverse change in the significance of a unique archaeological resource.
- Criterion 3:** Destroy, directly or indirectly, a unique paleontological resource or site or unique geologic feature.
- Criterion 4:** Disturb any human remains, including those interred outside of formal cemeteries.

### **METHOD OF ANALYSIS**

The cultural resources analysis identifies the potential impacts of the transportation and land use program on archaeological, historical, and other cultural resources within the Bay Area based on anticipated changes to the existing condition. The analysis focuses on where land use changes are most evident (e.g.,

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<sup>6</sup> For a complete list of California communities with optional historic preservation general plan elements, the State Office of Planning and Research maintains and updates an annual Book of Lists: [www.opr.ca.gov/s\\_publications.php](http://www.opr.ca.gov/s_publications.php)

non-urbanized areas to experience urbanization), or where transportation improvements would require ground disturbing activities that may threaten known or unknown archaeological or Native American cultural artifacts.

The methodology related to assessment of land use development and transportation project-related impacts recognizes that important cultural resources may be encountered during ground-disturbing construction work on land use development and transportation projects under the proposed Plan that involve physical construction. It also recognizes that projects associated with the operation and maintenance of the transportation system, such as signalization, equipment replacement, and pavement maintenance, would not directly affect cultural resources. Since the specific locations of some cultural resources are not mapped, and since the extent of ground disturbance associated with various land use development and transportation projects under the proposed Plan is unknown at this time, it is not possible to assess specific cultural resource impacts based on the location of these projects. For the same reasons, the analysis does not distinguish between regulatory conditions for privately- and publicly-owned land. Accordingly, no project-specific reviews or field studies are undertaken for this program EIR. The analysis is based on a review of the type and location of projects listed in the proposed Plan, and their potential to disturb both known and unknown cultural resources. Additionally, land use analysis assesses in a generalized way potential impacts on historic resources in existing urban areas likely to experience change as a result of destruction of a historic resource or construction of incompatible, adjacent development.

The initial step in addressing cultural resources involved contacting the appropriate CHRIS Information Center to conduct a record search. The record search summarized numbers of previously recorded resources and studies within the study area, not all of which are eligible for listing on the California Register. As shown in **Table 2.11-1**, the California Register is a subset of the total number of recorded sites, due to the higher threshold of eligibility.

The Notice of Preparation (NOP) of this EIR was distributed to the federally recognized tribes in the Bay Area. In a letter in response to the NOP, the California Valley Miwok Tribe requested notification of projects proposed within Alameda, Alpine, Calaveras, Contra Costa; Fresno, Madera, Merced, San Joaquin, Solano, and Stanislaus County. A more detailed description of the scoping process is found in *Chapter 1.1: Introduction and Study Approach*, and a record of the scoping comments are in Appendix B.

In addition, MTC and ABAG, in partnership with Caltrans District 4, held two tribal consultation meetings, on June 9, 2011, and March 20, 2012, at the National Indian Justice Center to discuss the transportation investment strategy and the Proposed Plan land use distribution. A third tribal consultation meeting will take place while the Draft Plan Bay Area and Draft EIR documents are in their public review periods.

## **SUMMARY OF IMPACTS**

While project-specific studies will be necessary to determine the actual potential for significant cultural resource impacts resulting from the implementation of new development and transportation improvements under the proposed Plan, some general impacts can be assumed based on the type and location of future development anticipated in the proposed Plan.

Implementation of the proposed Plan could result in both short-term and long-term impacts related to cultural resources due to disturbance of known and unknown resources, artifacts, burial grounds, etc. during project construction. All counties in the Bay Area have the potential to yield undiscovered resources and, since most of the Bay Area has not been systematically surveyed for cultural resources, it is not possible within the context of this EIR to determine what the direct impacts would be in specific project areas, given both the need for site-specific surveys and project-specific details.

In general, projects that include ground-disturbing activities, such as grading, road widening, and excavation, have the potential to impact archaeological and paleontological resources and human burials. These projects may also impact historic resources if buildings or landmark structures are disturbed. Projects that include the introduction of new visual elements, such as new structures or highway segments, or involve visual alterations, have the potential to indirectly impact historic architectural resources by creating visual incompatibility in the surrounding environment. If these projects involve ground-disturbance, impacts on archaeological sites may also occur. Transportation projects that are limited to new or altered services but do not include ground-disturbing activities and do not include significant visual changes are unlikely to cause cultural resource impacts.

## **IMPACTS AND MITIGATION MEASURES**

### **Impact**

**2.11-1 The proposed Plan could have the potential to cause a substantial adverse change in the significance of a historic resource such that the significance of the resource would be materially impaired.**

### ***Impacts of Land Use and Transportation Projects***

The effects of development and transportation projects would be similar, and therefore the discussion of their impacts is combined below. Historic resources are by nature specific to their local context, and as such, impacts on these resources resulting from the proposed Plan would occur at the local level. Therefore, regional effects are not addressed separately as they are assumed to be the same.

Projects located in areas with known historical sites, or located in communities with established historic preservation programs, or involving activities that would introduce new visual elements or disturb the existing terrain have the potential to result in significant historic resource impacts. These projects could potentially reduce the aesthetic and physical integrity of historic districts and buildings. A higher incidence of conflict with historical sites is expected to occur in urban areas settled or developed more than 45 years ago. Projects located in or traversing rural lands could also have significant impacts related to sites that are singular examples of a historical setting or structures whose historic value and significance have not been previously evaluated and recognized.

Identification of the degree and extent of impact will depend upon project-specific analysis that includes a determination of the value—i.e., the eligibility for local, State, or national recognition—of any historic resource recognized within a proposed alignment or project area. However, given the magnitude and location of new development and transportation improvements involving construction activities in the proposed Plan, it is possible that significant impacts on historic resources could occur. Examples of potential impacts resulting from development or transportation projects include:

- Damage to or destruction of a structure or property that is a designated historic resource, eligible for listing as a historic resource, or as yet unrecognized historic resource.
- Infill development that is visually incompatible with a designated historic district.
- Roadway improvements that substantially alter the character of a designated historic structure or district.

Because proposed individual development projects have the potential to adversely affect historical resources on a regional and localized level, these impacts are considered potentially significant (PS). Mitigation measure 2.11(a) is described below.

### **Mitigation Measure**

Implementing agencies and/or project sponsors shall consider implementation of mitigations measures including but not limited to those identified below.

**2.11(a)** Mitigation measures that shall be considered by implementing agencies and/or project sponsors where feasible based on project-and site-specific considerations include, but are not limited to:

- Realign or redesign projects to avoid impacts on known historic resources where possible.
- Requiring an assessment by a qualified professional of structures greater than 45 years in age within the area of potential effect to determine their eligibility for recognition under State, federal, or local historic preservation criteria.
- When a project has been identified as potentially affecting a historic resource, a historical resources inventory should be conducted by a qualified architectural historian. The study should comply with CEQA Guidelines section 15064.5(b), and, if federal funding or permits are required, with section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. § 470 et seq.). Study recommendations shall be implemented.
- If avoidance of a significant architectural/built environment resource is not feasible, additional mitigation options include, but are not limited to, specific design plans for historic districts, or plans for alteration or adaptive re-use of a historical resource that follows the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitation, Restoring, and Reconstructing Historic Buildings*.
- Complying with existing local regulations and policies that exceed or reasonably replace any of the above measures that protect historic resources.

### **Significance After Mitigation**

Projects taking advantage of CEQA Streamlining provisions of SB 375 (Public Resources sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, as feasible, to address site-specific conditions. To the extent that an individual project adopts and implements all feasible mitigation measures described above, the impact would be less than significant with mitigation (LS-M).

MTC/ABAG cannot require local implementing agencies to adopt the above mitigation measures, and it is ultimately the responsibility of a lead agency to determine and adopt mitigation. Therefore it cannot be

ensured that this mitigation measure would be implemented in all cases, and this impact remains significant and unavoidable (SU).

### **Impact**

**2.11-2 The proposed Plan could have the potential to cause a substantial adverse change in the significance of a unique archaeological resource.**

### ***Impacts of Land Use and Transportation Projects***

#### ***Regional and Localized Effects***

Archaeological artifacts are by nature specific to their local context, and as such, impacts on these resources resulting from the proposed Plan would occur at the local level. Therefore, regional effects are not addressed separately as they are assumed to be the same. New development and transportation improvements could result in archaeological impacts if construction activities include the disturbance of the native terrain. Projects involving excavation, grading or soil removal in previously undisturbed areas have the greatest likelihood to encounter significant archaeological resources. Likewise, the establishment of staging areas, temporary roads, and any other temporary facilities necessary for construction activities has the potential to impact these cultural resources.

Much of the developable flat land in the Bay Area has already been converted to urban use, so development opportunities include redevelopment of existing urban land as well as some hillside sites and rural land. Both rural land conversion and urban infill have the potential to disturb cultural resources, though impacts in rural areas are more likely. Development anticipated as part of the proposed Plan will convert approximately 7,500 acres from undeveloped to urbanized land over the course of the planning period. **Table 2.11-2** indicates that the proportion of total land in the region that will be developed for urban uses is only expected to increase from 17.8 to 17.9 percent.

**TABLE 2.11-2: URBANIZED LAND BY COUNTY**

<i>County</i>	<i>Land Acres</i>	<i>2010 Urban Footprint<sup>1</sup></i>	<i>2010 Percent Urban Footprint</i>	<i>Increase in Urban Footprint<sup>2</sup></i>	<i>2040 Percent Urban Footprint</i>
Alameda	470,867	146,069	31.0%	1,425	31.3%
Contra Costa	458,757	151,998	33.1%	1,979	33.6%
Marin	331,715	42,230	12.7%	311	12.8%
Napa	484,610	23,551	4.9%	162	4.9%
San Francisco	29,975	23,967	80.0%	187	80.6%
San Mateo	287,596	72,319	25.1%	643	25.4%
Santa Clara	826,500	191,402	23.2%	779	23.3%
Solano	528,208	59,436	11.3%	1,198	11.5%
Sonoma	1,009,967	75,210	7.4%	863	7.5%
<b>Total</b>	<b>4,428,195</b>	<b>786,182</b>	<b>17.8%</b>	<b>7,547</b>	<b>17.9%</b>

1. Data for San Francisco is from 2008.

2. Future urbanized footprint is based on modeled future development of over eight people per acre and/or 10 jobs per acre.

**Note:** numbers may not sum due to independent rounding.

Source: MTC, 2013; Urban and Built Up Land, Farmland Mapping and Monitoring Program, Department of Conservation; 2010 Census TIGER/Line Shapefiles.

Projects in locations of sensitivity, such as historic Bay margins, ridgetops, midslope terraces, hill bases, alluvial flats and inland valleys, are more likely to encounter cultural resources. Most transportation corridors follow valleys and drainage areas which often correspond with historic settlement patterns. Infill development and transportation projects involving improvements within existing urban areas, within existing transportation corridors, or to existing infrastructure or operations are less likely to impact archaeological resources since these projects are located in already-disturbed areas that may have been subject to previous cultural resource surveys.

The degree and extent of impacts will depend upon project locations. Project-specific analysis will be required to determine the precise area of impact and the value—i.e., the eligibility for local, State, or national recognition—of any archaeological resource identified within a proposed alignment or project area. Furthermore, all projects undertaken by Caltrans must abide by extensive procedures and policies, outlined in the *Caltrans Environmental Handbook, Volume 2*, which dictate the nature and extent of cultural resource protections consistent with federal law.

Because proposed individual development projects have the potential to adversely affect archaeological resources on a regional and localized level, these impacts are considered potentially significant (PS). Mitigation measure 2.11(b) is described below.

### **Mitigation Measures**

Implementing agencies and/or project sponsors shall consider implementation of mitigations measures including but not limited to those identified below.

**2.11(b)** Mitigation measures that shall be considered by implementing agencies and/or project sponsors where feasible based on project-and site-specific considerations include, but are not limited to:

- Pursuant to Government Code Sections 65351 and 65352, in-person consultation shall be conducted with Native American tribes and individuals with cultural affiliations where the project is proposed to determine the potential for, or existence of, cultural resources, including cemeteries and sacred places, prior to project design and implementation stages.
- Prior to construction activities, project sponsors shall retain a qualified archaeologist to conduct a record search at the appropriate Information Center of the California Archaeological Inventory to determine whether the project area has been previously surveyed and whether resources were identified. When recommended by the Information Center, project sponsors shall retain a qualified archaeologist to conduct archaeological surveys prior to construction activities.
- Preparation of a research design and testing plan should be developed in advance of implementation of the construction project, in order to efficiently facilitate the avoidance of cultural sites throughout the development process.
- If record searches and field surveys indicate that the project is located in an area rich with archaeological resources, project sponsors should retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property.
- Written assessments should be prepared by a qualified tribal representative of sites or corridors with no identified cultural resources but which still have a moderate to high potential for containing tribal cultural resources.
- Upon “late discovery” of prehistoric archaeological resources during construction, project sponsors shall consult with the Native American tribe as well as with the “Most-Likely-Descendant” as designated by the Native American Heritage Commission pursuant to PRC 5097.
- Preservation in place is the preferred manner of mitigating impacts on archeological sites because it maintains the relationship between artifacts and the archeological context, and it may also avoid conflict with religious or cultural values of groups associated with the site. This may be achieved through incorporation within parks, green-space, or other open space by re-designing project using open space or undeveloped lands. This may also be achieved by following procedures for capping the site underneath a paved area. When avoiding and preserving in place are infeasible based on project- and site-specific considerations, a data recovery plan may be prepared according to CEQA Section 15126.4. A data recovery plan consists of: the documentation and removal of the archeological deposit from a project site in a manner consistent with professional (and regulatory) standards; the subsequent inventorying, cataloguing, analysis, identification, dating, and interpretation of the artifacts; and the production of a report of findings.

- Complying with existing local regulations and policies that exceed or reasonably replace any of the above measures that protect archaeological resources.

### **Significance After Mitigation**

Projects taking advantage of CEQA Streamlining provisions of SB 375 (Public Resources sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, as feasible, to address site-specific conditions. To the extent that an individual project adopts and implements all feasible mitigation measures described above, the impact would be less than significant with mitigation (LS-M).

MTC/ABAG cannot require local implementing agencies to adopt the above mitigation measures, and it is ultimately the responsibility of a lead agency to determine and adopt mitigation. Therefore it cannot be ensured that this mitigation measure would be implemented in all cases, and this impact remains significant and unavoidable (SU).

### **Impact**

**2.11-3 The proposed Plan could have the potential to destroy, directly or indirectly, a unique paleontological resource or site or unique geologic feature.**

### **Impacts of Land Use and Transportation Projects**

Paleontological and geological resources are by nature specific to their local context, and as such, impacts on these resources resulting from the proposed Plan would occur at the local level. Therefore, regional effects are not addressed separately as they are assumed to be the same. In general, potential impacts on paleontological or geologic resources would be similar to those discussed for archaeological resource impacts under Impact 2.11-2. Projects involving excavation, grading or soil removal in previously undisturbed areas have the greatest likelihood to encounter these resources.

The degree and extent of impacts will depend upon project locations, and as such, project-specific analysis will be required to determine the precise area of impact and the value of any paleontological or geologic resource identified within a proposed alignment or project area. As noted under 2.11-2, all projects undertaken by Caltrans must abide by procedures and policies outlined in the *Caltrans Environmental Handbook, Volume 2*.

Because proposed individual development projects have the potential to adversely affect paleontological and geologic resources on a regional and localized level, these impacts are considered potentially significant (PS). Mitigation measure 2.11(c) is described below.

### **Mitigation Measures**

Implementing agencies and/or project sponsors shall consider implementation of mitigations measures including but not limited to those identified below.

**2.11(c)** Mitigation measures that shall be considered by implementing agencies and/or project sponsors where feasible based on project-and site-specific considerations include, but are not limited to:

- Prior to construction activities, project sponsors should retain a qualified paleontologist to conduct a record search using an appropriate database, such as the UC Berkeley Museum of Paleontology to determine whether the project area has been previously surveyed and whether resources were identified. As warranted, project sponsors should retain a qualified paleontologist to conduct paleontological surveys prior to construction activities.
- Preparation of a research design and testing plan should be developed in advance of implementation of the construction project, in order to efficiently facilitate the avoidance of cultural sites throughout the development process.
- If record searches and field surveys indicate that the project is located in an area rich with paleontological, and/or geological resources, project sponsors should retain a qualified paleontologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property.
- Complying with existing local regulations and policies that exceed or reasonably replace any of the above measures that protect paleontological or geologic resources.

### ***Significance After Mitigation***

Projects taking advantage of CEQA Streamlining provisions of SB 375 (Public Resources sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, as feasible, to address site-specific conditions. To the extent that an individual project adopts and implements all feasible mitigation measures described above, the impact would be less than significant with mitigation (LS-M).

MTC/ABAG cannot require local implementing agencies to adopt the above mitigation measures, and it is ultimately the responsibility of a lead agency to determine and adopt mitigation. Therefore it cannot be ensured that this mitigation measure would be implemented in all cases, and this impact remains significant and unavoidable (SU).

### **Impact**

**2.11-4 The proposed Plan could have the potential to disturb human remains, including those interred outside formal cemeteries.**

### ***Impacts of Land Use and Transportation Projects***

Ground-disturbing effects of development and transportation projects would be similar, and therefore the discussion of their impacts is combined below. Impacts to human remains are by nature specific to their local context, and as such, impacts on these resources resulting from the proposed Plan would occur at the local level. Therefore, regional effects are not addressed separately as they are assumed to be the same. In general, potential impacts on human remains would be similar to those discussed for archaeological resource impacts discussed under Impact 2.11-2. New development and transportation improvements involving construction activities that would disturb native terrain, including excavation, grading, or soil removal, would have the greatest likelihood to encounter human remains. These impacts are considered potentially significant (PS). Mitigation measure 2.11(d) is described below.

### **Mitigation Measures**

Implementing agencies and/or project sponsors shall consider implementation of mitigations measures including but not limited to those identified below.

**2.11(d)** Mitigation measures that shall be considered by implementing agencies and/or project sponsors where feasible based on project-and site-specific considerations include, but are not limited to:

- Under Section 7050.5 of the California Health and Safety Code, as part of project oversight of individual projects, project sponsors can and should, in the event of discovery or recognition of any human remains during construction or excavation activities associated with the project, in any location other than a dedicated cemetery, cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered has been informed and has determined that no investigation of the cause of death is required.
- Under California Public Resources Code 5097.98, if any discovered remains are of Native American origin:
  - The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner should make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods. This may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains; or
  - If the Native American Heritage Commission is unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified by the commission, the landowner or their authorized representative shall obtain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance where the following conditions occur:
    - The Native American Heritage Commission is unable to identify a descendent;
    - The descendant identified fails to make a recommendation; or
    - The landowner or their authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

For the purposes of this mitigation, less than significant means consistent with federal, State, and local regulations and laws related to human remains.

### **Significance After Mitigation**

To the extent that an individual project adopts all feasible mitigation measures described above, the impact would be less than significant (LS). Projects taking advantage of CEQA Streamlining provisions of SB 375 (Public Resources Code sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measure(s) described above to address site-specific conditions. Further, because the measure is tied to

existing regulations that are law and binding on responsible agencies and project sponsors, it is reasonable to determine that they would be implemented. Therefore, with the incorporation of mitigation measure 2.11(d), the impact is found to be less than significant with mitigation (LS-M).

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