

3.7 Cultural Resources

3.7.1 Approach to Analysis

The assessment of project impacts on cultural resources under CEQA (CEQA Guidelines, Section 15064.5) is a two-step process: (1) determine whether the project site contains cultural resources (defined as prehistoric archaeological, historic archaeological, or historic architectural resources¹). If the site is found to contain a cultural resource, then (2) determine whether the project would cause a substantial adverse change to the resource. The setting discussion describes the existing properties at and in the vicinity of the WTTIP project sites and assesses whether the properties are cultural resources for the purposes of CEQA. The impact discussion reviews the criteria for determining significant impacts on cultural resources and assesses the impact of the project on cultural resources. The methodology used in the cultural resources analysis included a literature review and field reconnaissance by qualified cultural resource personnel.

3.7.2 Setting

This section includes information on the prehistoric and historic development in the vicinity of WTTIP project sites. An analysis was performed to determine whether properties in the vicinity of WTTIP project sites can be considered cultural resources for the purposes of CEQA.² National, state, and local historic preservation listings and surveys, as well as listings maintained by EBMUD, are summarized in this section.

Prehistoric and Ethnographic Background

The natural marshland biotic communities along the edges of bays and channels were the principal source for subsistence and other activities from the middle Holocene until the contact period in the San Francisco Bay region. Efforts to reconstruct prehistoric times into broad cultural stages (e.g., Early Period, Middle Period) allows researchers to describe a wide number of sites with similar cultural patterns and components during a given period of time, thereby creating a regional chronology.

Many of the original surveys of archaeological sites in the Bay region were conducted between 1906 and 1908 by N.C. Nelson and yielded the initial documentation of nearly 425 “earth mounds and shell heaps” along the littoral zone of the Bay (Nelson, 1909). From these beginnings, the most notable sites in the Bay region were excavated, such as the Emeryville shellmound (Ala-309), the Ellis Landing Site (CCo-295) in Richmond, and the Fernandez Site (CCo-259) in Rodeo Valley (Morrato, 1984). These dense midden sites are vast accumulations of domestic debris, which have been carbon-14 dated to be between 2,100 and 2,500 years old, but other evidence

¹ For the purposes of this report, the term “historic architectural resources” is synonymous with “historical resources” (CEQA Guidelines, Section 15064.5).

² See CEQA Guidelines Section 21084.1.

from around the Bay suggests that human occupation in the region is of greater antiquity, or ± 5000 B.C. (Jones, 1992). While many interpretations exist as to the function of the shellmounds, much of the evidence suggests that they served as sociopolitical landmarks on the cultural landscape and perhaps as ceremonial features as well.

For the San Francisco Bay Area, the Early Period, or the so-called “Berkeley Pattern,” is characterized by almost exclusive use of cobble mortars and pestles, which is often associated with a heavy reliance on acorns in the economy (Moratto, 1984). This unusually intensive reliance on one foodstuff indicates that, by around 1000 BP, a shift away from the earlier reliance on a broad spectrum of dietary sources to supply demand was needed. The Late Pleistocene/Early Holocene profusion of food availability along lakeshores and estuaries likely led to an overexploitation of the resources, which initially resulted in population increases but may also have forced inhabitants to rely on a readily available yet lower-ranked resource like acorns or seeds (Jones, 1991). Nevertheless, given the burgeoning size of Early Period settlements, the populations were probably denser and more sedentary, yet continued to exploit a diverse resource base—from woodland, grassland, and marshland to bayshore resources throughout the San Francisco Bay Area (King, 1974). Many of the Berkeley traits diffused throughout the region and spread to the interior areas of central California during this time period.

The population increases and larger, more complex settlements that began in the late-Early Period typify the Middle Period (circa 500 BC–AD 1000) (Arnold et al., 2004). The sociopolitical landscape also appears to become more elaborate, with clear differentiations in wealth and evidence of personal aggrandizement. During the Late Period (circa AD 1000–1700), however, new sites start to decline in the record, and the large shellmounds were abandoned. The Late Period also showed population declines and concomitant changes in resource use—likely due to human-caused depletions in some terrestrial food sources during the Middle Period (Broughton, 1994).

Interior Contra Costa County

While the archaeological record for the immediate Bay Area clearly focuses on bayshore sites, the interior valleys and watersheds exhibit a wide range of Early to Late Period sites and traditions (Moratto, 1984). In particular, the Stone Valley site, CA-CCo-308, located in the San Ramon Valley, represented five archaeological sites that collectively reflected at least seven components spanning about 4,000 years (Fredrickson, 1993). The types and patterns of artifacts found at CA-CCo-308 indicate relationships with both the early Central Valley (“Windmill” tradition) and Berkeley Pattern of the Bay Area; mortars and pestles dominate the lower levels of these sites, suggesting that the acorn was of greater significance in the interior valleys, and much earlier than it was in the bayshore region.

Ethnographic Setting

Prior to Euro-American contact, this area of present-day Contra Costa County was occupied by the Ohlone (also known by their linguistic group, Costanoan³). Politically, the Costanoan were organized into groups called tribelets. A tribelet constituted a sovereign entity that held a defined territory and exercised control over its resources. It was also a unit of linguistic and ethnic differentiation.

The Ohlone economy was based on fishing, gathering, and hunting, with the land and waters providing a diversity of resources, including acorns, various seeds, salmon, deer, rabbits, insects, and quail. The acorn was the most important dietary staple of the Costanoan, and the acorns were ground to produce a meal that was leached to remove the bitter tannin. The Costanoan crafted tule balsa, basketry, stone tools such as mortars and metates (a mortar-like flat bowl used for grinding grain), and household utensils. The Costanoan, like many other Native American groups in the Bay Area, likely lived in conical tule thatch houses.

In 1770, the Costanoan-speaking people lived in approximately 50 separate and politically autonomous nations or tribelets. The Orinda and Lafayette areas were likely within the territory of the Huchiun tribelet (Pahl and Weinberg, 1982).

During the Mission Period (1770–1835), native populations, especially along the California coast, were brought—usually by force—to the missions by the Spanish missionaries to provide labor. The missionization caused the Costanoan people to experience cataclysmic changes in almost all areas of their life, including a massive decline in population due to introduced diseases and declining birth rate. Following the secularization of the missions by the Mexican government in the 1830s, most Native Americans gradually left the missions to work as manual laborers on the ranchos that were established in the surrounding areas.

Native American archaeological sites that could shed light on the Costanoan ways of life in the pre-mission era tend to be situated near the historic extent of the Bay tidal marshland.

Historical Background

Euroamerican settlement in the region, including much of today's Orinda, Lafayette, and Moraga, is generally associated with the Mexican land grant period, which extended from about 1841 to 1883. The area that includes the southern half of today's Orinda, much of Lafayette, and all of Moraga was in the 13,316-acre Moraga land grant received in 1835 by Joaquin Moraga from the Mexican government for his service in the military. Joaquin Moraga was the grandson of Joseph Joaquin Moraga, who was second in command of the Anza expedition of 1776, the founder of San Francisco's Mission Dolores, and the founder and first commandant of the San Francisco Presidio. The original land grant was known as Rancho Laguna de los Palos Colorados ("Ranch of the Lake of the Redwoods"). In 1841, Joaquin Moraga built an adobe ranch house on a knoll in

³ "Costanoan" is derived from the Spanish word *Costaños* meaning "coast people." No native name of the Costanoan people as a whole existed in prehistoric times, as the Costanoan were neither a single ethnic group nor a political entity.

the eastern hills of today's Orinda.⁴ The northern portion of Orinda, including the San Pablo and El Sobrante areas, was originally within the 22,000-acre El Sobrante land grant given to brothers Juan Jose and Victor Castro by Governor Juan Bautista in 1841. Portions of today's Lafayette were within the 3,300-acre Acalanes land grant, deeded to Candelario Valencia in 1835. After California statehood in 1850, the Mexican land grant period was supplanted by the American rancher period, which lasted until about 1916. During this period, farms stretched from San Pablo on the north to Moraga on the south, with the only sizeable village between these settlements located at Orinda Park at the present-day junction of San Pablo Dam Road, Bear Creek Road, and Wildcat Canyon Road in Orinda.

The following discussion provides a brief historical overview of Orinda, Lafayette, and Moraga, as well as a brief history of EBMUD.

Orinda

In 1887, brothers Jose and Miguel de Laveaga bought 1,178 acres of what would ultimately become part of Orinda. The original name "Orinda Park" was shortened to "Orinda" in 1900 by Alice Marsh, the daughter of Contra Costa County's first settler, John Marsh, and wife of the land speculator William Cameron, who purchased 2,937 acres in Orinda in 1875. Residential growth in Orinda was spurred by the California and Nevada Railroad, which began service in 1885 between Emeryville and Berkeley. The line was extended through Albany, Richmond, San Pablo and into Orinda, generally following the current alignment of Old San Pablo Dam Road, and terminated at Bryant Station⁵ circa 1890 (Contra Costa County, 1989). Orinda Park was a popular destination along the railroad line for weekend trips and those seeking warmer climates. A hotel and a school were developed near the current intersection of San Pablo Dam Road, Bear Creek Road, and Wildcat Canyon Road (see discussion below of Orinda Park School and Orinda Park Hotel).

The town of Orinda did not see wide-scale development until the 1920s. In 1921, the de Laveaga family had roads graded to the west of San Pablo Dam Road and created a small reservoir, later named Orinda Park Pool. Orinda Village was laid out in 1923 by Miguel's grandson, Edward de Laveaga, who in the previous year had started Hacienda Homes, Inc. in order to develop the area east of San Pablo Dam Road (EBMUD, 1991). To help sell the homes, de Laveaga established the Orinda Country Club and Lake Cascade (in 1924), and provided private water service to the development, as Orinda was not served by the water company operating in the area at the time. The success of de Laveaga's housing developments inspired other developers and businesses, which grew along Camino Pablo Avenue.

With completion of the Broadway Low Level (Caldecott) Tunnel in 1937, Orinda began to attract new residents (EBMUD, 1991). Orinda became more accessible by private automobile, reducing the commute time from Orinda to San Francisco from over an hour to less than 30 minutes. In the post-war era, Orinda developed into a full-scale suburban community. Between 1940 and 1970,

⁴ The Joaquin Moraga Adobe is considered to be the oldest structure in Contra Costa County. It still exists today as a private home, at 24 Adobe Lane in Orinda, although greatly altered from its original appearance. The Joaquin Moraga Adobe is listed in the National Register of Historic Places and is California Historical Landmark #509.

⁵ Named in honor of San Francisco Mayor Andrew Bryant, who had a summer home in Orinda.

more than 60 percent of Orinda's 6,300 homes were built (City of Orinda, 1994). The City of Orinda was incorporated in 1984 during a California Supreme Court case to save the 1941 Art Deco-style Orinda Theater and American Trust Bank from demolition.

Lafayette

Much of present-day Lafayette was within the 3,300-acre Acalanes land grant, deeded to Candelario Valencia in 1835. Valencia, who had been a soldier in San Francisco from 1823 to 1833, sold the land to wealthy San Francisco merchant William Leidesdorff. In late 1847, after exploring the area for a place to settle, Elam Brown bought Rancho Acalanes from Leidesdorff (Town of Moraga, 2005). In 1848, Brown built the first of three homes in today's Lafayette, as well as a horse-drawn grist mill and a steam-powered mill, on Lafayette Creek near First Street. The commercial center of Lafayette began to grow around the mill at the present-day intersection of Mt. Diablo Boulevard and Moraga Road. These first businesses were a blacksmith's shop, a bar, a general store, and rooming houses. Elam Brown's first permanent home was a small frame house located at present-day 985 Hough Avenue on Lafayette Creek in downtown Lafayette. The house was erected as early as 1849, occupied by various members of the Brown family throughout the late 1800s, and torn down in the late 1920s (City of Lafayette, 2005). A row of about 10 locust trees on the east side of Happy Valley Road, about 0.75 mile north from its intersection with Mt. Diablo Boulevard, was planted by early settlers and are classified as "heritage trees" (Contra Costa County, 1989).

Benjamin Shreve came to Lafayette after failing to make a fortune in the California Gold Rush of 1849. Shreve built and ran Lafayette's first school; in 1857 he became postmaster and named the town, "La Fayette."⁶ In the early 1860s, the Pony Express rode through town, stopping to get a fresh horse at what was then the historic core of Lafayette at the intersection of Mt. Diablo Boulevard and Moraga Road. Lafayette remained a quiet farming village until the post-World War II building boom. The City of Lafayette was incorporated in 1968 (City of Lafayette, 2005).

Moraga

Moraga is named after Joaquin Moraga, whose rancho was established in the area in 1841, as described above. This historic structure still stands, although greatly modified, as a private home within Orinda city boundaries. Most of present-day Moraga was open grazing land until the early 20th century. By 1912, most of the original Joaquin Moraga rancho was purchased by James Irvine,⁷ who started the Moraga Land Company with the intention of developing the area. The period of 1912–1913 brought the Oakland Antioch Railroad to Moraga, with service from Oakland to Chico through Moraga. This line would later become the Sacramento Northern Railroad, which served many early residents of the Moraga Valley. In 1914, the Moraga Ranch was built near the current intersection of School Street and Moraga Way. Many of these historic buildings are still standing, including a cook house, a commissary, a walk-in cooler, and a mess hall. The ranch also had a garage, a repair shop, bunk houses, a bath house, a warehouse, and blacksmith shop. The Moraga Barn was originally constructed in 1914 as a hotel and stage stop

⁶ The town's name was changed to its current spelling, "Lafayette," in 1932.

⁷ The same James Irvine of the Irvine Ranch Company of Orange County, California.

across Moraga Way from the Moraga Ranch. The Moraga Ranch/Moraga Barn area was an important stop along the Sacramento Northern Railroad.

In 1927, the Moraga Land Company gave 100 acres to St. Mary's College and College of Holy Names, and in 1928 the college moved from its original site in San Francisco's Mission District to Moraga Valley. A number of buildings from the late 1920s and early 1930s still exist on the campus. In 1935, most of the Moraga Land Company property was bought by the Utah Construction and Mining Company, and many subdivisions and homes were started in the area. Utah Construction later sold the remaining land to Russell Bruzzone, a Lafayette developer who developed much of the property in the post-war period.

Similar to the towns of Orinda and Lafayette, Moraga remained a quiet village until the post-World War II building boom. Donald Rheem, who bought 20 acres surrounding his Hacienda de las Flores in 1929, originally wanted to develop a country club, but eventually developed the Rheem shopping center on the property in the mid-1950s. Most of the homes, roads, and businesses in present-day Moraga were built since 1960. The Town of Moraga was incorporated in 1974 (Town of Moraga, 2005).

EBMUD

East Bay water companies were in existence as early as the 1860s. Among them were the Contra Costa Water Company, Syndicate Water Company, and Richmond Water Company. In 1906, these three companies were absorbed by the People's Water Company, which had an interest in developing local watershed resources for public usage. Land near the present-day San Pablo Dam was purchased, and the area surrounding many creeks was developed for use as reservoirs, aqueducts, and mains to serve parts of Alameda and Contra Costa Counties. In 1917, the People's Water Company was purchased by the East Bay Water Company, which developed the San Pablo Reservoir in 1919, the Upper San Leandro Reservoir in 1926, and the Upper San Leandro WTP in 1927⁸ (EBMUD, 1991, 2005b).

EBMUD was formed on May 8, 1923, the product of a bond issue passed by the voters of Oakland, Berkeley, Alameda, Emeryville, Albany, San Leandro, and El Cerrito. Richmond and Piedmont would later become part of the system. EBMUD engineers Arthur Powell Davis, General Goethals, and William Mulholland selected the Mokelumne River as the water supply source and Lancha Plana in the Sierra Nevada mountains as the site for the reservoir (Noble, 1970).

As originally designed, water from the Mokelumne River in the Sierra Nevada mountains collected behind Pardee Dam at Lancha Plana, then flowed via gravity into a series of pipelines built across California's Central Valley and Delta region. The water flowed to a pumping plant in Walnut Creek, which pushed the water to East Bay customers; some of the water was delivered by a pipeline tunnel into a storage reservoir in Lafayette, and then directed into San Pablo Creek in Orinda where it could fill San Pablo Reservoir or be diverted into the Claremont Tunnel in the Oakland-Berkeley Hills (Noble, 1970).

⁸ The Upper San Leandro WTP had major expansions in 1961 and 1991 (EBMUD, 2003).

In 1928, five years after the District was formed, a \$26 million bond was used to purchase the existing system of the East Bay Water Company. With the facilities came 40,000 acres of land in Alameda and Contra Costa Counties and all of the East Bay Water Company's previously completed reservoirs and treatment plants (EBMUD, 2003). In the year the District was formed, the Lafayette Reservoir was completed as a terminal storage reservoir in the EBMUD system. The Pardee Dam and the first Mokelumne Aqueduct were completed in 1929, with the first water deliveries from the Sierra Nevada mountains to the East Bay in June of that year.

By 1930, EBMUD was serving 35 million gallons per day (mgd) to a population of 460,000. A study of District lands commissioned in the same year indicated that 7,000 to 10,000 acres were not needed for watershed protection purposes and were suitable for parks and recreation use. In 1934, the East Bay Regional Park District (EBRPD) was created to acquire and manage District lands not needed for water quality protection. In 1936, EBMUD agreed to sell 2,162 acres of watershed land in Wildcat Canyon, Tilden Park, Roundtop Peak, and Temescal Reservoir to the EBRPD (EBMUD, 2003). EBMUD constructed the Art Deco-style Orinda Filter Plant (Orinda WTP) in 1936, which continues to be the largest of the District's six water treatment plants.⁹

EBMUD continued to grow during the post-war period. Populations in the East Bay grew to 850,000, necessitating a second Mokelumne Aqueduct, which was completed in 1950. In 1958, Pardee Reservoir was opened for public recreation. In 1964, EBMUD constructed the Sobrante WTP.¹⁰ In 1966, the Lafayette and Chabot Reservoirs were opened for public recreation; the Upper San Leandro WTP underwent a major expansion in the same year. By 1967, a third Mokelumne Aqueduct and the new Comanche Dam and Reservoir were completed; in the same year, EBMUD constructed the Walnut Creek WTP. By 1970, EBMUD was serving 220 mgd to an East Bay population of 1,100,000 (Noble, 1970; EBMUD, 2005b).

Methods

Archival

ESA conducted a cultural resources records search of pertinent survey and site data at the Northwest Information Center of the California Historical Resources Information System, Sonoma State University, on October 20, 2005 (File No. 05-363). The information center staff accessed the records for the Briones Valley, Walnut Creek, Las Trampas Ridge, Oakland East, and Richmond U.S. Geological Survey (USGS) 7.5-minute quadrangles and included the project area along with a quarter-mile radius around each project element. The records search included a review of the Directory of Properties in the Historic Property Data File for Contra Costa County (Office of Historic Preservation, 2005) for information on sites of recognized historical significance in the National Register of Historic Places, California Register of Historical Resources, California Inventory of Historic Resources, California Historical Landmarks, and California Points of Historical Interest.

⁹ EBMUD claims the building was constructed in 1935, while the City of Orinda says it was 1936, as indicated on the building's plaque. Regardless, the plant was expanded in 1961 and again in 1997 (EBMUD, 2003). This facility was designated a City of Orinda Historical Landmark in 1988 (City of Orinda, 1988).

¹⁰ Many later improvements were made in 1991 (EBMUD, 2003).

Field Methods

A field reconnaissance was conducted by an archaeologist to obtain a general impression of the area's potential to yield significant cultural resource sites and to visually inspect project areas in relation to known archaeological sites. Because the majority of the project area is highly developed, standard archaeological survey methods have little to no value due to the lack of visible native ground surface and significant alteration of the topographic setting. However, a number of alignments and proposed reservoir sites are undeveloped and therefore were subjected to a pedestrian survey (Hester et al., 1997) (see the discussion of survey methods and results for each relevant project component). In these cases, the proposed pipeline route or project facility footprint was walked, using zigzagging transects, and the ground surface inspected for archaeological deposits (e.g., stone artifacts, organic soil residues, fire-cracked rock, etc.). An architectural historian/preservation planner conducted a field reconnaissance to visually inspect for potential historic architectural resources.

Native American Consultation

The Native American Heritage Commission was contacted on December 16, 2005 to request a database search for sacred lands or other cultural properties of significance to local Indian people. The records search did not indicate the presence of Native American sacred lands in the project areas. The Commission provided a list of people who may have specific information pertaining to cultural resources in the project areas, and letters were sent to each person. No response has been received to date.

Cultural Resources within the EBMUD WTTIP Project Areas

EBMUD maintains records of all recorded cultural resources within its watershed boundaries. The District has identified 48 recorded cultural resource sites within its East Bay watershed boundaries, including prehistoric archaeological resources, historic archaeological resources, and historic architectural resources (EBMUD, 2005a). A full list of these resources is provided in Appendix F, in addition to a list of all recorded historic resources within Orinda, Lafayette, and Moraga. Of the 48 recorded historic resources in EBMUD watershed boundaries, only a few are within the immediate vicinity of proposed WTTIP project sites. These resources are described below by city.

City of Orinda

Recorded cultural resources in Orinda and in the vicinity of WTTIP project sites include the following: (1) Orinda Filter Plant (Orinda WTP), (2) Wagner Ranch and Home sites, (3) the Orinda Park Hotel site, and (4) the Orinda Park School site. A brief history and description of these resources are provided below.

Orinda Filter Plant

The Orinda Filter Plant (Orinda WTP), at 190 Camino Pablo, is owned and operated by EBMUD. The facility was completed in 1936 and was one of three buildings designed by architect Mark Daniels in 1934 (the main building, chemical building, and grounds/maintenance building) in an

Art Deco style of architecture (OHS, 2005; City of Orinda, 1988). The filter plant was built as part of EBMUD's Mokelumne River/Aqueduct Project. The filter plant was expanded in 1961 and extensively renovated in 1997/1998, including a restoration of the plant's Art Deco design and details. In November 1988, the Orinda Filter Plant was designated Orinda's first historic landmark (City of Orinda, 2005; EBMUD, 2003). EBMUD also identifies the Orinda WTP as a historic architectural resource (EBMUD, 2005a). The Orinda Filter Plant is considered a cultural resource for the purposes of CEQA.

Wagner Ranch and Home Site

In the 1870s, General Theodore Wagner¹¹ obtained about 241 acres around the intersection of Wildcat Canyon Road, Bear Creek Road, and San Pablo Dam Road through his marriage into the Sandow family (OHS, 2005). In 1882, General Wagner built a large home and ranch on what is now the Wagner Ranch Nature Area, just north of today's intersection of San Pablo Dam Road and Bear Creek Road. Wagner's Oak View Ranch was self-sustaining and contained orchards, olive trees, vineyards, a dairy, brick kiln, gas house, horse barn, carriage house, fish pond, dairy, hotel (see Orinda Park Hotel Site discussion, below), blacksmith's shop, and servant's house (City of Orinda, 2005). In July 1887, the original Wagner home was destroyed in a fire and rebuilt later that year on a smaller scale. By 1891 the property was sold to Moses Hopkins (a brother of Mark Hopkins), and, by 1895, Wagner had moved to Berkeley (Muir, 1970). The property was eventually purchased by the Contra Costa Water Company (which became the People's Water Company and was later absorbed by the East Bay Water Company, which in turn was purchased by EBMUD). Although the building no longer exists, EBMUD maintains the original homesite as a historical study and nature area. The Wagner Ranch and Home sites are considered cultural resources for the purposes of CEQA.

Orinda Park Hotel Site

The Orinda Park Hotel was constructed on the Wagner Ranch property across and to the north of Bear Creek Road from the Wagner Ranch homesite. General Wagner built the hotel in 1885 in anticipation of the extension of the California-Nevada Railroad. After the railroad reached Orinda Park in 1889, the hotel became a favorite with hunters, fishermen, and harvesters. However, due to the failure of the railroad around 1900 and the slow development of the area, the building was sold and used only for community parties and dances. The hotel was torn down in 1913. Part of its stone foundation is still visible, and the hotel site is now located on EBMUD property (City of Orinda, 2005; Contra Costa County, 1989). The Orinda Park Hotel site is considered a cultural resource for the purposes of CEQA.

Orinda Park School Site

The Orinda Park School District was formed in 1881. In 1882, the Orinda Park School was constructed on land donated by Wagner at a site near the present-day intersection of San Pablo Dam Road and Wildcat Canyon Road. The school was used until 1925, when the Orinda High School District was formed and a new school was built at 26 Orinda Way (now the

¹¹ Wagner's title of "General" was due to his role as United States Surveyor General. He was also a member of the California Supreme Court.

Orinda Community Center). The Orinda Park School building was auctioned in April 1925, and the land reverted to the East Bay Water Company (now EBMUD). In the 1960s, the Orinda Union School District chose the Wagner site for construction of a new school. The Wagner Ranch Elementary School opened for its first students in September 1969. The original school building no longer exists (OHS, 2005). The Orinda Park School site is considered a cultural resource for the purposes of CEQA.

City of Lafayette

Recorded historic resources in Lafayette and in the vicinity of WTTIP project sites include the Lafayette Reservoir Dam, and potentially one pumping facility within the Lafayette WTP. These resources are described below.

Lafayette Reservoir Dam

The Lafayette Reservoir Dam is a 126-foot-tall, 1,200-foot-wide earthen embankment; it covers a watershed area of 75 square miles and impounds the Lafayette Reservoir, which can hold 1.4 billion gallons of water (Noble, 1970). The dam was constructed by EBMUD in 1928 as part of the storage system for the Mokelumne River/Aqueduct Project, and is now one of five terminal storage reservoirs in the EBMUD system (the other four are the Briones, San Pablo, Upper San Leandro, and Chabot Reservoirs). The dam was designed by EBMUD supervising engineer George B. Sturgeon and engineering inspector Leo J. Coleman, Sr. (City of Lafayette, 2005). Prior to its construction, the reservoir site required multiple property condemnations, two of which were tried in court by the landowners (who sued over the condemnation price being offered by EBMUD). The suits were eventually settled and construction began on the dam. During construction in September 1927, the dam began sliding off its foundation and large cracks opened up in the reservoir bed. To solve the engineering difficulties, the dam was reduced in height by 40 feet and the side slopes were flattened. This change reduced the dam's storage capacity from 10,540 acre-feet to 3,700 acre-feet (Noble, 1970). The Lafayette Reservoir remained closed to the general public until 1966, when it was opened for recreational purposes. Although not identified as a national, state, or local historical resource, EBMUD lists the Lafayette Reservoir Dam as a historic architectural resource (EBMUD, 2005b). The Lafayette Reservoir Dam is considered a cultural resource for the purposes of CEQA.

A small remnant of an old orchard can be seen between the base of the dam and Mt. Diablo Boulevard. This orchard may have been part of a larger orchard that existed in the valley before the property was condemned by EBMUD in the 1920s. No historic farmhouse or related structures in the area appear to be associated with the orchard, and while the orchard itself is likely over 75 years old, it has not been identified as a historic resource. Due to its highly altered setting and loss of historical integrity, the orchard would not likely qualify as a significant cultural resource in the future, even upon further research. As such, the orchard is not considered a cultural resource for the purposes of CEQA.

Bryant #2 Pumping Plant (Lafayette WTP)

The Lafayette Screening Chamber and Pump House (now called the Bryant #2 Pumping Plant) was constructed in 1927, contemporaneously with the Lafayette Reservoir Dam (located

immediately southwest and across Mt. Diablo Boulevard from the plant). The pumping plant was constructed adjacent to the Lafayette Tunnel, also completed in 1927, and was designed to lift water from the tunnel into the Lafayette Reservoir. Water from the reservoir could also be pumped through the pumping plant and its screening chambers into the Lafayette Tunnel for distribution further down the line. The two-story Art Deco-style facility was designed by EBMUD engineer H.A. Knudsen in 1926 (EBMUD, 1926). Water treatment facilities designed in an industrial-modern architectural style were added to the north of the pumping plant in 1953, with an expansion in 1960 and later renovations and additions in the early 1990s (EBMUD, 2003). Neither the Lafayette WTP nor the 1927 pumping plant within it are listed as a national, state, or local historical resource, nor are they identified as historic sites by EBMUD. However, based on the field reconnaissance and limited historical research of the Bryant #2 Pumping Plant within the Lafayette WTP in October 2005, this facility may be individually eligible for listing in the California Register of Historical Resources (i.e., a historic resource for CEQA purposes) due to its age, its associations with the initial development of EBMUD's Mokelumne River/Aqueduct Project, and as a good example of the Art Deco style of architecture as applied to an industrial building.¹² Although there are many pumping plants in the EBMUD system, this plant appears to be one of the oldest and has retained a high level of overall physical integrity. For these reasons, the Bryant #2 Pumping Plant is considered a cultural resource for CEQA purposes. Given the relatively recent dates of alterations to the other water treatment facilities at the Lafayette WTP, the remainder of the facility would not likely be eligible for listing in the California Register, and therefore is considered a cultural resource for CEQA purposes.

Town of Moraga

Recorded historic resources in Moraga and in the vicinity of WTTIP project sites include the Rheem Estate/Hacienda de las Flores (Moraga Road Pipeline project), and St. Mary's College (St. Mary's Drive/Rohrer Drive Pipeline program-level project). These historic resources are described below.

Rheem Estate/Hacienda de las Flores

The Rheem Estate, also called the Hacienda de las Flores, is located at the intersection of Moraga Road and Donald Drive (2100 Donald Drive) in Moraga. The Spanish-style estate was designed by architect Clarence Tantau and constructed in about 1917 as an orphanage to be directed by Hortense Higgens and Gertrude Mallele (Contra Costa County, 1989). In 1934, the structure and 20 surrounding acres were sold to Donald Rheem, who greatly expanded the building to become an 18-room mansion.¹³ In 1961, Rheem sold the estate to the Christian Brothers, who ran St. Mary's College; the brothers in turn sold it to the Town of Moraga in 1973 (Contra Costa Times, 2005). The structure now serves as the offices of the Town of Moraga and the Moraga Parks Department. The Rheem Estate/Hacienda de las Flores is considered by the Town of Moraga to be a historical resource (Town of Moraga, 2002) and is therefore a cultural resource for CEQA purposes.

¹² Reconnaissance-level historical evaluation conducted by an ESA architectural historian/preservation planner on October 12, 2005.

¹³ Rheem was an heir to the Standard Oil fortune.

St. Mary's College

St. Mary's College is located on St. Mary's Road in eastern Moraga. As described above, the Moraga Land Company gave 100 acres to St. Mary's College and College of Holy Names in 1927, and in 1928 the college moved from its original site in San Francisco's Mission District to Moraga Valley. Although the campus has changed substantially, with many newer facilities constructed over the years, a number of the original Spanish-style buildings still exist, including the main chapel. The chapel and other original buildings dating from the late 1920s and early 1930s are considered by the Town of Moraga (2002) to be historical resources and are therefore cultural resources for CEQA purposes.

Paleontologic Resources

Paleontologic resources are fossilized evidence of past life found in the geologic record. Despite the prodigious volume of sedimentary rock deposits preserved worldwide and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils (particularly vertebrate fossils) are considered to be nonrenewable resources. Because of their rarity and the scientific information they can provide, fossils are highly significant records of ancient life. Paleontologic resource localities are sites where the fossilized remains of extinct animals and/or plants have been preserved.

Sedimentary rock formations that yield significant vertebrate or invertebrate fossil remains are considered to possess paleontological sensitivity. Significant paleontological resources can be found anywhere within the geographic extent of sedimentary rocks formations in the project area.

Regulatory Framework

Cultural resource surveys provide information about existing properties that may be of value to a community. Designation or listing in a registry of cultural and/or historical resources may occur if a building or site is found to be of value; designation or listing can also alert potential developers of the public's interest in such properties through review by public boards and commissions. The following regulatory framework identifies the national, state, and local criteria used to identify and protect cultural resources. Since the recorded cultural sites within the WTTIP project area are located in Orinda, Lafayette, and Moraga, the regulatory framework identifies all of these cities' general plans, ordinances, and other related policies and regulations.

National Register of Historic Places

The National Register of Historic Places is the nation's master inventory of known historic resources. The National Register is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

Structures, sites, buildings, districts, and objects over 50 years of age can be listed in the National Register as significant historical resources. However, properties under 50 years of age that are of

exceptional importance or are contributors to a district can also be included in the National Register. The criteria for listing in the National Register include resources that:

- Are associated with events that have made a significant contribution to the broad patterns of history;
- Are associated with the lives of persons significant in our past;
- 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
- Have yielded or may likely yield information important in prehistory or history.

California Environmental Quality Act

CEQA requires that public or private projects financed or approved by public agencies assess the effects of the project on historical resources. CEQA also applies to effects on archaeological sites, which may be included among “historical resources” as defined by CEQA Guidelines Section 15064.5, subdivision (a), or may be subject to the provisions of Public Resources Code Section 21083.2, which governs review of “unique archaeological resources.” Historical resources generally include buildings, sites, structures, objects, or districts, each of which may have historical, architectural, archaeological, cultural, or scientific significance.

Under CEQA, “historical resources” include the following:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Public Resources Code, Section 5024.1).
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency’s determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be “historically significant” if the resource meets the criteria for listing in the California Register of Historical Resources (Public Resources Code, Section 5024.1), including the following:
 - Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
 - Is associated with the 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.
- The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1[k] of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in Section 5024.1[g] of the Public Resources Code) does not preclude a lead agency from determining that the resource may be a historical resource as defined in Public Resources Code Section 5020.1(j) or 5024.1.

Archaeological resources that are not historical resources according to the above definitions may be “unique archaeological resources” as defined in Public Resources Code Section 21083.2, which also generally provides that “non-unique archaeological resources” do not receive any protection under CEQA. If an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources will not be considered a significant effect on the environment. It is sufficient that the resource and the effects on it be noted in the EIR, but the resource need not be considered further in the CEQA process.

CEQA requires that if a project results in an effect that may cause a substantial adverse change in the significance of a historical resource, or would cause significant effects on a unique archaeological resource, then alternative plans or mitigation measures must be considered. Therefore, prior to assessing effects or developing mitigation measures, the significance of cultural resources must first be determined. The steps that are normally taken in a cultural resources investigation for CEQA compliance are as follows:

- Identify potential historical resources
- Evaluate the eligibility of historical resources
- Evaluate the effects of the project on eligible historical resources

EBMUD East Bay Watershed Master Plan (1996)

The District’s goal for cultural resources is to avoid adverse effects on sensitive cultural resources during the implementation of District activities on watershed lands, and to establish relationships with local Native American groups. Specific objectives to implement these goals include the following:

- Identify, preserve, and protect significant cultural resources
- Provide for appropriate research and educational uses of District lands with respect to cultural resources
- Maintain an ongoing relationship with Native Americans who have ancestral ties to District lands

The District’s *East Bay Watershed Master Plan* also contains 11 guidelines for the identification and protection of cultural resources. (See Appendix D, Table D-7 for specific language.)

City of Orinda General Plan and Historic Landmarks Ordinance

The Conservation Element of the Orinda General Plan (City of Orinda, 1994) contains goals and policies that address the identification and preservation of historic structures and sites. (See Appendix D, Table D-5 for applicable general plan language.)

In addition, City Council adopted Title 17.25 (Historic Landmarks) of the Orinda Municipal Code as the City's landmarks preservation ordinance. The purpose of the ordinance is to preserve, protect, perpetuate, enhance, and use historic landmarks. The ordinance also allows the City Council to designate a site, building, structure, monument, tree, work of art, or other object in the city as a historical landmark.

In 1988, the Orinda City Council designated the Orinda Filter Plant as a historical landmark (City of Orinda, 1988). Notable building features cited in the designation include the gargoyles at the entrance, the arched entrance ceiling and chandelier at the main building, the light fixtures and the railings on the walls on the side elevation of the building above the filter gallery, and exterior lamp posts (City of Orinda, 1988). The City Council found the Orinda Filter Plant to be significant for the following reasons:

- It is part of the development and heritage characteristics of Orinda.
- It is located on a site of significant historic events.
- It represents a distinctive example of an architectural period of style.
- It is associated with important governmental and social developments in the city.

The Orinda Planning Department reserves the right to require a plan check for changes to any building or object with landmark status. Changes are defined as exterior alteration, destruction or removal, interior alteration that could affect an area customarily open to the public and that has special historic or aesthetic value, or onsite physical changes to the grounds, as defined in the landmark designation. As the Orinda Filter Plant is a water conveyance facility owned and operated by EBMUD, a state-chartered utility, it is exempt from regulations imposed under the local historic landmark ordinance, pursuant to Section 53091 of the Water Code. The city ordinance makes note of this fact by stating, "... the sole purpose of the Landmark designation is to recognize the site as a place of historical significance."

City of Lafayette General Plan and Historic Landmarks Ordinance

The Land Use Element of the Lafayette General Plan (City of Lafayette, 2002) contains goals and policies that call for the identification and preservation of archaeological and historic resources. (See Appendix D, Table D-2 for applicable general plan language.)

In addition, City Council adopted Title 6.21 (Historic Landmarks) of the Lafayette Municipal Code as the city's landmarks preservation ordinance. The purpose of the ordinance is to safeguard the heritage of the city by preserving and perpetuating locations, areas, places, sites, buildings, structures, monuments, works of art, and other objects that reflect elements of the city's cultural, historical, archaeological, social, economic, political, agricultural, military, educational, or architectural history. The ordinance allows the Lafayette City Council to designate

historical landmarks and to issue certificates of appropriateness for proposed alterations to designated landmarks.

Town of Moraga General Plan

The Community Design Element of the Moraga General Plan (Town of Moraga, 2002) contains goals and policies that address the identification and preservation of historic buildings and sites and sets guidance for adjacent infill development. (See Appendix D, Table D-3 for applicable general plan language.)

The Town of Moraga does not have a historic landmarks ordinance as part of its municipal code.

3.7.3 Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR and consistent with Appendix G of the CEQA Guidelines, a WTTIP project is considered to have a significant impact if it would:

- A substantial adverse change in the significance of a historical resource that is either listed or eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, or a local register of historic resources;
- A substantial adverse change in the significance of a unique archaeological resource;
- Disturbance or destruction of a unique paleontological resource or site or unique geologic feature; or
- Disturbance of any human remains, including those interred outside or formal cemeteries.

CEQA provides that a project may cause a significant environmental effect where the project could result in a substantial adverse change in the significance of a historical resource (Public Resources Code, Section 21084.1). CEQA Guidelines Section 15064.5 defines a “substantial adverse change” in the significance of a historical resource to mean physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be “materially impaired” (CEQA Guidelines, Section 15064.5[b][1]).

CEQA Guidelines, Section 15064.5(b)(2), defines “materially impaired” for purposes of the definition of “substantial adverse change” as follows:

The significance of a historical resource is materially impaired when a project:

- (A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

- (B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- (C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

In accordance with CEQA Guidelines Section 15064.5(b)(3), a project that follows the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* or *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* is considered to have mitigated impacts to historic resources to a less-than-significant level.

Historic resources are usually 50 years old or older and must meet at least one of the criteria for listing in the California Register (such as association with historical events, important people, or architectural significance), in addition to maintaining a sufficient level of physical integrity (CEQA Guidelines Section 15064.5[a][3]).

Impacts and Mitigation Measures

Table 3.7-1 indicates the level of significance of potential impacts to cultural resources by project facility.

Impact 3.7-1: Potential disturbance to archaeological resources, including unrecorded cultural resources.

The discussions below identify archaeological resource investigations conducted for the WTTIP sites. Previously unknown and buried (or otherwise obscured) prehistoric or historic cultural resources may be present almost anywhere in the construction zones identified for the projects, and all WTTIP projects would involve excavation. As a result, construction of the WTTIP projects could result in degradation and/or destruction of unrecorded cultural resources, a significant impact. With implementation of Measure 3.7-1a (see page 3.7-24) for all WTTIP projects, these potential impacts would be reduced to a less-than-significant level.

Lafayette WTP

Alternative 1 – Supply from Orinda and Lafayette WTPs

Under Alternative 1, a significant amount of subsurface excavation and grading would occur, primarily resulting from construction of the two proposed clearwells to be placed west of the plant near Lafayette Creek (refer to Map D-LWTP-1 at the end of Chapter 2). Several proposed pipelines would cross the creek. A recent surface reconnaissance of the clearwell sites did not

**TABLE 3.7-1
SUMMARY OF POTENTIAL PROJECT-LEVEL CULTURAL RESOURCE IMPACTS**

Facility	Impact 3.7-1	Impact 3.7-2	Impact 3.7-3
	Archaeological resources	Paleontological Resources	Historic Resources
Lafayette WTP <i>Alternative 1 or 2</i>	SM	SM	LTS
Orinda WTP <i>Alternative 1 or 2</i>	SM	SM	LTS
Walnut Creek WTP <i>Alternative 1 or 2</i>	SM	SM	–
Sobrante WTP <i>Alternative 1 or 2</i>	SM	SM	–
Upper San Leandro WTP <i>Alternative 1 or 2</i>	SM	SM	–
Orinda-Lafayette Aqueduct <i>Alternative 2</i>	SM	SM	–
Ardith Reservoir/ Donald Pumping Plant	SM	SM	–
Fay Hill Pumping Plant and Pipeline Improvements	SM	SM	–
Fay Hill Reservoir	SM	SM	–
Glen Pipeline Improvements	SM	SM	–
Happy Valley Pumping Plant and Pipeline	SM	SM	–
Highland Reservoir and Pipelines	SM	SM	LTS
Lafayette Reclaimed Water Pipeline	SM	SM	LTS
Leland Isolation Pipeline and Bypass Valves	SM	SM	–
Moraga Reservoir	SM	SM	–
Moraga Road Pipeline	SM	SM	LTS
Sunnyside Pumping Plant	SM	SM	–
Tice Pumping Plant and Pipeline	SM	SM	–
Withers Pumping Plant	SM	SM	–

SM = Significant Impact, Can Be Mitigated
SU = Significant Impact, Unavoidable
LTS = Less-Than-Significant Impact
– = No Impact

reveal any evidence of prehistoric use, although the area had been recently grubbed, and gravel roads have been cut through the area. No previous cultural resource surveys had been conducted at the Lafayette WTP. Lafayette Creek is an area of moderate to high sensitivity for cultural resources. One prehistoric archaeological site (CA-CCo-231) has been identified about one-quarter mile northwest of the WTP along the creek; this site is discussed below under the Orinda-Lafayette Aqueduct. The pipeline crossing locations proposed in both alternatives were inspected for archaeological deposits in the creek banks (which provide a deep stratigraphic cross-section of the soil deposits); no evidence of prehistoric use of this area was observed. Due to the previous disturbance at the Lafayette WTP site and the absence of recorded cultural sites in the vicinity, archaeological resources are not likely to be encountered. However, due to the sensitivity of

Lafayette Creek, Measures 3.7-1a and 3.7-1b are recommended for any WTTIP project construction within 200 feet of the Creek.

Alternative 2

Under Alternative 2, ground disturbance associated with the Lafayette WTP would be substantially less than that under Alternative 1; however, pipeline construction would still occur near Lafayette Creek (see Orinda-Lafayette Aqueduct discussion).

Orinda WTP

Alternative 1

Under Alternative 1, a substantial amount of subsurface excavation and grading would be required, particularly for construction of potential future facilities (see discussion below). The Orinda WTP had been previously surveyed for archaeological resources with negative results (Bramlette, 1987). The field reconnaissance of the Orinda Sports Field conducted for the WTTIP did not identify any cultural resources. Exposed native surfaces were more closely inspected, but the area was mostly covered by grasses, which diminished the surface visibility. However, a number of cultural resources have been recorded on EBMUD property in the vicinity of the Orinda WTP; these include prehistoric archaeological resources within the San Pablo Reservoir watershed (for example, sites CA-CCo-401 and CA-CCo-409), four historic archaeological sites (the Wagner Ranch and Home sites, the Orinda Park Hotel site, and the Orinda Park School site), and one historic resource (the Orinda Filter Plant). Recorded historic archaeological sites associated with Wagner Ranch and Orinda Park are located about 1,500 feet north of the Orinda Sports Field (or north of Wagner Ranch Elementary School). The Wagner Ranch covered some 240 acres and included the entire Orinda WTP site. Subsurface artifacts from this previous use as a self-sufficient ranch could exist anywhere in the project area.

Construction of the proposed project could result in degradation or destruction of unrecorded cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Alternative 2

Under this alternative, there would be subsurface excavation and grading for the following proposed facilities (in addition to the facilities that would also be constructed under Alternative 1): the new Los Altos Pumping Plant, Orinda-Lafayette Aqueduct, the clearwell at the existing washwater settling basin area, and pipelines connecting these facilities, (refer to Map D-OWTP-2 at the end of Chapter 2). Construction of the proposed facilities could result in degradation or destruction of unrecorded cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Walnut Creek WTP – Alternative 1 or 2

No cultural resources have been recorded on the Walnut Creek WTP site or immediate vicinity. The current project area is highly developed with concrete and asphalt paving; consequently, the

field reconnaissance was constrained and did not identify any cultural resources. However, because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Sobrante WTP – Alternative 1 or 2

No cultural resources have been recorded on the Sobrante WTP site; however, a single prehistoric site, CA-CCo-387, was previously identified about 1,500 feet west of the Sobrante WTP on a terrace above San Pablo Creek, off of La Honda Road. The WTP facility itself is highly developed; although the existing backwash water settling basins west of the WTP are located on the bank of the San Pablo Creek, the area has been modified to accommodate the basins and, as such, did not provide favorable conditions for visual inspection of the surface. The pathway on the creek-side of the settling basins was inspected with negative results. The proposed changes to the Sobrante WTP appear to avoid site CA-CCo-387. An archaeological survey conducted for the widening of Valley View Road was negative for archaeological resources (Baldrice, 1981). However, because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Upper San Leandro WTP – Alternative 1 or 2

No cultural resources have been recorded on the Upper San Leandro WTP site or immediate vicinity. The WTP site is mostly paved; the site reconnaissance of areas that would be disturbed did not identify any archaeological resources. However, because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Orinda-Lafayette Aqueduct

A substantial amount of subsurface excavation and grading would be required for construction of the Orinda-Lafayette Aqueduct. Two recorded prehistoric or historic archaeological resources have been identified in the immediate project vicinity (CA-CCo-231 and CA-CCo-142). This portion of the project would also involve subsurface disturbance near Lafayette Creek, which is considered to be moderate to highly sensitive for cultural resources. CA-CCo-231, a poorly defined site that contained burials, is directly within the Orinda-Lafayette Aqueduct alignment (this site was originally recorded by Loud [1913]). An attempt to relocate CA-CCo-231 was conducted in the exposed area at the edge of the Bentley School parking lot adjacent to Lafayette Creek. The area has been disturbed by the parking lot and ornamental landscaping, which tended to obscure the native surface. No archaeological deposits were identified. However, jack-and-bore and trenching activities could potentially affect CA-CCo-231 and any previously unknown site material. The other previously identified site, CA-CCo-142, is located on the ground surface, more than 100 feet above the proposed tunnel alignment; consequently, no direct impacts to this site are expected.

With implementation of Measures 3.7-1a and 3.7-1b, this impact would be reduced to a less-than-significant level.

Ardith Reservoir and Donald Pumping Plant

No cultural resources have been recorded on the proposed Ardith Reservoir/Donald Pumping Plant site or immediate vicinity. The area has been previously disturbed. However, because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Fay Hill Pumping Plant and Pipeline Improvements

No cultural resources have been recorded on the proposed Fay Hill Pumping Plant and Pipeline site or immediate vicinity. The area has been previously disturbed. However, because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Fay Hill Reservoir

No cultural resources have been recorded on the proposed Fay Hill Reservoir site or immediate vicinity. The upland hillside overlooking the Rheem Valley (where the Fay Hill Reservoir is located) was previously surveyed with negative results (Self, 1990). The reservoir site is located at a high point with views of Mount Diablo; however, the hillside has long been used for grazing, and much of the native vegetation is gone. However, because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Glen Pipeline Improvements

One prehistoric cultural resource has been recorded near the proposed Glen Pipeline alignment:

- CA-CCo-232. This site was identified on Happy Valley Road near the termination of the Glen Pipeline route. While identified as a large habitation site, it has since likely been destroyed (Loud, 1926).

Although the area has been previously disturbed, components of the above site or unknown sites could exist anywhere in the construction zone of the Glen Pipeline Improvements, especially along Nordstrom Lane, which would be subjected to subsurface excavation and grading. CA-CCo-232 was poorly recorded and without subsurface data on the site, deposits may exist within the project excavation corridor. With implementation of Measures 3.7-1a and 3.7-1b, this impact would be reduced to a less-than-significant level.

Happy Valley Pumping Plant and Pipeline

No cultural resources have been recorded within the Happy Valley Pumping Plant and Pipeline project area or immediate vicinity. Two previous cultural resource investigations conducted along most of the pipeline route were negative for archaeological deposits (Holman, 1991, 1993). The pipeline route is currently paved, thereby eliminating the surface visibility. The proposed pumping plant location is on an undeveloped terrace above Lauterwasser Creek. A surface inspection of the pumping plant site did not reveal any archaeological site deposits. However, given the proximity to the creek, subsurface deposits may be present in this area. The pipeline would be constructed within existing rights-of-way that were previously disturbed during the development of roads (such as Minor Road and Lombardy Lane), and therefore no cultural resources are likely to be present. However, cultural resources could exist anywhere in the construction zone, which would be subjected to a substantial amount of subsurface excavation and grading. In addition, certain portions of the project would involve subsurface disturbance near Lauterwasser Creek, which is considered to be moderately sensitive for containing cultural resources. Because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Highland Reservoir and Pipelines

No cultural resources have been recorded within the Highland Reservoir and Pipelines project area or immediate vicinity. The proposed reservoir and pipelines are located west of the Lafayette Dam in an oak woodland habitat. The site, pipeline routes, stockpile area, and construction access road were inspected for archaeological remains using pedestrian survey methods. While much of the pipeline alignments and the proposed reservoir site are covered in grasses, some areas along the dirt access roads allowed for greater surface visibility. However, no archaeological deposits were identified. Despite the disturbance caused by the original construction of the Lafayette Reservoir Dam, significant archaeological resources could exist anywhere in the construction zone, potentially resulting in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Lafayette Reclaimed Water Pipeline

No cultural resources have been recorded within the Lafayette Reclaimed Water Pipeline project area or immediate vicinity. The proposed pipeline would cross Lafayette Creek, which is an area of moderate to high sensitivity for cultural resources. One prehistoric archaeological site (CA-CCo-231) has been identified about one-quarter mile northwest of the WTP along the creek; this site is discussed below under the Orinda-Lafayette Aqueduct. The pipeline crossing locations proposed were inspected for archaeological deposits in the creek banks (which provide a deep stratigraphic cross-section of the soil deposits); no evidence of prehistoric use of this area was observed. Due to the previous disturbance at the Lafayette WTP site and the absence of recorded cultural sites in the vicinity, archaeological resources are not likely to be encountered. However, due to the sensitivity of Lafayette Creek, Measures 3.7-1a and 3.7-1b are recommended for any WTTIP project construction within 200 feet of the Creek.

Leland Isolation Pipeline and Bypass Valves

No cultural resources have been recorded within the Leland Isolation Pipeline and Bypass Valves project area or immediate vicinity. One previous investigation conducted along a portion of the Leland Isolation Pipeline alignment was negative (Chavez, 1997). The entire alignment is paved. However, because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Moraga Reservoir

No cultural resources have been previously recorded or identified on the proposed Moraga Reservoir site or immediate vicinity. The site is within a developed residential area, which prevented any inspection of the native surface. However, because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Moraga Road Pipeline

No cultural resources have been recorded along the proposed Moraga Road Pipeline project area or immediate vicinity. A number of previous studies on Moraga Road or adjacent to it have been conducted, namely Hall et al. (2000). These studies were negative for cultural resources. The overland portion of this pipeline alignment was surveyed using pedestrian techniques and employing a tablet computer with GPS/GIS¹⁴ capabilities to guide the survey along the proposed pipeline. An existing EBMUD pipeline parallels the proposed pipeline, and sections of the old pipe are visible above the surface at creek crossings. The alignment passes through mostly oak woodland and chaparral habitats—in some cases up steep slopes or along slope lines. Segments of the alignment that traverse slopes with grades over 15 percent would not likely contain archaeological deposits. Portions of the proposed pipeline alignment follow existing fire road trails, which allowed for greater surface visibility than other segments that were mostly covered by grasses. No archaeological deposits were identified during this survey. Nevertheless, this area is mostly undeveloped and has characteristics that would have been attractive to prehistoric hunter-gatherers (i.e., access to fresh water resources and game); therefore, long-term habitation and/or ephemeral campsites could exist anywhere in the construction zone, which would be subjected to a substantial amount of excavation and grading. Because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Sunnyside Pumping Plant

No cultural resources have been recorded on the proposed Sunnyside Pumping Plant site or were identified within the immediate vicinity. Two previous studies did not identify any cultural resources on this site (Chavez, 1983, 1984). The area has been previously disturbed. However,

¹⁴ GPS/GIS = geographic positioning system/geographic information system.

because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Tice Pumping Plant and Pipeline

No cultural resources have been recorded or were identified on the proposed Tice Pumping Plant and Pipeline project site or immediate vicinity. These areas have been previously disturbed. However, because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Withers Pumping Plant

No cultural resources have been recorded or were identified on the proposed Withers Pumping Plant project site or immediate vicinity. Three previous cultural resource studies have been conducted within the Withers Pumping Plant project area; these studies were negative for archaeological sites (Stillinger, 1978; Hall et al., 2000; Pastron, 1995). However, because unrecorded cultural resources could exist anywhere in the construction zone, this project could result in significant impacts to cultural resources. With implementation of Measure 3.7-1a, this impact would be reduced to a less-than-significant level.

Mitigation Measures

Measure 3.7-1a: EBMUD will include the following in WTTIP contract specifications for ground-disturbing activities, including excavation and grading. In the event of accidental discovery of cultural resources, such as structural features, bone, shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.), work will be suspended and EBMUD staff will be contacted. A qualified cultural resource specialist will be retained and will perform any necessary investigations to determine the significance of the find. EBMUD will then implement any mitigation deemed necessary for the recordation and/or protection of the cultural resources. In addition, pursuant to Sections 5097.97 and 5097.98 of the California Public Resources Code and Section 7050.5 of the California Health and Safety Code, in the event of the discovery of human remains, all work will be halted and the county coroner will be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission will be adhered to in the treatment and disposition of the remains.

Measure 3.7-1b: EBMUD will retain the services of a qualified archaeological consultant that has expertise in California prehistory to monitor ground-disturbing or vegetation removal activity within 500 feet of a known archaeological site. If an intact archaeological deposit is encountered, all soil-disturbing activities in the vicinity of the deposit will cease. The archaeological monitor will be empowered to temporarily redirect crews and heavy equipment until the deposit is evaluated. The monitor will immediately notify EBMUD of the encountered archaeological deposit. The monitor will, after making a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit, present the findings of this assessment to EBMUD. If the archaeological monitor

determines that the area being excavated does not contain archaeological materials, the monitor will modify the level of monitoring as needed.

If EBMUD, in consultation with the archaeological monitor, determines that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, EBMUD will:

- Redesign the project to avoid any adverse effects on the significant archaeological resource; or
- Implement an archaeological data recovery program (ADRP) (unless the archaeologist determines that the resource is of greater interpretive than research significance, and that interpretive use of the resource is feasible). If the circumstances warrant, an ADRP will be conducted. The project archaeologist and EBMUD will meet and consult to determine the scope of the ADRP. The archaeologist will prepare a draft ADRP that will be submitted to EBMUD for review and approval. The ADRP will identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain (i.e., the ADRP will identify the scientific/historical research questions that are applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions). Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods will not be applied to portions of the archaeological resources if nondestructive methods are practical.

Impact 3.7-2: Potential disturbance to paleontological resources.

All WTTIP Project Sites

A number of fossil discoveries have been documented within the greater Lafayette and Orinda areas—particularly within the bedrock along the ridges above San Pablo Dam, Lafayette Dam, and Briones Reservoir (UCMP, 2005). However, it does not appear that any specific paleontologic resource would be affected by the proposed WTTIP. No paleontologic resources have been located near the Sobrante and Upper San Leandro WTPs. Most of the project areas are within recent alluvial floodplain soils and surface deposits underlain by bedrock layers, which may yield deposits of ancient marine shell and other highly common accumulations of ancient life found in certain bedrock layers (e.g., the Briones Formation). However, these areas are less likely to harbor paleontological resources that would qualify as significant—in terms of scientific importance—for the purposes of CEQA (CEQA Guidelines Section 15064.5[a][3]).

Nevertheless, significant fossil discoveries can be made even in areas designated as having a low potential for such resources and could result from excavation activities related to the proposed program. Excavation activities can have a deleterious effect on such resources. This impact would be reduced to a less-than-significant level with the incorporation of the following mitigation measure.

Mitigation Measure

Measure 3.7-2: EBMUD or an appointed representative will notify a qualified paleontologist of any discoveries, document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in Section 15064.5 of the CEQA Guidelines. In the event a fossil is discovered during construction, excavations within 50 feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards (SVP, 1995). The paleontologist will notify EBMUD to determine procedures to be followed before construction is allowed to resume at the location of the find. If EBMUD determines that avoidance is not feasible, the paleontologist will prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and the plan will be implemented. The plan will be submitted to EBMUD for review and approval.

Impact 3.7-3: Disturbance or alteration to historic resources.

No historic architectural resources were located at or in the vicinity of the majority of the WTTIP project sites. However, four historic (or potentially historic) architectural resources are located near (and, in some cases, at) the following WTTIP project sites:

- Lafayette WTP
- Orinda WTP
- Moraga Road Pipeline
- Highland Reservoir and Pipelines

No significant direct impacts, such as demolition or substantial alteration, to historic or potentially historic resources at these project sites are expected, for the reasons detailed below. However, potential indirect impacts, such as alterations to the setting of a historic or potentially historic resource could occur as a result of the WTTIP projects. As described below, these impacts would be less than significant. Construction-related vibration, such as tunnel blasting, jack-and-bore techniques, trenching and backfill operations, and heavy construction equipment have the potential to damage fragile historic architectural resources immediately near the source of vibration. However, construction-related vibration is not expected to cause a significant adverse impact to historic resources due to the use of construction techniques that are intended to minimize vibration, and the relatively far distances between the source of construction vibration and historic architectural resources in the project areas. In addition, implementation of the performance standard of 0.5 inches per second peak particle velocity (as required in Measure 3.10-3a) would preclude damage to nearby structures (see Section 3.10, Noise and Vibration, for further detail).

Lafayette WTP – Alternative 1

Both the Bryant Pumping Plant #2 (located at the Lafayette WTP) and the Lafayette Reservoir Dam are considered historic resources for CEQA purposes. Various components of the proposed Lafayette WTP project under Alternative 1 would be constructed in the vicinity of the Bryant

Pumping Plant #2; however, no substantial alterations to this facility or its immediate setting are expected. The closest new construction to the Bryant Pumping Plant #2 would be the proposed raw water control valves and flow meters immediately northwest of the building. These improvements would be relatively small, would be located toward the rear of the building, and would not substantially alter the building (to the extent it would no longer remain eligible for listing as a historic resource). A new solids storage tank would also be constructed in the vicinity, about 150 feet west of the pumping plant. Due to the distance between the tank and the pumping plant, no substantial changes to the building's immediate setting are expected. Finally, the pumping plant would be decommissioned under Alternative 1; however, no physical changes to the plant are expected as a result of decommissioning. Although the building would become nonoperational, it would receive routine maintenance. No changes to the Lafayette Reservoir Dam are expected as a result of Alternative 1 of the Lafayette WTP project. As no direct or indirect impacts to the dam or pumping plant are expected, the proposed project would have a less-than-significant impact on historic resources.

Lafayette WTP – Alternative 2

Under Alternative 2, the Lafayette WTP would be decommissioned, including the Bryant Pumping Plant #2, which is considered a historic resource for CEQA purposes. The only proposed construction in the vicinity of the pumping plant would be the new Colorado Pipeline. This below-grade facility would be about 100 feet from the plant and would not be visible after completion of the pipeline project. No physical changes to the plant are expected as a result of decommissioning. Although the plant would become nonoperational, the building would receive routine maintenance. As no direct or indirect impacts to this building are expected, the proposed project would have a less-than-significant impact on historic resources.

Orinda WTP – Alternative 1 or 2

The Orinda WTP (also referred to as the Orinda Filter Plant) is a designated City of Orinda historical landmark and has been identified by EBMUD as a historic resource. No changes to this facility are planned under Alternative 1. However, substantial alterations to this building's historic setting could affect its status as a historic resource, if such alterations were of sufficient magnitude to affect the building's local designation or otherwise substantially diminish its historic significance. Due to the distance between the proposed new facilities and the Orinda WTP, and the relatively low-profile design, impacts to historic resources would be less than significant.

Under Alternative 1 or 2, several new structures would be constructed in the vicinity of the Orinda WTP: a backwash water recycle system facility, an emergency generator building, a solids pumping plant, a sludge storage tank, and a high-rate sedimentation unit facility. The latter facility is a potential future project evaluated at a program-level of detail in this EIR (refer to the discussion below). The backwash water recycle system would be mostly below grade and would be partially obscured by the existing two-story chemical building; therefore, this facility would be minimally visible when looking northwest from the front entrance of the Orinda WTP (i.e., the front door of the historic plant building). The above-grade facilities that would be highly visible

include the solids pumping plant, emergency generator building, and the sludge storage tank. These relatively small-scale industrial facilities would be about 16 feet tall and located approximately 100 feet southeast of the entrance gate on Manzanita Drive, and about 150 feet northwest of the front entrance of the Orinda WTP. These facilities would be visible when looking southeast from the entrance gate of the treatment plant, as well as when looking northwest from the front entrance of the Orinda WTP. No substantial changes to the historic setting of the Orinda WTP are expected, to the extent that this facility would no longer qualify as a local historic resource. However, additional landscaping in this area to screen the industrial equipment from view and soften its appearance would assist in maintaining its historic setting. As such, extra landscaping is recommended in Measure 3.7-3, below. Refer also to Section 6.4, which evaluates changes to the proposed layout of backwash water recycle facilities to diminish any adverse effect to the historic setting of the filter plant.

Alternative 2 would also include a clearwell at the existing backwash water settling basins, the new Los Altos Pumping Plant, the Orinda-Lafayette Aqueduct, and pipelines connecting these facilities. These new facilities would have no substantial direct or indirect impact on the historic setting of the Orinda WTP due to the distance between these facilities and the WTP, and the relatively low-profile design.

Walnut Creek WTP – Alternative 1 or 2

No historic resources were identified at the Walnut Creek WTP site or immediate vicinity. This facility was constructed by EBMUD in 1967 and is not of sufficient age to be eligible for listing as a cultural resource. Construction of a new pumping plant at the Walnut Creek WTP would not affect historic resources.

Sobrante WTP – Alternative 1 or 2

No historic resources were identified at the Sobrante WTP site or immediate vicinity. This facility was constructed by EBMUD in 1964 and is not of sufficient age to be eligible for listing as a cultural resource. Construction of the proposed improvements at the Sobrante WTP would not affect historic resources.

Upper San Leandro WTP – Alternative 1 or 2

No historic resources were identified at the Upper San Leandro WTP site or immediate vicinity. This facility was originally constructed by EBMUD in 1927, with major expansions and renovations in 1961 and 1991. Due to these later alterations to the WTP, this facility does not have sufficient physical integrity to be eligible for listing as a cultural resource. Construction of the proposed improvements at the Upper San Leandro WTP would not affect historic resources.

Orinda-Lafayette Aqueduct

Historic resources in the project area include the Lafayette Reservoir Dam and potentially the Bryant Pumping Plant #2. Neither of these facilities would be directly or indirectly affected by construction of the Orinda-Lafayette Aqueduct. One portion of this project, the proposed pipeline

to the new Highland Reservoir, would be constructed about 100 feet from the Bryant Pumping Plant #2. This pipeline would be below grade and would not be visible from the pumping plant. No substantial alterations to the pumping plant or its immediate setting are expected, and the building would continue to be eligible for listing as a historic resource after completion of the project. Similarly, no changes to the dam are expected. As a result, impacts to historic resources resulting from this project would be less than significant.

Ardith Reservoir and Donald Pumping Plant

The Ardith Reservoir and new Donald Pumping Plant would be located at the site of the existing Donald Pumping Plant, which was constructed in 1960. Due to the recent date of construction of the Donald Pumping Plant, this site is not eligible for listing as a historic resource. Adjoining properties at 122 and 128 Ardith Drive and 2 Westover Court are single-family Ranch-style homes constructed in 1978, 1960, and 1959, respectively (Contra Costa County, 2005), and are not eligible for listing as historic resources due to their recent construction dates. Therefore, no impacts to historic resources would occur.

Fay Hill Pumping Plant and Pipeline Improvements

Due to the recent date of construction of the Fay Hill Pumping Plant (1965), this facility is not eligible for listing as a historic resource. Therefore, no impacts to historic resources would occur.

Fay Hill Reservoir

Due to the recent date of construction of the Fay Hill Reservoir (1965), this facility is not eligible for listing as a historic resource. Therefore, no impacts to historic resources would occur.

Glen Pipeline Improvements

No historic resources were identified in the vicinity of the Glen Pipeline project area (i.e., within the right-of-way of Nordstrom Lane and Glen Road) that could be adversely affected by this project. While many older homes (i.e., 50 years old or older) are located along Nordstrom Lane and Glen Road, they would only be eligible for listing as historical resources if other significance criteria applied, such as associations with important historical events or individuals, or substantial architectural significance. Although these homes have not been evaluated for their potential historical and architectural significance, no direct or indirect impacts to them would occur as a result of the project. As a result, no impacts to historic resources would occur.

Happy Valley Pumping Plant and Pipeline

The Happy Valley Pumping Plant would be a two-story building, approximately 1,500 square feet in size, constructed on an undeveloped site adjacent to existing single-family homes. No historic resources have been recorded within the project area or immediate vicinity. Adjoining properties at 156, 157, and 164 Lombardy Lane are single-family Ranch-style homes constructed in 1948, 1955, and 1977, respectively (Contra Costa County, 2005). The home at 156 Lombardy Lane is 58 years old (as of 2006), but would only be eligible for listing as a historical resource if other significance criteria applied, such as associations with important historical events or individuals,

or substantial architectural significance. While these homes have not been evaluated for their potential historical and architectural significance, no direct or indirect impacts to them would occur as a result of the project. As a result, no impacts to historic resources would occur.

Highland Reservoir and Pipelines

The only potential historic resource located near the Highland Reservoir and Pipelines project area is the Lafayette Reservoir Dam. This project component would not significantly affect, either directly or indirectly, the potential historic significance of this structure. As a result, no impacts to historic resources would occur.

Lafayette Reclaimed Water Pipeline

The Lafayette Reclaimed Water Pipeline would be constructed from the central portion of the Lafayette WTP, run south across Lafayette Creek across Mt. Diablo Boulevard and join the alignment of the Highland Reservoir Inlet/Outlet Pipeline (see previous heading). There are no known historic sites within the Lafayette WTP boundaries. However, both the Bryant Pumping Plant #2 (located at the Lafayette WTP) and the Lafayette Reservoir Dam are considered historic resources for CEQA purposes. No substantial alterations to the Bryant Pumping Plant or its immediate setting are expected. No changes to the Lafayette Reservoir Dam are expected as a result of the Lafayette Reclaimed Water Pipeline project. As no direct or indirect impacts to the dam or pumping plant are expected, the proposed project would have a less-than-significant impact on historic resources.

Leland Isolation Pipeline and Bypass Valves

There are no historic resources located within or immediately adjacent to the Leland Isolation Pipeline and Bypass Valves project area that could be affected by this portion of the project.

Moraga Reservoir

Due to the recent date of construction of the Moraga Reservoir (1960), this facility is not eligible for listing as a historic resource. Adjoining properties at 312–328 Donald Drive and 245–253 Draeger Drive are single-family ranch-style homes constructed between 1969 and 1971 (Contra Costa County, 2005) and are not eligible for listing as historic resources due to their recent construction dates. Therefore, no impacts to historic resources would occur.

Moraga Road Pipeline

The only recorded historic resource in the vicinity of the Moraga Road Pipeline project is the Rheem Estate/Hacienda de las Flores property, located immediately west of Moraga Road between Donald Drive and Devin Drive. This property, although highly modified, has been identified as a Town of Moraga historical resource. The pipeline would be constructed within the Moraga Road right-of-way and would have no direct or indirect impacts to this historic property. After completion, the pipeline would not be visible from this historic resource, and the property's historic setting would remain intact. For these reasons, the proposed pipeline would have a less-than-significant impact on the Rheem Estate/Hacienda de las Flores property.

The Moraga Road Pipeline would also be constructed through a remnant orchard at the base of the Lafayette Reservoir Dam; this orchard may have been part of a larger orchard that once existed in the valley before the property was condemned by EBMUD in the 1920s. No historic farmhouses or related structures in the area appear to be associated with the orchard. While the orchard itself is likely over 75 years old, the setting has been highly altered and the orchard would not likely qualify as a historic resource/historic landscape in the future, even upon further research. Changes to this orchard would not affect historic resources.

Sunnyside Pumping Plant

The Sunnyside Pumping Plant would be a two-story building, approximately 1,500 square feet in size, on an undeveloped site adjacent to existing single-family homes. No historic resources have been recorded within the project area or immediate vicinity. The nearest adjoining property (a single-family home at 231 Sundown Terrace, Orinda) was constructed in 1989 (Contra Costa County, 2005) and is not eligible for listing as a historic resource due to its recent construction date. Therefore, no impacts to historic resources would occur.

Tice Pumping Plant and Pipeline

The Tice Pumping Plant would be a two-story building, approximately 2,100 square feet in size, on an undeveloped site adjacent to existing single-family homes on Olympic Boulevard in unincorporated Contra Costa County. No historic resources have been recorded on the project site or immediate vicinity. The nearest adjoining properties to the pumping plant site, located at 2424 and 2431 Olympic Boulevard, are single-family homes constructed in 1945 and 1948, respectively (Contra Costa County, 2005). These homes could be eligible for listing as historical resources due to their age (61 and 59 years old, respectively, as of 2006), but only if other significance criteria applied, such as associations with important historical events or individuals, or substantial architectural significance. While these homes have not been evaluated for their historical or architectural significance, no substantial direct or indirect impacts would occur to them as a result of the project. As a result, no impacts to historic resources would occur.

Withers Pumping Plant

Due to the recent date of reconstruction of the Grayson Reservoir (reconstructed in 1998), this facility is not eligible for listing as a historic resource. The Withers Pumping Plant would be a two-story building, approximately 1,500 square feet in size, on an undeveloped site just below the existing reservoir. Adjoining properties at 10–16 Silverhill Way and 1124–1140 Silverhill Court (constructed between 1984 and 1988) and at 2578–2590 Pebble Beach Loop (constructed in 1963) are single-family Ranch-style homes (Contra Costa County, 2005). These homes are not eligible for listing as historic resources due to their recent construction dates. Therefore, no impacts to historic resources would occur.

Mitigation Measure

Measure 3.7-3: To reduce potential indirect effects to the historic setting of the Orinda WTP, EBMUD will provide additional landscaping around the proposed emergency

generator building, solids pumping plant, sludge storage tank, and (if implemented) high-rate sedimentation unit to screen these industrial elements from view and soften their visual appearance. This measure is in addition to the landscape treatments already proposed for the immediate area as part of the project and will be included in an amended landscape plan for the Orinda WTP project.

Program-Level Elements

Although many of the areas designated for future program-level projects have been previously developed and disturbed, cultural resources could exist anywhere in the potential construction zone and could be affected, particularly where a substantial amount of excavation and grading occurred. Therefore, many of the construction-related impacts described under the project-level analysis above would also apply to the program-level projects, as would the mitigation measures to reduce their effects to a less-than-significant level.

Lafayette WTP

The project-level discussion and analysis for the Lafayette WTP, above, would apply to the program-level projects at the Lafayette WTP. However, because unrecorded cultural resources may exist anywhere in the construction zone, a measure similar to Measures 3.7-1a and 3.7-1b, described above, would also likely be required.

Orinda WTP

The proposed program-level facilities are within the area studied for the project-level analysis presented above; therefore, the impacts to cultural resources would be the equivalent to those identified in the project-level analysis, and a measure similar to Measure 3.7-1a would also likely apply.

One program element proposed at the Orinda WTP is construction of a high-rate sedimentation unit, about 10,000 square feet in size and one story high. This facility would be about 200-feet north of the historic Orinda WTP and would be visible across the parking lot from the front entrance to the WTP. This facility would also be visible from the entrance gate at Manzanita Drive when looking southeast toward the WTP. While no substantial changes to the historic setting of the Orinda WTP are expected, to the extent that this property would no longer qualify as a local historic resource, extra landscaping in this area to screen the industrial equipment from view and soften its visual appearance would assist in maintaining the building's historic setting. As such, extra landscaping is recommended, as described in Measure 3.7-3. Under the Modified Orinda WTP Site Plan Alternative, described in Chapter 6 (Section 6.4), the location of the high-rate sedimentation unit would be reevaluated to determine whether an alternative location farther than the filter plant building was feasible. No other indirect impacts to historic resources are expected to occur as a result of this program-level work at the Orinda WTP.

Walnut Creek WTP

The project-level discussion and analysis for the Walnut Creek WTP, above, would apply to the program-level projects at the Walnut Creek, and a measure similar to Measure 3.7-1a would also likely apply.

Leland Reservoir Replacement

Archaeological Resources

The area surrounding the existing Leland Reservoir was surveyed by Hayes and Melandry (1990) with negative results. Two prehistoric sites were identified within a quarter-mile of the reservoir:

- CA-CCo-236. This site, also known as the Buchan Mound, was originally recorded by Loud (1913) and is located near the on-ramp to Highway 24, north of Old Tunnel Road. The site was disturbed in 1957 when residences were built over the site. Baker et al. (Baker, 1987; Baker et al., 1994) conducted data recovery on the site and removed burials. Components of this site may occur elsewhere along Reesley Creek.
- CA-CCo-237. This site, located on the west bank of Reesley Creek, is a similar site to CA-CCo-236. It does not appear that this site has been extensively studied.

Due to the existence of recorded cultural resources in the area, the Leland Reservoir Replacement project would have a moderate to high sensitivity for encountering cultural resources during excavation activities. Because unrecorded cultural resources may exist anywhere in the construction zone, a measure similar to Measure 3.7-1a would also likely apply.

Historic Architectural Resources

The reservoir went into service in the late 1950s and is not a historic resource due to its date of construction. No historic architectural resources were identified in the Leland Reservoir project vicinity that could be directly or indirectly affected by the proposed replacement project.

New Leland Pressure Zone Reservoir and Pipeline

Two cultural resources have been recorded within a quarter-mile of the New Leland Pressure Zone Reservoir and Pipeline project area:

- CA-CCo-388H. This site was recorded as a Southern Pacific rail line that does not likely have significance (Milliken, 1979).
- CA-CCo-431. This site (also called the Murwod School Site) was identified as a large habitation site with burials located near San Ramon Creek (Fong, 1990). The site was excavated and the burials removed. It appears the proposed pipeline and reservoir would avoid this site.

The project area may contain unknown cultural resources that could be encountered during construction of the reservoir, access road, and pipeline. With implementation of a measure similar to Measure 3.7-1a, direct effects to cultural resources would be avoided.

St. Mary's Road/Rohrer Drive Pipeline

Archaeological Resources

The upland areas along the western edge of St. Mary's Road were surveyed by Self (1990) and Schroder and Origer (2003); both surveys were negative for newly identified cultural resources. A previously recorded site, CA-CCo-640H, is located near the intersection of Rheem Boulevard and St. Mary's Road. This site is described as the possible remains of the 1860 residence of David and George Carrick, emigrant cattle ranchers (Self, 1991). A single bedrock mortar prehistoric feature is also present.

The St. Mary's Road portion of the St. Mary's Road/Rohrer Drive Pipeline would parallel the right-of-way of the former Oakland-Antioch/Sacramento Northern Railroad connecting Moraga to Oakland in the early 20th century. The former railroad right-of-way is now the Moraga Trail, a paved recreational path that parallels Moraga Road for some distance. Historic-era artifacts, such as railroad ties or iron spikes from the prior use as a railroad alignment, could be discovered anywhere along the proposed pipeline route. Two historic sites are located near the present-day intersection of Moraga Road and St. Mary's Road, including the Willow Spring School Site, the first school erected in Moraga Valley in 1855, and the David Carrick House, described above, thought to be one of the oldest houses in Moraga (Contra Costa County, 1989).

As a result, the St. Mary's Road/Rohrer Drive Pipeline project has a relatively high sensitivity for encountering cultural resources during construction. Therefore, a measure similar to Measure 3.7-1a would also likely apply to this program-level project.

Historic Architectural Resources

The only recorded historic resource in the vicinity of St. Mary's Road is St. Mary's College in Moraga. As part of this project, a new pipeline would be placed in the right-of-way of St. Mary's Road, as described above. The road is more than 1,500 feet west of the closest of the original Spanish-style buildings at the college campus. Due to this distance, no direct or indirect impacts to historic resources at St. Mary's College are expected. After completion, the pipeline would not be visible from these historic resources, and their historic setting would remain intact. No impacts to historic architectural resources resulting from the St. Mary's Road/Rohrer Drive Pipeline project are expected.

San Pablo Pipeline

The San Pablo Dam and Reservoir contains numerous recorded prehistoric sites,¹⁵ many of which have been inundated by the reservoir; however, many others have been identified along the margins of the reservoir and Old San Pablo Dam Road (see Pahl & Weinberg, 1982, for details). Due to the existence of recorded sites in the area, unrecorded cultural sites are more likely to be discovered along the pipeline route.

¹⁵ For example, CA-CCo-404H, CCo-406, CCo-409, CCo-412H, and C-1296.

The San Pablo Dam Pipeline would be constructed within the Old San Pablo Dam Road alignment, which was the original right-of-way for the former California-Nevada Railroad between El Sobrante and Orinda in the 1880s. The pipeline would also pass through the vicinity of Wagner Ranch and “Orinda Park,” Orinda’s first settlement near the present-day intersection of San Pablo Dam Road and Bear Creek Road. Although the area has been previously disturbed, historic-era artifacts from these prior uses could be discovered anywhere along the pipeline route.

As a result, the San Pablo Dam Pipeline project has a relatively high sensitivity for encountering cultural resources during construction. Because unrecorded cultural resources may exist anywhere in the construction zone, a measure similar to Measure 3.7-1a would also likely apply.

No historic architectural resources were identified within or adjacent to the San Pablo Dam Pipeline project area that could be directly or indirectly affected by this pipeline project.

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