

G:\Projects\30019 Contra Loma\GIS\Working Mxds\30019 Figure 3-16 Soils Slope.mxd 2011-07-06 edouglas revised 2013-05-29 tmooney



Figure 3-16
Soils at Contra Loma Reservoir and Recreation Area

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Table 3-13. Soil Units and Properties within Contra Loma Regional Park*

Map Unit	Map Unit Name	Slope Range %	Soil Depth (in) ¹	Drainage Class ²	Hydrologic Soil Type ²	% Sand	% Silt	% Clay	Soil Erodibility (K-factor)
AbD	Altamont Clay	9-15	48	Well Drained	D	22	28	50	.20
AbE	Altamont Clay	15-30	48	Well Drained	D	22	28	50	.20
AcF	Altamont-Fontana Complex ³	30-50	48/22	Well Drained	D/B	22/18	28/51	50/31	20/37
CaC	Capay Clay	2-9	>72	Moderately Well Drained	D	22	28	50	
CkB	Cropley Clay	2-5	>60	Moderately Well Drained	D	22	28	50	
DdD	Diablo Clay	9-15	42	Well Drained	D	22	28	50	.20
Ld	Lodo-Rock Outcrop Complex ³	35-55	18/NA	Somewhat Excessively Drained	D/NA	35/NA	34/NA	31/NA	.20
MeG	Millsholm Loam	50-75	12	Well Drained	D	39	37	24	.20
Pb	Pescadero Clay Loam	0-2	>66	Poorly Drained	D	35	34	31	.28
RbC	Rincon Clay Loam	2-9	>60	Well Drained	C	35	34	31	.28
W	W	0	NA	NA	NA	NA	NA	NA	NA

Notes: *Soil extent and properties were identified and characterized using the Department of Agriculture's Natural Resource Conservation Service Web Soil Survey Database (Natural Resources Conservation Service 2011)

¹ –Maximum depth to bedrock

² - Properties of each soil in the complex listed in order by name and separated by a slash mark ("/").

Landslides

Landslides include earthflows, slumps, and translational slides. Landslides and related areas of instability have been mapped within the Contra Loma Recreation Area and adjacent EBRPD lands (Wentworth et al. 1997). Future landslides are most likely to occur within and around places where landslides have previously occurred. One area of unstable terrain is mapped within the eastern half of the Contra Loma Recreation Area (Figure 3-16). The steeper upland terrain of the EBRPD lands contains numerous areas of mapped landslide activity and associated areas of instability. Landslides can occur in response to changes in water content, earthquake shaking, or removal of downslope support. Landslides in the type of terrain that is typically found in the Contra Loma area tend to be shallow and slow moving, and pose minimal threat to public safety. Landslides can, however, deform the ground surface and damage infrastructure.

3.13 Climate and Air Quality

3.13.1 Existing Conditions

Climate

The climate in the Bay Area is characterized by dry summers and moderately wet winters, with 75 percent of the average annual rainfall occurring in winter. Precipitation amounts can vary greatly, sometimes within short distances. Annual rainfall can range from less than 16 inches in valley areas to 40 inches in mountainous areas (City of Antioch 2003b). In Antioch, the monthly average precipitation ranges from 0.02 inch (July) to 2.76 inches (January), with an annual average total of 13.09 inches. No snowfall has been recorded for the period from March 1, 1955 to June 30, 2000 (City of Antioch 2003b).

During the summer months (June, July, and August) the Bay Area experiences little precipitation and winds tend to blow onshore from the north and northwest. Pollution potential is higher during the summer months due to strong northwesterly winds (City of Antioch 2003b). During summer months, the California coast and coastal cities often experience fog and stratus clouds due to heavy condensation.

For the period from March 1, 1955 to June 30, 2000, average high temperatures in Antioch ranged from 53.6°F (January) to 90.9°F (July). The annual average maximum was 73.3°F. During this period, monthly average minimum temperatures ranged from 36.7°F (January) to 57.1°F (July). The annual average minimum was 47.6°F.

Summertime temperatures in the Bay Area are greatly influenced by differential heating between land and water surfaces. Land areas heat and cool more quickly than water areas. This difference often creates a large-scale temperature gradient between the coast and the Central Valley. Small-scale local gradients are also produced near shorelines. On summer afternoons, coastal temperatures can be 35 degrees cooler than inland temperatures. In the winter, the daytime temperature contrast between coastal and inland areas is usually small but the nighttime temperature variation is large, with warmer nighttime temperatures near the coast and cooler nighttime temperatures further inland (City of Antioch 2003b).

Antioch is located on the south side of the Carquinez Strait, the only sea-level gap in the Coast Ranges of California. Strong, persistent winds usually flow westward through the Carquinez Strait. Wind speeds are generally highest in spring and summer and lowest in fall and winter. During the spring and summer, the daily wind speed variation is greatest, with wind speeds peaking in the late afternoon. During fall and winter, wind speeds and directions are more variable (City of Antioch 2003b).

Air Quality

The Bay Area Air Quality Management District (BAAQMD) operates a network of 28 air monitoring stations that measure air quality levels in the Bay Area. The stations nearest to Contra Loma are located in Concord (14 miles to the west) and Bethel Island (9 miles to the east). The Bay Area is in non-attainment for Federal ozone standards, and for particulate matter (PM) smaller than 2.5 micrometers (PM_{2.5}) and 10 micrometers (PM₁₀) (Bay Area Air Quality Management District 2010).

Ozone is harmful to public health when it occurs at high concentrations near ground level where it can be inhaled. Ozone can damage the tissues of the respiratory tract and lungs. High concentrations can irritate the nose, throat, and respiratory system, and constrict the airways. Ozone can also aggravate other respiratory conditions and can have negative cardiovascular effects.

Ozone is not emitted directly into the air by a source such as a vehicle, but is formed through a complex series of chemical reactions involving other compounds that are directly emitted. These directly emitted pollutants (also known as ozone precursors) include reactive organic gases (ROGs) and nitrogen oxides (NOx). The principal sources of ROGs and NOx are the combustion of fuels and the evaporation of solvents, paints, and fuels. The main sources of ozone precursors in the Bay Area are motor vehicles; evaporation of solvents, fuels, and other petroleum products; and combustion at industrial and other facilities (Bay Area Air Quality Management District 2010). Ozone levels are usually highest on hot, windless summer afternoons, especially in inland valleys.

The time period required for ozone formation allows the reacting compounds to spread over a large area, producing a regional pollution problem. Ozone problems are the cumulative result of regional development patterns rather than the result of a few significant emission sources. Depending on meteorological conditions, ozone precursors can be transported well away from the source area before ozone concentrations peak.

PM can consist of many types of particles, including chemical elements such as carbon and metals; compounds such as nitrates, sulfates, and organics; or complex mixtures such as diesel exhaust, wood smoke, and geological dust. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases; heart and lung disease; and coughing, bronchitis, and respiratory illnesses in children. According to the BAAQMD, fine PM may be the air pollutant that is most harmful to public health in the Bay Area. Additional effects of PM include reduced visibility and soiling of buildings. PM may also influence climate change. Sources of PM include combustion of fossil fuels, wood and agricultural burning, and geological dust, which includes construction dust, road dust, and windblown dust (Bay Area Air Quality Management District 2010).

The strong, persistent winds in Antioch reduce the atmospheric potential for localized air pollution. These winds dilute pollutants and transport them to surrounding regions. Pollutants generated or carried through Antioch by the wind are often carried eastward into the Sacramento and San Joaquin valleys. Likewise, pollutants generated in other portions of the Bay Area to the west are transported to Antioch (City of Antioch 2003b).

Ozone precursors (ROG and NOx) are generated within Contra Loma by fossil fuel combustion from motorized vehicle and maintenance equipment use and by evaporation of solvents, fuels, and other petroleum products used for construction and maintenance activities. PM sources within Contra Loma include fossil fuel combustion, dust generated by construction and maintenance activities, and windblown dust. Ozone precursors and PM are also generated by vehicles traveling to and from Contra Loma.

Some types of land uses are considered more sensitive to air pollution than others. Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, schools, convalescent facilities, and residential areas. Parks such as Contra Loma may also be considered sensitive receptors because they attract children and are used for aerobic recreation activities. Sensitive receptors in the vicinity of Contra Loma include nearby residential areas.

Particulate air pollutants, from both naturally occurring and human sources, have been monitored by the BAAQMD at several monitoring stations near Contra Loma, but not within or adjacent to Contra Loma (Bay Area Air Quality Management District 2013). Monthly average levels of PM₁₀ (particulates 10 microns and less in size) at the Concord monitoring station in 2012 were 12.6 micrograms per cubic meter (ug-3). In 2012, the maximum 24-hour PM₁₀ level at Concord was 35 ug-3. In 2012, the monthly average PM₁₀ level at Bethel Island was 14.1 ug-3, with a maximum 24-hour of PM₁₀ level of 52 ug-3. BAAQMD's Concord station monitored a monthly average PM_{2.5} level of 6.5 ug-3 in 2012 and a maximum 24-hour PM_{2.5} level of 32.2 ug-3. California maximum 24-hour standards for PM₁₀ were exceeded on one day in 2012 at Bethel Island but were not exceeded at Concord. California and National annual standards for PM₁₀ were not exceeded at either station, nor were California or National PM_{2.5} standards exceeded at Concord. BAAQMD does not maintain any stations to monitor particulates closer to Contra Loma than these stations, and does not monitor PM_{2.5} at Bethel Island.

Climate Change

Various gases in the earth's atmosphere, classified as atmospheric greenhouse gases (GHG), play a critical role in determining the earth's surface temperature. Prominent GHGs include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, chlorofluorocarbons, and sulfur hexafluoride. Human-generated emissions of GHGs which exceed natural ambient concentrations are responsible for intensifying the earth's natural greenhouse effect and have led to a trend of unnatural warming of the Earth's climate, known as global climate change or global warming (Ahrens 2003).

Evidence for historic warming of the Earth's climate system, including Earth's near-surface air and ocean temperatures, is now considered to be unequivocal, with global surface temperature having increased approximately 1.33°F over the last 100 years. Future global climate change trends and implications for the U.S. are projected to include:

- An increase in global average temperature between 2 and 11°F over the next 100 years;
- More frequent and longer warm weather extremes across North America;
- A decrease in mean annual precipitation in the southwestern U.S. but an increase over the rest of the continent;
- Widespread increases in extreme precipitation, with greater risks of not only flooding from intense precipitation, but also droughts from greater temporal variability in precipitation;

- Sea level rise from 7 to 23 inches by the end of this century; and
- Reduced snowpack in the western mountains, more winter flooding, and reduced summer flows that would adversely affect the supply of water resources (Intergovernmental Panel on Climate Change 2007).

In the Bay Area, climate change is expected to increase the number of high heat days and wildfires, which would likely exacerbate air pollution in the Bay Area and hinder efforts to attain air quality standards for ozone and PM (Bay Area Air Quality Management District 2010).

Unlike criteria air pollutants, such as ozone and PM, which are pollutants of regional and local concern, GHGs are global pollutants; consequently, climate change is a global problem. In the Bay Area, transportation and commercial and industrial sources generate the most GHG emissions, accounting for about 70 percent of the Bay Area's GHG emissions. Of these sources, passenger vehicles are the largest, generating about 27 percent of the Bay Area's GHGs. Electricity generated for Bay Area utilities, including electricity imported from outside the Bay Area, accounts for about 16 percent of the GHGs generated by the Bay Area (Bay Area Air Quality Management District 2010). GHG sources attributable to Contra Loma's land uses and activities include passenger vehicle trips, electricity use, fossil fuel combustion from motorized vehicles and maintenance equipment, and livestock use.

The City's baseline community wide GHG emissions inventory was completed in February 2008 as part of the City of Antioch Municipal Climate Action Plan, with a grant from the International Council for Local Environmental Initiatives (City of Antioch 2011c). The inventory reveals that for the year 2005, the City released 308,954 metric tons of CO₂ (MTCO₂e) in 2005 and, if steps are not taken to achieve reductions, the City is projected to emit 75,000 more MTCO₂e in 2020. The City's total community-wide GHG emissions in 2005 are equivalent to the emissions generated by 60,000 passenger vehicles.

3.14 Noise

3.14.1 Existing Conditions

Transportation noise is the most dominant source of noise in the City, followed by noise generated from other routine activities and equipment use. The overall amount of traffic has less influence on road noise levels than vehicle speed and the number of trucks (City of Antioch 2003b).

Contra Loma's noise environment is consistent with its suburban/semi-rural setting. Contra Loma is surrounded by residential areas to the north and southeast, a golf course to the east, and open space to the west and southwest. These land uses typically do not generate substantial volumes of noise. James Donlon Boulevard runs along the northern boundary of the Community Park and is the dominant off-site noise source. Noise from James Donlon Boulevard is more noticeable from the Community Park than from the Regional Park. Distance and intervening topography greatly reduce the level of road noise that is audible from most areas of the Regional Park. Frederickson Lane generates transportation noise that is audible in the southeast portion of the Regional Park; however, similar to James Donlon Boulevard, distance and intervening

topography greatly reduce the level of road noise that is audible from most areas of the Regional Park. Aircraft overflights are an intermittent contributor to overall background noise levels as there are no major airports near Antioch.

Noise generated within Contra Loma includes vehicle and mechanical equipment noise, maintenance activities, human voices, sports whistles, wildlife and livestock sounds, splashing water, and gate sounds. Noise from vehicles and mechanical equipment includes motors, closing doors and trunks, and tire squeal. Noise from maintenance activities can include equipment and vehicle noise, trash can handling, mowing, and other activities. Human voices in the area usually range from typical conversations to cheers, shouting, and crowd noise associated with sports league play. Noise generated by sports league play at the Community Park includes vehicle noise, sports whistles, and human voices. Sports league play represents a prominent source of noise generated within Contra Loma. Boating is restricted to electric and human-powered vessels; therefore, boat noise is not a substantial noise source within Contra Loma.

The highest noise levels at Contra Loma are located near James Donlon Road and other locations with a high concentration of human and mechanical activity. These locations include the Community Park sports fields and parking lots, the high-use recreation areas along the south shore of the reservoir, parking areas, and trash collection areas. Noise levels generated by recreational land uses and activities vary depending on the timing and intensity of use and activity. Most recreational activity, including sports league play, occurs during evenings and weekends, whereas maintenance activities are typically performed during the day. The intensity of various types of recreational activities also varies seasonally.

Sensitive noise receptors include residences, schools, hospitals, and places of worship. The only sensitive noise receptors within ¼ mile of Contra Loma are the residences to the north and southeast. The nearest residences to the Community Park are north of the park on the opposite side of James Donlon Boulevard. These single-family residences are located 400 feet from sports fields 1 through 3 in the western portion of the Community Park, 500 feet from sports fields 4 and 5, and 200 feet from the parking lots. On the east side of the Community Park, single-family residences are located 1,400 feet from sports fields 4 and 5 and 700 feet from the eastern parking lot. Multi-family residences are located several hundred feet northwest of the Community Park.

The nearest residences to the Regional Park are the single-family residences directly adjacent to the northwest boundary of the park and those backing up to Frederickson Lane on the southeast side of the Regional Park. Visitor use in the northwest and southeast portions of the Regional Park near these residences is primarily limited to hiking, which is a relatively quiet activity that does not generate substantial noise. The residential areas within ¼ mile of Contra Loma have already been completely built-out. Therefore, no new residences are expected to be built in the vicinity of Contra Loma. Neither EBRPD nor the City has received noise complaints from nearby residents.

3.15 Visual Resources

3.15.1 Existing Conditions

Visual Character of Contra Loma

The visual setting of the Contra Loma Recreation Area is consistent with its location and character as a regional and community park on the northern edge of the Diablo Range. Views from any given location may include rolling grassland, oak woodland, hills and ridges, the reservoir surface, riparian and wetland habitat, the swim lagoon, park buildings, sports fields, picnic areas, roads, parking areas, and nearby suburban land uses (see Photographs 1 through 12 and Figure 3-17).

The primary visual elements of the recreation area include rolling hills and ridges supporting grassland with scattered oaks, grass-covered valleys, the reservoir surface, and the landscaped recreation facilities along the south side of the reservoir and within the Community Park. The dam is not a primary element of views from most locations in Contra Loma. The dam face can be seen from some areas of the Community Park near the dam; but for most of Contra Loma, views of the dam only include a narrow portion of the rock-dam crest rising above the reservoir water.

The primary visual features located outside Contra Loma and visible from within Contra Loma are the grass- and tree-covered foothills of Mt. Diablo to the south and west, and the landscaping, buildings, and structures of the suburban areas of Antioch to the northwest, north, east, and southeast.

Views From within Contra Loma

Views from within Contra Loma also vary depending on the viewer's location. Views from locations on or near the reservoir can include the reservoir surface and shoreline, fishing docks, the boat launch, landscaped picnic areas, the swim lagoon, restrooms, shower facilities, the food concession area, and the EBRPD office. Distant views can also include hills, ridges, and suburban land uses near Contra Loma (see Photographs 1 through 6 and Figure 3-17).

Views from within the Community Park can include sports fields, play grounds, picnic areas, parking lots, trails, and restrooms located within the park. Distant views can also include portions of the Regional Park, and nearby hills, ridges, and suburban land uses. The dam face may also be seen from some locations in the northwesternmost portion of the Community Park (see Photographs 7 through 9 and Figure 3-17).

Views to the north and east from the ridge tops along the southern and western margins of Contra Loma include the reservoir and dam, the landscaped facilities along the southern shoreline of the reservoir, grassland, and distant views of Antioch and the Delta beyond. Views to the south and west from these ridges include distant views of suburban land uses and the grass- and tree-covered foothills of the Diablo Range (see Photographs 10 and 11 and Figure 3-17).

Views of Contra Loma from Offsite Locations

Views of Contra Loma from offsite vary depending on the viewer's location. Views from the north include the grass-covered face of Contra Loma Dam, the dam facilities, and the landscaping, sports fields, and parking lots of the Community Park. Elevated views of Contra Loma from the north also include the grassy ridges south and west of the reservoir (see Photograph 12 and Figure 3-17). Views from the east, such as from Lone Tree Golf Course or nearby residences, can include rolling grassland, ridges, landscaping, and sports fields. Views from the south and west are limited to the grassy ridges that line Contra Loma's southern and western margins, although very distant views of other portions of Contra Loma may be available from higher elevation viewpoints on the flanks of Mt. Diablo.

Nighttime views of the Community Park are generally dark, except when the sports fields in the western half of the park are illuminated for night time use. Nighttime views of the Regional Park from offsite locations are generally dark, because nighttime lighting is very limited and nighttime activity is minimal.



Photograph 1. View southwest across the reservoir toward the swim lagoon, picnic areas, and distant ridgelines.



Photograph 2. View north across the reservoir toward the dam with a fishing dock in the foreground. Suburban land uses are visible in the distance.

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Photograph 3. View east along the reservoir's southern shoreline within the picnic area east of the swim lagoon.



Photograph 4. View northeast across the swim lagoon and reservoir toward the dam. Steam from an exhaust stack is visible in the distance.



Photograph 5. View northeast along the reservoir's southern shoreline toward the boat launch. Wetland and riparian vegetation is visible.



Photograph 6. Picnic, restroom, and shower facilities adjacent to the swim lagoon.



Photograph 7. View north across Antioch Community Park multi-use sports fields with residences in the distance.



Photograph 8. Soccer field in Antioch Community Park.



Photograph 9. Playground in Antioch Community Park.



Photograph 10. View northeast from the Lake View Trail across the reservoir and dam with distant views of Antioch and the Delta.

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Photograph 11. View southeast from the southern ridgeline with distant views of suburban land uses and rolling foothills of the Diablo Range.



Photograph 12. View south from offsite. Antioch Community Park is on the left, Contra Loma Dam is on the right, and the Diablo Range foothills are in the distance.



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Figure 3-17
Photo Locations

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3.16 Hazards

3.16.1 Existing Conditions

Hazardous Materials

Superfund is the Federal government's program to clean up the nation's hazardous waste sites. Table 3-14 lists the three active and five archived hazardous waste sites that are located in the City. The site locations are shown on Figure 3-18. Active sites are sites at which site assessment, removal, remediation, enforcement, cost recovery, or oversight activities are being planned or conducted under the Federal Superfund program; the archive designation indicates that the site is of no further interest under the Superfund program. None of the eight sites in the City are on the National Priorities List. The nearest active site to Contra Loma is the GBF, Inc. dump site, one mile northwest of Contra Loma (U. S. Environmental Protection Agency 2011).

Table 3-14. Summary of Hazardous Waste Sites Recorded in Antioch, California

Site Name/ EPA ID	Site Number (see Figure 3-18)	Status	Location	Approximate Distance from Contra Loma
Antioch Radiator Exchange/ CAD982488942	1	Active	908 West 2nd Street, Antioch, CA 94509	3 miles north of Contra Loma
Fulton Shipyard/ CAD009151762	2	Active	307 Fulton Shipyard Road, Antioch, CA 94509	3 miles north of Contra Loma
GBF, Inc., Dump/ CAD980498562	3	Active	Along James Donlon Boulevard, Antioch, CA 94509	1 mile northwest of Contra Loma
Abandoned Drum - Antioch/ CAD981621956	—	Archived	Antioch, CA 94509	Unknown
Antioch Disposal Site/ CAD980496855	4	Archived	Paso Corto and Somersville roads , Antioch, CA 94509	1 mile northwest of Contra Loma
E. I. Dupont de Nemours & Company, Inc./ CAD009151671	5	Archived	Wilbur Avenue at Bridgehead Road, Antioch, CA 94509	4 miles northeast of Contra Loma
Gaylord Container Corporation East Plant/ CAD009148180	6	Archived	Wilbur Avenue at Viera Avenue, Antioch, CA 94509	4 miles northeast of Contra Loma
PG&E Contra Costa Power Plant/ CAT080011489	7	Archived	Wilbur Avenue, Antioch, CA 94509	4 miles northeast of Contra Loma

Source: U. S. Environmental Protection Agency 2011

GeoTracker is the SWRCB's data management system for managing sites that affect groundwater, especially those that require groundwater cleanup, such as Underground Storage Tanks (USTs), Department of Defense, and Site Cleanup Programs, as well as permitted facilities such as operating USTs and land disposal sites. GeoTracker lists five open cleanup cases within two miles of Contra Loma, as shown in Table 3-15. The site locations are shown on

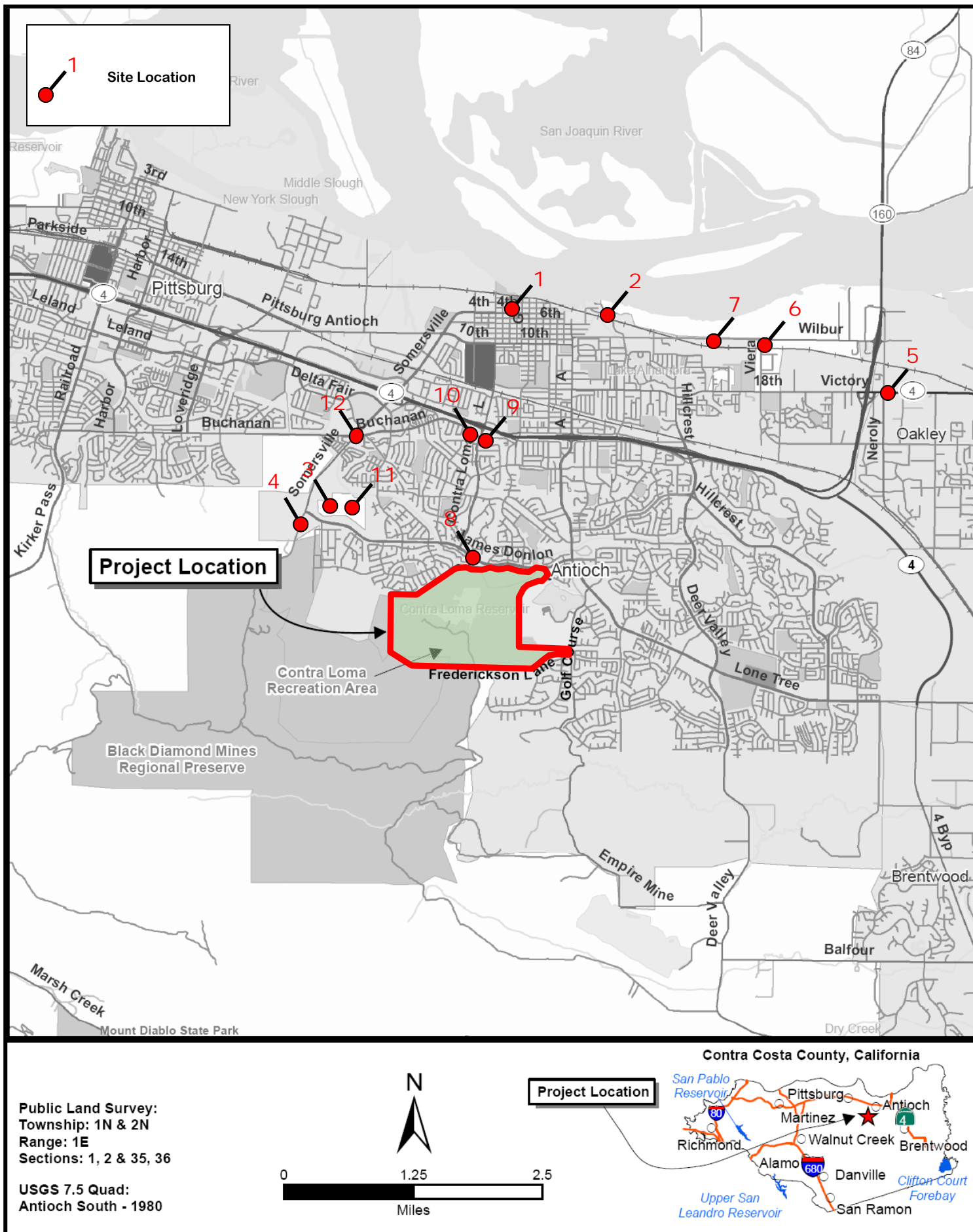


Figure 3-18. The nearest site is the City's Yard property located less than 100 feet north of the Contra Loma Recreation Area boundary (State Water Resources Control Board 2011).

Table 3-15. Open Groundwater Cleanup Sites Recorded within 2 miles of the Contra Loma Reservoir and Recreation Area

Site Name/ GeoTracker ID	Site Number (see Figure 3-18)	Cleanup Status	Location	Approximate Distance from Contra Loma
Antioch Yard Property/ SLT5S0383079	8	Open - Site Assessment	James Donlon Boulevard and Tabora Drive, Antioch, CA 94509	Less than 100 feet north of Contra Loma
Tosco - Facility #5963/ T0601300770	9	Open - Site Assessment	2701 Contra Loma Boulevard, Antioch, CA 94509	1.5 miles north of Contra Loma
Former Exxon 7-3615/ T0601300756	10	Open - Remediation	2610 Contra Loma Boulevard, Antioch, CA 94509	1.5 miles north of Contra Loma
Antioch Landfill/ L10003214546	11	Open	Somersville Road, Antioch, CA 94509	1 mile northwest of Contra Loma
PG&E Antioch Service Yard	12	Open - Site Assessment	Somersville and Buchanan roads, Antioch, CA 94509	2 miles north of Contra Loma

Source: State Water Resources Control Board 2011

Storage and handling of hazardous materials within the Regional Park is limited to relatively small quantities of fertilizers, pesticides, fuels, oils, solvents, and other chemicals used by EBRPD for routine operation and maintenance activities. EBRPD employs safe storage and handling practices in compliance with the standards of the Occupational Safety and Health Administration, the California Division of Occupational Safety and Health, and the County. The City does not store hazardous materials at the Community Park. During a recent three-year analysis period, EBRPD fire personnel responded to two hazardous materials incidents at the Regional Park. EBRPD considers Contra Loma to have a moderate rate of hazardous materials occurrence compared to its other parks (East Bay Regional Park District 2010a).

Dam Failure

Contra Loma Reservoir is located above the City. In 1983, Reclamation's Division of Dam Safety conducted a safety analysis of the reservoir and determined that "safe performance of the dam can be expected under all anticipated loading conditions, including the maximum credible earthquake and probable maximum flood events" (City of Antioch 2003a). The overall safety classification of the dam is registered as satisfactory (City of Antioch 2003a). The risk from dam failure to Contra Loma visitors and to the City is low.

In the unlikely event of dam failure, the path of inundation is expected to generally follow the West Antioch Creek drainage northward from the dam to the San Joaquin River. The inundation area would be approximately $\frac{3}{4}$ mile wide and the anticipated maximum depth would range from 19 feet directly north of the dam to 7 feet at the San Joaquin River near the City's downtown area (City of Antioch 2003a).

Wildland Fires

Wildland fires can occur in many parts of California, including the Bay Area. Contra Loma is within the City and, thus is not under the jurisdiction of Cal Fire. Although lands adjacent to the City limits and surrounding Contra Loma have been mapped by Cal Fire as being Very High Fire Hazard Severity zones, fire hazard severity in Contra Loma itself has not been mapped. Because Contra Loma is located within the City, it has been designated by Cal Fire as being a Local Responsibility Area, meaning that local fire protection agencies (e.g., City and/or County rather than Cal Fire) are directly responsible for fire suppression (California Department of Forestry and Fire Protection 2009). As discussed in Section 3.6 (Public Health and Safety), EBRPD and the CCCFPD are responsible for fire management in Contra Loma. During the three-year period from 2006 through 2008, EBRPD responded to five fires at the Regional Park, which represents a slightly above-average occurrence of wildland fires when compared to other EBRPD parks (East Bay Regional Park District 2010a).

3.17 Cultural Resources

3.17.1 Existing Conditions

Cultural Setting

Prehistoric human occupation of California stretches back over 12,000 years to the late Pleistocene Era (Moratto 1984). Evidence of the earliest known occupation of the Contra Loma region and San Francisco Bay Area was found during archaeological investigations at Los Vaqueros Reservoir, located approximately 11 miles southeast of Contra Loma. The excavations there revealed prehistoric occupation of the East Bay Area from approximately 8,000 years before the present day (BP) to the historic period as late as 200 BP (Milliken et al. 2007). Native peoples engaged in their traditional lifeways until the ethnographic and early historic period just prior to sustained contact with Euro-American groups. The Contra Loma region is situated in an area formerly occupied by the Karkin Costanoan (Ohlone) and Bay Miwok (Milliken et al. 2007). Some of the earliest accounts of the ethnographic Costanoans date to the 1760s when Spain was expanding its empire through exploratory expeditions and the establishment of the mission system in the coastal and inland regions of southern and central California.

Supported by Spanish and later Mexican governments and private individuals the main economic pursuits in the Contra Loma area during the 19th century consisted of farming, ranching, and dairying. Several homestead patents in the vicinity of the Area of Potential Effects (APE) were awarded in the 1870s and were occupied by individuals and families engaged in the agricultural industry (Hulaniski 1917). At the same time farms and ranches were being established in the Contra Loma area, the discovery of large deposits of coal in the nearby “Black Diamond” area further spurred agricultural and industrial activity in the Contra Loma region. Mining towns such as Nortonville, Somersville, Stewartville, West Hartley, and Judsonville were important centers from the 1860s through the last years of the 19th century. Although coal mining did not occur within the boundaries of the APE, transportation routes such as wagon roads and railroads passed through the area and connected the mines with Antioch and the larger Bay Area markets.

Following the decline of the coal mining industry in the region, agricultural and ranching pursuits continued to thrive and formed the basis of the regional economy throughout much of

the 20th century. In order to support these industries, provide water to the drier southern regions of California, reduce seasonal flooding, and foster continued development in the state, the CVP was established and constructed between the 1930s and 1960s. Part of this state-wide system, one of the largest public works projects in the U.S., is the Delta Division which includes the Contra Loma Dam and Reservoir located within the APE. Contra Loma Dam was completed in 1967 and the reservoir serves as an off-stream water storage facility for the Contra Costa Canal (also a CVP component; Stene 1994). Completed prior to the full adoption of Section 106 of the National Historic Preservation Act, no cultural resources investigations were conducted before the dam and reservoir were built.

Study Methodology

Research into cultural resources issues consisted of several avenues of investigation. These included, but were not necessarily restricted to, archival research conducted through the Northwest Information Center of the California Historical Resources Information System, and reviews of additional sources such as the USGS Historic Topographic Map Collection, the National Register of Historic Places (NRHP), the California Register of Historical Resources, the Contra Costa Historical Society, and documents curated by Reclamation. Research also consisted of Native American community outreach, and a reconnaissance field survey intended to verify the presence and integrity of cultural resources previously identified within and adjacent to the APE .

Identified Cultural Resources

Archival research and a reconnaissance field survey resulted in the identification of prehistoric and historic-era cultural resources within Contra Loma. The survey also updated existing information on one prehistoric site (CA-CCo-572) and examined its surrounding vicinity for potentially undocumented components or other unrecorded cultural resources.

This research revealed that 10 cultural resources investigations have been conducted within Contra Loma. These studies resulted in the archaeological survey of approximately 170 acres within Contra Loma (approximately 23 percent of Contra Loma lands including the 80 surface acres of the reservoir) and surveys of about 3.8 miles of roadways and trails within Contra Loma. These studies, along with historic mapping, Reclamation documents, and other sources, indicates that 12 prehistoric and historic-era sites and features have been identified within or immediately adjacent to Contra Loma. These sites represent early Native American use of the landscape and historic-era activities such as ranching, transportation, and water storage and conveyance in and around Contra Loma. Additional sites, features, and artifacts associated with prehistoric and historic-era activities may be present in un-surveyed portions of the APE.

Prehistoric Sites

CA-CCo-572. This site is located within the APE and was originally documented in 2008. A 2011 reconnaissance survey noted the presence of three isolated prehistoric artifacts not documented in the original 1988 records for this site. These artifacts were discovered over 45 meters away from the site and consisted of a single flake to the northwest and a core fragment and single flake to the southeast of the site. These artifacts were of the same lithic material as all the artifacts located on the site: a dark gray to off-white to reddish-yellow cryptocrystalline silicate. Bedrock outcrops are visible on the site surface suggesting shallow soil development.

The site record for CA-CCo-572 was updated following the field survey. The condition of the previously recorded portions of this site appears to be unchanged from the initial recording and no indications of midden soils or subsurface deposits were noted. This site has not been assessed as to NRHP listing eligibility.

CA-CCo-385. This site is located adjacent to but outside of the APE. The site consists of prehistoric and historic-era components situated on a hill approximately 200 meters east of the Community Park boundary and north of the Antioch Municipal Reservoir. It is likely that these sites have been destroyed by the development of the surrounding residential neighborhood. CA-CCo-385 was a possible midden with fire-affected rock; quartzite, chalcedony, basalt, and petrified wood debitage; and sandstone and basalt groundstone tools. The site also had a historic component containing an abandoned cattle watering trough, square nails, ceramics, and redwood posts. This site was located in a swale that contained an active spring but is now covered and possibly destroyed entirely by houses and the intersection of Dunes and Andrews Way. This site was not revisited at the time of the 2011 survey and has not been assessed for NRHP listing eligibility.

CA-CCo-386. This site, which contains both prehistoric and historic-era artifacts, is located adjacent to but outside of the APE and was documented in the immediate vicinity of CA-CCo-385. A possible midden with fire-affected rock, chert debitage, and sandstone groundstone tools were recorded along with a historic-era component consisting of a fig tree, metal, ceramics, and an unspecified trash scatter. As with CA-CCo-385, this site appears to have been destroyed by residential and roadway construction. Both this site and CA-CCo-385 were situated within lands included in the 1872 Sale-Cash Entry land patent of Benjamin Hockabout (Bureau of Land Management, General Land Office 1872). The 1879 Contra Costa County tax roll listed Dr. Samuel Adams as the landowner. This site was not revisited at the time of the 2011 survey and has not been assessed for NRHP listing eligibility.

Ranching and Agricultural Sites

Structure Location. A structure (possibly a windmill) noted on the 1898 Mount Diablo USGS quadrangle (and later maps) within the APE was not relocated. The mapped location of the structure is currently covered in thick cattails and riparian vegetation along the reservoir shore and covered in thick grasses on the small hill between the reservoir and the road. Although the heavy vegetation could be obscuring at least some remains of the windmill, dam and reservoir construction more than likely destroyed any traces of this structure. This site has not been assessed for NRHP listing eligibility.

Ranch Complex Location. The 1989 *Contra Loma Regional Park Land Use Development Plan Amendment and Environmental Impact Report/Environmental Assessment (EIR/EA): Antioch Community Park at Contra Loma* (City of Antioch and Bureau of Reclamation 1989) discusses the presence of an old ranch complex in the APE where the Community Park is now located. The EIR/EA includes a discussion of integrating the remnant almond orchard, ornamental eucalyptus trees, and various non-native shrubs into the park infrastructure. The EIR/EA also includes a map that indicates the presence of an old stock pond and the former location of the ranch house. However, there is no indication that the historic-era ranch was formally documented through the California Historic Resource Information System and no evidence of this ranch complex was

noted during the 2011 reconnaissance survey. This site has not been assessed for NRHP listing eligibility.

Historic-era Building Location. An unidentified building or other structure is depicted on 1898 and 1916 USGS maps of Contra Loma and the surrounding area. This location is presently under the Contra Loma Reservoir. Any traces of this location were almost certainly destroyed or at least inundated by the construction of the reservoir in the 1960s. Because the site could not be visited and has almost certainly been destroyed, it has not been assessed for NRHP listing eligibility.

Historic Transportation Routes

Empire Railroad. A segment of the old Empire Railroad alignment cut through the southeastern-most portion of the APE. The feature was related to the Empire Company which was founded in 1876 by George Hawxhurst and John C. Rouse to mine the rich coal veins in the Black Diamond area. Initially, the company transported coal by wagon teams to the coal wharf at Antioch about six miles to the north. The company built the narrow gauge Empire Railroad in 1877 to improve the transport of coal to Antioch and from there to the broader Bay Area markets. The Empire Company ceased operations in 1902 and presumably abandoned their rail line at that time.

This feature has not been recorded as a cultural resource and an examination of the general area of the APE within which the rail alignment would have extended did not reveal any traces of its presence. According to USGS mapping, the Empire Railroad line appears to have been partially realigned and repurposed sometime between 1941 and 1947. The 1941 USGS Mount Diablo quadrangle shows the alignment as a railroad and following the same route as noted on the 1898 Mount Diablo quadrangle map. However, according to the 1947 USGS Mount Diablo quadrangle, the line had been straightened and shifted slightly to the east to conform to the USGS map section line. Around this time the alignment appears to have been converted to a surface road. Due to its realignment and re-purposing, and the lack of any physical evidence for its presence, this feature does not retain any physical integrity or integrity of setting. This site has not been assessed for NRHP listing eligibility.

Oil Canyon Road. An early 20th century alignment of Oil Canyon Road appears to exist within the APE to the south of the reservoir. It extends due south from the boat launch at the south side of the reservoir to the edge of Contra Loma as a paved road. The alignment continues to the south and outside Contra Loma as a graveled access/ranch road onto private undeveloped land and was noted during the field survey. The portion of the road alignment appears to have been destroyed or at least inundated by the construction of the Contra Loma Dam and Reservoir. This site has not been assessed for NRHP listing eligibility.

James Donlon Boulevard. Located along the northern boundary of the APE, this east-west trending road was first documented on the 1898 Mount Diablo USGS topographic quadrangle map. This roadway did not constitute a major route but was merely a local access route throughout much of the 20th century. By the latter half of the 20th century the road was expanded and ultimately named James Donlon Boulevard presumably in honor of James D. Donlon who served as Mayor of the City of Antioch and as a councilman for many years in the late 19th century (Contra Costa County Community Development Department Historic Resources Inventory 2010). This site has not been assessed for NRHP listing eligibility.

Water Conveyance and Storage Sites

Contra Loma Dam and Reservoir. The Contra Loma Dam and Reservoir are components of the Delta Division of the CVP and constitute an off-stream water storage site for the Contra Costa Canal. The dam, an earth fill structure, was completed in 1967 and has a structural height of 107 feet and a crest length of 1,050 feet. The reservoir measures approximately 80 acres in surface area and retains 2,100 acre-feet of water. The dam and reservoir are owned by the U.S. Government. CCWD has been operating and maintaining the reservoir, under contract with Reclamation since 1967, as a regulating reservoir for peak or short-term municipal water supplies for CCWD customers, and also for emergency storage and as a backup water supply.

The Contra Loma Dam and Reservoir is an important element in the Delta Division of the CVP system. Even though the facility is of fairly recent construction it will reach the minimum age of 50 years per the NRHP criteria during implementation of the Contra Loma Recreation Area Resource Management Plan. CVP dams such as Contra Loma may be eligible under Criterion A if they are demonstrably associated with the agricultural development of the state or region, played a determining role in the history of the CVP or the Bureau of Reclamation, or created key storage reservoirs associated with the CVP. Reclamation considers and treats the CVP as eligible under Criterion A for its national and local economic contribution to the development of California. Therefore, the dam may be determined eligible for NRHP listing as a contributing property to the CVP (Perry, pers. comm. 2014).

P-07-002695-Contra Costa Canal. The Contra Costa Canal, which forms the northern border of APE, was constructed by Reclamation and is part of the larger CVP. The canal is 47 miles long and supplies water along its length from the headgates at Rock Slough in the Delta to the City of Martinez. Construction on the canal began in 1937 and was completed in 1951. The Canal was determined eligible for listing on the NRHP, through consensus with the California State Historic Preservation Officer dated March 9, 2005, due to its association with the CVP and the development of agriculture and irrigation in California.

Antioch Municipal Reservoir. The Municipal Reservoir was created in the late 1920s to serve the citizens of the City of Antioch, is not associated in any with the Contra Loma Dam/Reservoir, and is not situated within or immediately adjacent to the APE. The reservoir was constructed solely to provide water to the City of Antioch. It was not part of a larger system such as the CVP and consequently did not contribute to the broader patterns of water acquisition, conveyance, and distribution. This site has not been assessed for NRHP listing eligibility. The reservoir is situated to the east and outside of the APE and would not be affected by any projects within Contra Loma.

Current Condition of the APE

A 2011 reconnaissance survey and archival research indicate that large portions of the APE have been subjected to intensive developments that would have disturbed or destroyed identified and presently undocumented cultural resources. These developments consist of the Contra Loma Dam/Reservoir, recreational facilities and infrastructure associated with the Regional Park, which are situated primarily along the south side of the Reservoir. This developed area, including the 80 acres covered by the reservoir, consists of approximately 149.3 acres. Additional recreational features and construction related to the Community Park in the northeast section of the APE have disturbed an additional approximately 36.8 acres. In total, approximately 25

percent of the APE has been disturbed by dam/reservoir and recreation-associated developments. Although many of the individual developments within the APE possess limited footprints (e.g. roads, trails, boat launch, restrooms, etc.), collectively they have affected a fairly large area and have reduced the potential for additional discoveries in those areas in both surface and subsurface contexts. Small intact sites, isolated artifacts, or sparse scatters of archaeological materials may still exist in these developed areas. However, in general, any larger or potentially significant (per NRHP criteria) cultural resources in these areas likely would have been destroyed or at least damaged by construction activities.

In addition, portions of the APE (approximately 170.62 acres [about 23 percent]) have been subjected to surface archaeological surveys including those conducted in 2011 for this EIS. The 2011 surveys resulted in the identification of only three cultural resources; CA-CCo-572, Contra Loma Dam/Reservoir, and the Contra Costa Canal which is situated outside but immediately adjacent to the northern edge of the APE. However, it is important to note that some of these studies were conducted prior to the development of present-day survey and research methodologies and may not meet today's requirements for identification efforts.

3.18 Socioeconomics and Environmental Justice

3.18.1 Existing Conditions

Population

Table 3-17 presents population figures for California, the County, and the City. Between 2000 and 2010, the population of all of these areas increased. The rates of population growth in the County (10.6 percent) and the City (13.1 percent) were higher than the state average of 10 percent (California Department of Finance 2011a).

Table 3-17. Population Estimates for California, Contra Costa County, and Antioch

Location	2000	2010	% Change 2000-2010
California	33,871,653	37,253,956	10.0%
Contra Costa County	948,816	1,049,025	10.6%
Antioch	90,532	102,372	13.1%

Source: California Department of Finance 2011a

The County is among the state's most populous counties. Major factors contributing to the County's population growth over the past two decades include close proximity to major employment centers in San Francisco and Oakland; development of new employment centers in the I-680 corridor and the Livermore/Pleasanton area; the availability of rapid transit; and relatively affordable housing prices compared with other parts of the Bay Area. During the 1990s, the County's population growth was strongest in the eastern portion of the County, particularly in Antioch, Brentwood, and Oakley. Over the coming decade, much of the County's

population growth is expected to occur in the eastern portion of the County in and around Antioch and in San Ramon (Contra Costa County 2005).

Population growth in the City over the past two decades can be largely attributed to the expansion of employment centers in the Concord/Walnut Creek and Livermore/Pleasanton areas, combined with an increasing lack of affordability in locations closer to the major Bay Area employment centers. The City's large supply of vacant land, attractive physical setting, and accessibility to the SR 4 freeway has attracted large numbers of people to the City (City of Antioch 2003a).

Table 3-18 shows projected growth from 2010 to 2030 (approximately 20 years from present) for California and the County, and Table 3-19 shows projected growth from 2010 to 2025 (approximately 15 years from present) for the City. From 2010 to 2030, the populations of California and the County are projected to grow by 32.2 percent and 35.6 percent, respectively, with average annual increases of 1.6 percent and 1.8 percent, respectively. These projections indicate that the County's population will increase at a slightly higher rate than that of the state (California Department of Finance 2011b). From 2010 to 2025, the population of the City is expected to grow by 16 percent, with an average annual increase of 0.8 percent. This projection shows that the City is expected to grow at about half the rate of California and the County (City of Antioch 2003a).

Table 3-18. State and County Population Projections 2010–2030

Location	2010	2030	Change 2010-2030	% Change 2010-2030	Annual % Change
California	37,253,956	49,240,891	11,986,935	32.2%	1.6%
Contra Costa County	1,049,025	1,422,840	373,815	35.6%	1.8%

Source: California Department of Finance 2011b

Table 3-19. Antioch Population Projections 2010–2025

Location	2010	2025	Change 2010-2025	% Change 2010-2025	Annual % Change
Antioch	102,372	118,800	16,428	16.0%	0.8%

Source: City of Antioch 2003a

Housing

Table 3-20 presents housing data for California, the County, and the City. Between 2000 and 2010, the total number of housing units and the number of occupied units in the County and the City increased by more than the state average of 12 percent for total and 9.3 percent for occupied. The City experienced a higher increase than the state and the County in both total housing and occupied housing with 15.7 percent and 9.9 percent, respectively. These data support the fact that the City experienced higher growth rates than the rest of the County during that time period. Table 3-20 also shows that the City experienced a greater decrease in

occupancy rates (5 percent) than either the state or the County. In other words, the City experienced a greater percent increase in vacancy rates than both the state and the County between 2000 and 2010. The City's 2010 housing occupancy rate (92.5 percent) remains a bit higher than the state's rate of 91.9 percent and lower than the County's rate of 93.8 percent (California Department of Finance 2011c).

Table 3-20. Housing Occupancy Estimates

Location	Total Housing Units			Occupied Housing Units			Occupancy Rate		
	2000	2010	% Change 2000-2010	2000	2010	% Change 2000-2010	2000	2010	% Change 2000-2010
California	12,214,549	13,680,081	12.0%	11,502,870	12,577,498	9.3%	94.2%	91.9%	-2.4%
Contra Costa County	354,577	400,263	12.9%	344,129	375,364	9.1%	97.1%	93.8%	-3.4%
Antioch	30,116	34,849	15.7%	29,338	32,252	9.9%	97.4%	92.5%	-5.0%

Source: California Department of Finance 2011c

As shown in Table 3-21, the median housing values in the City are lower than those in the County and the state, and County home values are higher than those in the state and the City. Between 2000 and 2009, housing values in the City and the County increased by less than the state average. During that period, the median home value in the City increased from \$195,300 to \$256,500 (31.3 percent), the median home value in the County increased from \$253,800 to \$424,500 (67.3 percent), and the median home value in the state increased from \$211,500 to \$384,200 (81.7 percent) (Bureau of Reclamation 2007; City-Data.com 2011).

Table 3-21. Median Housing Value

Location	2000 Median (dollars)	2009 Median (dollars)	% Change 2000-2009
California	211,500	384,200	81.7%
Contra Costa County	253,800	424,500	67.3%
Antioch	195,300	256,500	31.3%

Sources: Reclamation 2007; City-Data.com 2011

Employment and Income

Total number of people employed in the County in 2010 was 343,412 (Census Bureau 2010a). The leading occupational categories include managerial/professional and sales/technical/administrative. Major industries in the County include petroleum refining, telecommunications, retail and financial services, steel manufacturing, prefabricated metals, chemicals, electronic equipment, paper products, and food processing. Over the period between 2000 and 2020, the three largest job growth centers in the County have been, and are projected to be, San Ramon, Concord, and Richmond. Antioch, San Ramon, and Brentwood are expected to experience the largest growth in retail employment (Contra Costa County 2005). The countywide average wage paid per job in 2005 was \$51,416 (California Department of Finance 2011d).

In 2000, the Census reported the City's total civilian labor force to be 43,893; total employment was 41,598. Most of the City's employed residents have sales or office-based jobs, and many of these are located outside the City. Other occupations held by City residents include service industry, construction, and production/transportation jobs. By 2025, service industry jobs are expected to comprise around half of the job opportunities within the City (City of Antioch 2003a).

Expenditures for Fishing and Wildlife Viewing

Fishing and wildlife viewing bring visitors and visitor expenditures to recreation areas, such as Contra Loma, and their surrounding regions. Fishing permits and licenses also generate revenues for the issuing government agencies. In 2011 in California, \$2.3 billion was spent on fishing recreation, of which \$1.6 billion was for trip-related expenditures, \$577 million was for equipment purchases, and \$71 million was for the purchase of other items, such as magazines, membership dues, licenses, permits, stamps, and land leasing and ownership. The average expenditure per angler was \$1,333 and the average angler trip expenditure per day was \$68. The average expenditure per wildlife watching participant was \$533 per day with an average trip expenditure of \$65 (Fish and Wildlife Service and Census Bureau 2013). In California, in 2012, sales generated by sport fishing licenses totaled \$56,959,464 (California Department of Fish and Wildlife 2013b).

Environmental Justice

In order to comply with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, data was compiled concerning the ethnic composition and income and poverty levels of the state, the County, and the City. Table 3-22 shows that in 2000, the percentage of non-Hispanic minorities throughout the state was 40.5 percent, and people of Hispanic ethnicity were 32.4 percent of the state's population. By 2010, the percentage of non-Hispanic minorities throughout the state had increased to 42.4 percent and people of Hispanic ethnicity had increased to 37.6 percent of the state's population. During that period, the percentage of people of white ethnicity in the state's population decreased from 59.5 percent to 57.6 percent. People of Hispanic ethnicity represent the largest minority in California (California Department of Finance 2011e).

Table 3-23 shows that in 2000, the percentage of non-Hispanic minorities in the County was 34.5 percent, and people of Hispanic ethnicity were 17.7 percent of the County's population. By 2010, the percentage of non-Hispanic minorities in the County had increased to 41.4 percent and people of Hispanic ethnicity had increased to comprise 24.4 percent of the County's population. During that period, the percentage of white ethnicity in the County's population decreased from 65.5 percent to 58.6 percent. Similar to California, people of Hispanic ethnicity represent the largest minority in the County (California Department of Finance 2011e).

Table 3-24 shows that in 2000, the percentage of non-Hispanic minorities in the City was 34.7 percent, and people of Hispanic ethnicity were 22.1 percent of the City's population. By 2010, the percentage of non-Hispanic minorities in the City had increased to 51.1 percent and people of Hispanic ethnicity had increased to comprise 31.7 percent of the City's population.

During that period, the percentage of white ethnicity in the City's population decreased from 65.3 percent to 48.9 percent. People of Hispanic ethnicity represent the largest minority in the

City, but represent a smaller percentage of the City population than they do in the County or throughout the state. Non-Hispanic minorities, however, comprise a substantially higher percentage of the City's population than they do in the County or the state (California Department of Finance 2011e).

The Census Bureau uses a set of income thresholds that vary by family size and composition to determine which families are living in poverty. If a family's total income is less than its threshold, then that family, and every individual in it, is considered to be living in poverty. Poverty thresholds do not vary geographically, but they are updated annually for inflation using the Consumer Price Index. For individuals who do not live with family members, their own income is compared with the appropriate threshold. According to the Census Bureau, the 2010 poverty threshold is \$11,344 for an individual under 65 years of age and \$22,113 for a family of four with two minor children (Census Bureau 2010b). Table 3-25 shows estimated median household income and poverty levels for the County, the City, and the state. According to the Census Bureau, the percentage of the populations of the County and City at income levels below the poverty threshold was lower than the state average of 13.2 percent, with 8.6 and 12.5 percent, respectively. The median household income for the County (\$93,400) is higher than the state (\$77,596), whereas the median household income for the City (\$57,714) is lower than the state (Census Bureau 2009; Fannie Mae 2011).

Table 3-22. Population Ethnicity Estimates for California

Year	Population/ Percent	White	Hispanic ¹	Asian	Black or African American	Native American	Pacific Islander	Other Race	Multi-Race	% Non-white (excluding Hispanic)	Total
2000	Population	20,170,059	10,966,556	3,697,513	2,263,882	333,346	116,961	5,682,241	1,607,646		33,871,648
	Percent	59.5%	32.4%	10.9%	6.7%	1.0%	0.3%	16.8%	4.7%	40.5%	
2010	Population	21,453,934	14,013,719	4,861,007	2,299,072	362,801	144,386	6,317,372	1,815,384		37,253,956
	Percent	57.6%	37.6%	13.0%	6.2%	1.0%	0.4%	17.0%	4.9%	42.4%	

Source: California Department of Finance 2011e

Notes: ¹"Hispanic" ethnicity population estimates are accounted for within the estimates for the other ethnicities, but are shown here separately for informational purposes.

Table 3-23. Population Ethnicity Estimates for Contra Costa County

Year	Population/ Percent	White	Hispanic ¹	Asian	Black or African American	Native American	Pacific Islander	Other Race	Multi-Race	% Non-white (excluding Hispanic)	Total
2000	Population	621,490	167,776	103,993	88,813	5,830	3,466	76,510	48,714		948,816
	Percent	65.5%	17.7%	11.0%	9.4%	0.6%	0.4%	8.1%	5.1%	34.5%	
2010	Population	614,512	255,560	151,469	97,161	6,122	4,845	112,691	62,225		1,049,025
	Percent	58.6%	24.4%	14.4%	9.3%	0.6%	0.5%	10.7%	5.9%	41.4%	

Source: California Department of Finance 2011e

Notes: ¹"Hispanic" ethnicity population estimates are accounted for within the estimates for the other ethnicities, but are shown here separately for informational purposes.

Table 3-24. Population Ethnicity Estimates for Antioch

Year	Population/Percent	White	Hispanic ¹	Asian	Black or African American	Native American	Pacific Islander	Other Race	Multi-Race	% Non-white (excluding Hispanic)	Total
2000	Population	59,148	20,024	6,697	8,824	843	360	8,352	6,308		90,532
	Percent	65.3%	22.1%	7.4%	9.7%	0.9%	0.4%	9.2%	7.0%	34.7%	
2010	Population	50,083	32,436	10,709	17,667	887	817	14,310	7,899		102,372
	Percent	48.9%	31.7%	10.5%	17.3%	0.9%	0.8%	14.0%	7.7%	51.1%	

Source: California Department of Finance 2011e

Notes: ¹"Hispanic" ethnicity population estimates are accounted for within the estimates for the other ethnicities, but are shown here separately for informational purposes.

Table 3-25. Median Family Income and Poverty

Location	Median Household Income (Family of 4)	Number in Poverty ¹	Percent in Poverty ¹
California	\$77,596 ¹	4,694,423	13.2%
Contra Costa County	\$93,400 ²	86,720	8.6%
Antioch	\$57,747 ²	12,336	12.5%

Sources: City-Data.com 2011; Census Bureau 2010b; Census Bureau 2009; Fannie Mae 2011

Notes: ¹ 2009 data; ² 2010-2011 data

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