CHAPTER 3
ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES
AIR QUALITY

INTRODUCTION

This section provides region-specific information related to climate and topography; followed by an overview of air quality pollutants, plans, policies, and regulations; and existing air quality conditions. This section also analyzes construction and operational emissions generated under the Master Plan, and the Master Plan’s contribution to cumulative air quality effects.

SETTING

REGIONAL SETTING

Federal and state air quality standards have been established for six ambient air pollutants, primarily to protect human health and welfare. The six "criteria air pollutants" for which federal and state ambient standards have been established are ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), suspended particulate matter (PM-10) and lead (Pb). Criteria pollutants are regulated separately from air toxics at both federal and state levels. Documented health effects from air pollution include acute respiratory infections, chronic bronchitis, pulmonary emphysema, and bronchial asthma.

CLIMATE AND METEOROLOGY

The primary factors that determine air quality are the locations of air pollutant sources and the amounts of pollutants emitted. Meteorological and topographical conditions, however, also are important. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants.

The San Francisco Bay Area climate is Mediterranean in character, with mild, rainy winter weather from November through March, and warm, dry weather from June through September. There is a high percentage of sunshine at areas located away from the immediate coast, particularly in summer. The movement of marine air in a large part determines the temperature, humidity, wind, and precipitation throughout the year, depending upon the location and strength of the dominant Pacific high-pressure system and the coastal temperature gradient. Within the Bay Area, average air temperature increases as distance from the coast increases.

During summer and early autumn, persistent high-pressure systems off the coast of California maintain conditions conducive to the formation of smog in the Bay Area. During winter months, cooler temperatures result in greater CO emissions from an increase in cold-starting internal combustion engines when catalytic converters are less efficient. Frequent stagnant weather conditions allow for the buildup of these emissions, resulting in higher CO concentrations. In general, northwesterly winds generated by high-pressure cells over the Pacific Ocean are drawn through the Golden Gate and forced into a more westerly orientation. Once through the Gate, this
air mass is split and channeled by the East Bay hills, producing southwesterly winds at San Pablo and northwesterly winds at San Jose.

The Park is located within Santa Clara County, which is characterized by hot summers, moderate winters, a distinct rainy season, and high winds. During the summer months, when there is a strong inversion with a low ceiling, air movement is weak and pollutants become trapped and concentrated. Maximum summer temperatures in the area range from the high 80’s to the low 90’s with extremes in the 100’s.

**EXISTING AIR QUALITY**

The BAAQMD and the ARB operate a regional air quality monitoring network that measures the ambient concentrations of the six criteria pollutants. Existing and probable future levels of air quality in the project area can generally be inferred from ambient air quality measurements at these monitoring stations. The major pollutants of concern in the Bay Area, ozone, carbon monoxide, and particulate matter, are monitored at a number of locations. The monitoring station closest to the project site is located on Murphy Avenue in San Martin, approximately two miles south of the project site and monitors ozone. The monitoring stations for PM-10 and carbon monoxide are located in San Jose, about 25 miles northwest of the Park. (on Tully Road and 4th Street, respectively). Table 3-1 shows a five-year summary of monitoring data from these three stations. Table 3-1 also compares measured pollutant concentrations with state and national ambient air quality standards.

**SENSITIVE RECEPTEORS**

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Schools, hospitals and nursing homes are considered to be relatively sensitive to poor air quality because children, elderly people and convalescents are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people are usually at their homes for extended periods of time, with associated greater exposure to ambient air quality.

There are no sensitive receptors inside the park. The nearest sensitive receptors outside of the Park include homes along Foothill, E. San Martin, and New Avenues near the West Flat Area.

**REGULATORY FRAMEWORK**

**REGULATORY AGENCIES**

The California Air Resources Board (CARB), California’s state air quality management agency, regulates mobile emissions sources and oversees the activities of regional/county air districts. CARB is responsible for establishing emissions standards for on-road motor vehicles sold in California. The Bay Area Air Quality Management District (BAAQMD) is the regional agency
### TABLE 3-1
AIR QUALITY DATA SUMMARY (1997-2001) FOR THE PROJECT AREA

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Monitoring Data by Year&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Standard&lt;sup&gt;b&lt;/sup&gt;</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ozone:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest 1 Hour Average (ppm)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0.09</td>
<td>0.09</td>
<td>0.14</td>
<td>0.13</td>
<td>0.11</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>Days over State Standard</td>
<td>0.09</td>
<td>0</td>
<td>15</td>
<td>7</td>
<td>4</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Days over National Standard</td>
<td>0.12</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Highest 8 Hour Average (ppm)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0.07</td>
<td>0.07</td>
<td>0.11</td>
<td>0.10</td>
<td>0.10</td>
<td>0.09</td>
<td></td>
</tr>
<tr>
<td>Days over National Standard</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Carbon Monoxide:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest 8 Hour Average (ppm)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>20</td>
<td>20</td>
<td>6.1</td>
<td>6.3</td>
<td>6.3</td>
<td>7.0</td>
<td>5.1</td>
</tr>
<tr>
<td>Days over State Standard</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Particulate Matter (PM-10):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest 24 Hour Average (µg/m³)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>50</td>
<td>50</td>
<td>95.0</td>
<td>88.5</td>
<td>96.5</td>
<td>68.5</td>
<td>75.1</td>
</tr>
<tr>
<td>Days over State Standard</td>
<td>14</td>
<td>14</td>
<td>6</td>
<td>18</td>
<td>12</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Number of samples&lt;sup&gt;d&lt;/sup&gt;</td>
<td>58</td>
<td>58</td>
<td>61</td>
<td>55</td>
<td>58</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>Annual Average (µg/m³)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>30</td>
<td>30</td>
<td>21</td>
<td>19</td>
<td>21</td>
<td>18</td>
<td>19</td>
</tr>
</tbody>
</table>

<sup>a</sup> Ozone data are from the Murphy Avenue station in San Martin, PM-10 data are from Tully Road station in San Jose, and carbon monoxide data are from the 4th Street station also in San Jose.

<sup>b</sup> Generally, state standards are not to be exceeded and national standards are not to be exceeded more than once per year.

<sup>c</sup> ppm = parts per million; µg/m³ = micrograms per cubic meter.

<sup>d</sup> PM-10 is not measured every day of the year. "Number of samples" refers to the number of days in a given year during which PM-10 was measured at the Tully Road station in San Jose.

NOTE: Values in **bold** are in excess of applicable standard. NA = Not Available.


...empowered to regulate air pollutant emissions from stationary sources in the Bay Area.

BAAQMD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and review activities.

**PLANS, POLICIES, AND ATTAINMENT STATUS**

Regulation of air pollution is achieved through both national and state ambient air quality standards and emissions limits for individual sources of air pollutants. The federal Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to identify National Ambient Air Quality Standards (national standards) to protect public health and welfare. National standards have been
established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter (PM-10), and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria set forth in the CAA. California has adopted more stringent ambient air quality standards for the criteria air pollutants (referred to as State Ambient Air Quality Standards, or state standards) and has adopted air quality standards for some pollutants for which there is no corresponding national standard. Table 3-2 presents both sets of ambient air quality standards.

### TABLE 3-2
STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Time Averaging</th>
<th>Statea</th>
<th>Nationalb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>1 hour</td>
<td>0.09 ppm</td>
<td>0.12 ppm</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>1 hour</td>
<td>20 ppm</td>
<td>35 ppm</td>
</tr>
<tr>
<td></td>
<td>8 hour</td>
<td>9.0 ppm</td>
<td>9 ppm</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>1 hour</td>
<td>0.25 ppm</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>NA</td>
<td>0.053 ppm</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>1 hour</td>
<td>0.25 ppm</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>3 hour</td>
<td>NA</td>
<td>0.5 ppm</td>
</tr>
<tr>
<td></td>
<td>24 hour</td>
<td>0.04 ppm</td>
<td>0.14 ppm</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>NA</td>
<td>0.03 ppm</td>
</tr>
<tr>
<td>Suspended Particulate Matter (PM-10)</td>
<td>24 hour</td>
<td>50 µg/m³</td>
<td>150 µg/m³</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>30 µg/m³</td>
<td>50 µg/m³</td>
</tr>
<tr>
<td>Sulfates</td>
<td>24 hour</td>
<td>25 µg/m³</td>
<td>NA</td>
</tr>
<tr>
<td>Lead</td>
<td>30 day</td>
<td>1.5 µg/m³</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Calendar Quarter</td>
<td>NA</td>
<td>1.5 µg/m³</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>1 hour</td>
<td>0.03 ppm</td>
<td>NA</td>
</tr>
</tbody>
</table>

a  California standards for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and suspended particulate matter are values that are not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

b  National standards, other than ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

c  ppm = parts per million by volume; (g/m³) = micrograms per cubic meter.

NA = Not Applicable.

Under amendments to the federal CAA, EPA has classified Air Basins, or portions thereof, as either "attainment" or "nonattainment" for each criteria air pollutant, based on whether or not the national standards have been achieved. In 1988, the state legislature passed the California Clean Air Act (CCAA), which is patterned after the federal CAA to the extent that it also requires areas to be designated as "attainment" or "nonattainment," but with respect to the state standards rather than the national standards.

The Bay Area is designated nonattainment for state and national ozone standards, and for the state PM-10 standard. In 1998, urbanized areas within the Bay Area were redesignated as attainment for the national carbon monoxide standard. The Bay Area is in attainment or unclassified for all other ambient air quality standards.

Both the federal CAA and the state CCAA require nonattainment areas to prepare plans that include strategies for achieving attainment. These plans contain measures through which both stationary and mobile sources of pollutants can be controlled in order to achieve national and state ambient air quality standards. At the local level, Ozone Attainment Plans are prepared to comply with the national ozone standard and Clean Air Plans are prepared to comply with the California ozone standard. As such, the BAAQMD has published its Bay Area 2000 Clean Air Plan, which is the third triennial update of the District’s original Bay Area 1991 Clean Air Plan. The goal of the plan is to improve air quality by reducing emissions of certain criteria pollutants (ROG and NOx) that lead to the formation of ozone through tighter industry controls, cleaner cars and trucks, cleaner fuels, and increased commute alternatives. The plan encourages cities and counties to adopt measures in support of this goal (BAAQMD, 2000).

The Bay Area 2001 Ozone Attainment Plan responds to the EPA’s proposed partial disapproval of the Bay Area’s Bay Area 1999 Ozone Attainment Plan and finding of failure to attain the national one-hour standard for ozone and establishes an ozone attainment plan that will provide for attainment by 2006 through implementation of stationary source, mobile source, and transportation control measures (BAAQMD, et al., 2001). The co-lead agencies (the BAAQMD, the Metropolitan Transportation Commission [MTC], and the Association of Bay Area Governments [ABAG]) authoring the plan granted final approval of the plan on October 24, 2001. Subsequent CARB approval was granted on November 1, 2001. The Plan is currently under review by the EPA.

POLLUTANT DESCRIPTION

A discussion of the air pollutants of interest to the regulatory agencies for their potential adverse impacts on the environment and sensitive receptors are described below.

OZONE

Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NOx). ROG and NOx, which are emitted directly to the atmosphere, are known as precursor compounds for ozone. Significant ozone production generally requires
ozone precursor presence for approximately three hours in a stable atmosphere with strong sunlight. Ozone is a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production.

Short-term exposure to ozone can irritate the eyes and cause construction of the airways (BAAQMD, 1999). Besides causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Ozone concentrations in the Bay Area are expected to decline somewhat over the next several years, but violations of the state standard are expected to continue to occur in the sheltered inland valleys into the foreseeable future.

**CARBON MONOXIDE**

Ambient carbon monoxide concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distributions of vehicular traffic. Carbon monoxide concentrations also are influenced by wind speed and atmospheric mixing. Under inversion conditions, carbon monoxide concentrations may be distributed more uniformly over an area, out to some distance from vehicular sources.

When inhaled at high concentrations, carbon monoxide combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood (BAAQMD, 1999). This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses.

Carbon monoxide emissions from on-road motor vehicles represent approximately 70 percent of the regional inventory of carbon monoxide (CARB, 1998). Carbon monoxide concentrations are expected to continue to decline in the Bay Area into the future due to existing controls and programs as well as the continued retirement of older, more polluting vehicles from the mix of vehicles on the road network.

**SUSPENDED PARTICULATE MATTER (PM-10 AND PM-2.5)**

PM-10 and PM-2.5 consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. (A micron is one-millionth of a meter). PM-10 and PM-2.5 represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. One common source of PM-2.5 is diesel emissions. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Particulates also can damage materials and reduce visibility.

PM-10 emissions in the project area are mainly from urban sources, dust suspended by vehicle traffic and secondary aerosols formed by reactions in the atmosphere. Particulate concentrations near residential sources generally are higher during the winter, when more fireplaces are in use
and meteorological conditions prevent the dispersion of directly emitted contaminants. Direct PM-10 emissions in Santa Clara County are expected to increase by approximately 12 percent between 2000 and 2010 due to an overall increase in emissions from area sources as well as an increase in vehicle miles traveled within the region.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

As stated in Appendix G of the CEQA Guidelines, a project would generally have a significant effect on the environment if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any nonattainment pollutant;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people (Governor's Office of Planning and Research, 2002).

The following air quality analysis addresses the first four of these general criteria; the fifth is not discussed since the Master Plan would not include development of the types of land uses generally associated with potential odor impacts. Also, project implemented under the Master Plan are not expected to generate acute or chronic levels of TAC.

Potential impacts are associated with construction-related air emissions and emissions from mobile-sources associated with operation of the park under the Master Plan. The BAAQMD CEQA Guidelines (1999) provide specific guidance on evaluating projects under CEQA relative to the above criteria.

For temporary construction-phase impacts, BAAQMD recommends a qualitative approach that focuses on the dust control measures that would be implemented. If appropriate mitigation measures are implemented to control PM-10 emissions, then the impact from construction would be less than significant. The BAAQMD CEQA Guidelines provide a list of feasible control measures for construction-related PM-10 emissions.

For project-level impact analysis of long-term impacts to air quality, the BAAQMD provides various thresholds and tests of significance. For ROG, NOx and PM-10, a net increase of 80 pounds per day is considered significant, while for CO, an increase of 550 pounds per day would be considered significant if it leads to a possible local violation of the carbon monoxide standards (i.e. if it creates a "hot spot"). Generally, if a project results in an increase in ROG, NOx, or PM-10, of more than 80 pounds per day, then it would also be considered to contribute substantially to the significant cumulative effect. For projects that would not lead to a significant increase of
ROG, NOx, or PM-10 emissions, the cumulative effect is evaluated based on a determination of the consistency of the project with the regional Clean Air Plan. Generally, a project that is consistent with the applicable General Plan would not contribute in a significant manner to the cumulative regional impact if the General Plan itself is consistent with the Clean Air Plan. To be consistent with the Clean Air Plan, a General Plan must be based on population projections that are consistent with those used in developing the Clean Air Plan and must provide for a rate of increase in vehicle miles traveled (VMT) that does exceed the rate of increase in population.

**IMPACT STATEMENTSS AND MITIGATION MEASURES**

**Impact Air Quality-1:** Construction activities would generate short-term emissions of criteria pollutants. This would be a potentially significant impact.

Construction of new park facilities under the Master Plan would occur over the course of 10 years at locations throughout the 4,448 acres of the Park. Construction conducted under the Master Plan could generate substantial amounts of fugitive dust. Dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the prevailing weather. Primary sources of fugitive dust during construction would include excavation, earth movement, grading, and wind erosion from exposed surfaces.

While most of the dust associated with the construction of various facilities would occur during the first stages of site preparation, dust would also be generated during installation of infrastructure and heavy vehicle movement over unpaved surfaces. Particularly during the initial stages of a construction project, construction activities may result in significant quantities of dust in the absence of mitigation measures, and as a result, local visibility and PM-10 concentrations may be adversely affected on a temporary and intermittent basis. Without mitigation, this could be a significant effect on air quality.

With respect to exhaust emissions from construction equipment (including carbon monoxide and ozone precursors), their related emissions are included in the emissions inventory that is the basis for regional air quality plans and are not expected to impede attainment or maintenance of ozone and carbon monoxide standards in the Bay Area (BAAQMD, 1999). Therefore, construction-related emissions, other than dust, would not be significant.

**Mitigation Measure Air Quality-1:** During construction of Park facilities requiring grading or excavation, construction contractors shall implement the following dust control program, which is recommended by the BAAQMD.

The following control measures should be implemented at all construction sites:

- Water all active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.
• Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).

• Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.

• Sweep daily (preferably with water sweepers, using reclaimed water if possible) all paved access roads, parking areas, and staging areas at construction sites.

• Sweep streets (preferably with water sweepers, using reclaimed water if possible) at the end of each day if visible soil material is carried onto nearby paved roads.

The following control measures should also be implemented at all construction sites greater than four acres in area:

• Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).

• Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).

• Limit traffic speeds on unpaved roads to 15 miles per hour.

• Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

• Replant vegetation in disturbed areas as quickly as possible.

The following control measures should also be implemented at construction sites that are large in area, located near sensitive receptors, or which for any other reason may warrant additional emissions reductions:

• Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving a construction site.

• Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas.

• Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.

• Limit the area subject to excavation, grading, and other construction activity at any one time.

• Pave all roadways, driveways, sidewalks, etc. as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

• Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. The name and telephone number of such persons shall be provided to the BAAQMD prior to the start of construction.

**Impact Significance After Mitigation:** Less Than Significant.
Impact Air Quality-2: The Park Master Plan would result in an increase in criteria pollutant emissions due to project-related traffic. This would be a less than significant impact.

Over the long-term, the Master Plan would result in an increase in emissions primarily due to an increase in motor vehicle trips. On-site stationary sources and area sources would result in lesser quantities of pollutant emissions. Emissions estimates for the first year of park operation under Phase 1 and for complete build-out under the Master Plan have been prepared using the procedures established by the BAAQMD CEQA Guidelines (BAAQMD, 1999). The results of the analysis are shown in Table 3-3. The estimates shown in Table 3-3 are based on an estimate of 413 average daily trips after completion of Phase 1 projects and 1,687 daily vehicle trips upon complete buildout for an average weekend.

**TABLE 3-3**

**VEHICLE EMISSIONS (POUNDS PER DAY)**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Levels&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Threshold (lbs/day)</th>
<th>Phase 1 Projects</th>
<th>Complete Buildout</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROG</td>
<td>80</td>
<td>7</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>NO&lt;sub&gt;x&lt;/sub&gt;</td>
<td>80</td>
<td>17</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>PM-10</td>
<td>80</td>
<td>7</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>550</td>
<td>95</td>
<td>241</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Emission levels were calculated according to procedures established by the BAAQMD CEQA Guidelines (BAAQMD, 1999).


Based on the estimates shown in Table 3-3, the contribution to the regional emissions would be below the significance thresholds specified by the BAAQMD for ROG, NO<sub>x</sub>, PM-10, and CO at complete buildout. Thus, emissions generated by vehicle trips would not have a significant impact on air quality at complete buildout.

**Mitigation:** None required.

**Impact Significance After Mitigation:** Less than Significant.
Impact Air Quality-3: The proposed project would contribute to a reduction of cumulative regional air emissions by the operation of the Park under the Master Plan. This would contribute to a net air quality benefit.

According to the BAAQMD CEQA Guidelines, any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. For any project that does not individually have significant operational air quality impacts, the determination of significant cumulative impact is based on an evaluation of the consistency of the project with the local general plan and of the general plan with the regional air quality plan. To determine cumulative impacts of the proposed project, the project’s consistency with the Clean Air Plan was determined based on its consistency with the 2000 Bay Area Clean Air Plan. The Master Plan, as mitigated, would have a less than significant impact on regional air quality. The nature of the Master Plan is that it will offer high-quality recreation opportunities to residents of the county and nearby counties who would otherwise have to travel longer distances to experience the same recreational opportunities. This would result in a net benefit to air quality in the region.

Mitigation: None required.

Impact Significance After Mitigation: Beneficial.

REFERENCES – Air Quality

Bay Area Air Quality Management District (BAAQMD), Association of Bay Area Governments (ABAG), and Metropolitan Transportation Commission (MTC), Final Bay Area 2001 Ozone Attainment Plan, July 18, 2001.

Bay Area Air Quality Management District (BAAQMD), Bay Area 2000 Clean Air Plan, December 20, 2000.

Bay Area Air Quality Management District (BAAQMD), BAAQMD CEQA Guidelines, Revised December 1999.


Governor’s Office of Planning and Research, California Environmental Quality Act, CEQA Guidelines, Appendix G, 2002.
BIOLOGICAL RESOURCES

SETTING

DATA SOURCES AND METHODS OF ANALYSIS

This section is based largely on the Natural Resource Management Plan, or NRMP (Rana Creek Habitat Restoration, 2003), which was prepared following extensive field studies and GIS-based resource mapping and analysis. The NRMP describes existing biological resources within Coyote Bear Park to a high level of detail. The NRMP also establishes thresholds of activities proposed in the Master Plan that could adversely affect natural resources, and develops a management-based approach to reducing the scope and severity of those affects. The NRMP is therefore incorporated by reference into this EIR. This section provides a summary of the NRMP findings.

Additional information on existing biological resource conditions also was derived from other previous reports that describe the vegetation and wildlife resources of the park, including the Resource Management Transition Plan (Kephart and Stromberg, 1998), and the 1992 Draft Coyote Lake Master Plan (Planning Collaborative, 1992). Vegetation and wildlife habitats and special status species are described briefly, followed by a discussion of the issues related to by biological resources.

REGIONAL SETTING

The Park is situated between the Santa Clara Valley and the north-south trending ridgelines of the Mt Hamilton Range, and includes portions of the valley floor as well as slopes and ridge crest of the first set of hills east of the valley. Although located well inland, habitats and species assemblages within the park are subject to marine influences from the San Francisco Bay, and the area is considered to be within the San Francisco Bay floristic sub-region.

SITE SETTING

The landscape of Coyote Lake-Harvey Bear Ranch Park is comprised of steep grass covered hills, a central ridge covered with oak woodland savanna, and woodland canyons that drain toward Coyote Lake on the east side of the ridge, eventually reaching San Francisco Bay, and to the Pajaro River (Monterey County) to the west side of the ridge. To the west, the property borders low elevation farmland and developed subdivisions. The land ranges in elevation from 300 feet in the lowlands to 1,300 feet along the ridgeline. With a temperate Mediterranean climate, the land is exposed to long, dry, hot summers and seasonal rain.

Fire, drought, grazing and their interactions have influenced the composition the natural landscape. The grasslands, chaparral, and woodland communities are closely associated with soils and hydrology. On drier sites, with nutrient deficient soils, chaparral species thrive. On well-developed soils that retain moisture, forest and native grasslands persist. The plant community composition of the Mt. Hamilton range has been highly altered due to the invasion of exotic
species. Most of these invaders are drought, fire, and grazing-adapted annual grasses and herbaceous plants. Where perennial grass, chaparral, and woodland species dominate, resistance to invasion of annuals is high.

**Plant Communities and Wildlife Habitats**

The classification and mapping of vegetation illustrated on Figure 3-1 is based on interpretation of aerial photographs and field surveys. Vegetation is typical of the western inner Coast Range, and includes the following plant communities:

**Foothill Oak Woodland**

Foothill oak woodlands are found on the eastern portions of the property on gently sloping hills, swales and canyons (see Figure 3-1). The woodlands are dominated primarily by coast live oak, blue oak, buckeye, and gray pine. Oak woodlands provide habitat for numerous species of mammals, rodents, reptiles, and nesting and migratory birds, as well as insects and arthropods. The understory is composed of shade tolerant shrubs and herbaceous plants, including California blackberry, snowberry, miner’s lettuce, blue wild rye, poison oak, yampah, bed straw and sanicle.

Many changes have occurred to oak woodlands as a consequence of livestock grazing, which is implicated in introducing and spreading non-native annual grass species as well as creating habitat disturbances that are rapidly exploited by the fast-growing and competitive non-natives. The result has been a type-conversion from grasslands dominated by native perennial grasses to annual grasses. Grazing also is identified as contributing to the lack of regeneration (i.e. germination and establishment) of oak trees, especially blue and valley oak. Other changes that effect the composition and habitat quality of woodlands throughout California include urban and agricultural development and firewood harvesting.

**Diablan Sage Scrub**

Diablan sage scrub occurs in a few scattered locations on steep rocky slopes and isolated rock outcrops and as an occasional understory component of the oak woodlands. This dense shrub vegetation is dominated by California sagebrush, coyote brush, and chamise. Herbaceous plants are scattered throughout the shrub understory, and include foothill needlegrass, soap plant, monkey flower, and golden yarrow.

**Non-native Grassland**

Native grasses and other herbaceous plants (i.e. wildflowers) once dominated the grassland and woodland plant communities of the California Coast Ranges. Native grasses have been gradually replaced by non-native introduced grasses and forbs (non-grass herbaceous plants) by soil tillage, farming and intensive grazing. Non-native grasslands in the Park are dominated by ryegrass, slender oats, soft chess, ripgut brome, and rattlefescue, all introduced species. Dominant forbs include filaree, black mustard, bull thistle, rose clover, and yellow star thistle, also all introduced.
Figure 3-1
Vegetation and Wildlife Habitats
The latter species is an especially noxious invasive species that is classified as a List A-1 pest plant (Most Invasive Wildland Pest Plants) by the California Exotic Plant Pest Council (CalEPPC, 1999). Yellowstar thistle is prevalent over large areas of the northern portion of the Park. It also is common at lower elevations and is rapidly colonizing upper elevation grasslands, moving southward toward the Mendoza Ranch. Grazing or other means of vegetation management will be required to prevent this species from becoming dominant throughout the Park's grasslands. Other exotic pest plants that are present in lesser degree are Italian thistle, horehound, and fennel.

Non-native grasslands in the Park provide abundant habitat for burrowing mammals and reptiles that provide a prey base for hawks, owls and other birds, as well as for larger predators, such as coyote and bobcat. The breeding bird survey reported six out of seven indicator species, which are identified as indicators of the avian wildlife habitat value (California Partners in Flight, 2000), are present in grasslands of the site.

Native Grassland

Native grasslands are similar to the non-native grasslands, but include a substantial amount of native perennial grasses, such as foothill needlegrass, purple needlegrass, and blue wild rye. This grassland type represents the original vegetation that probably existed over the majority of the non-woodland portions of the park prior to the arrival of grazing livestock. Intact remnants of this type of grassland are scattered throughout the upper slopes of the Park. They typically occupy slopes, glades, and swales where soil moisture retention is higher than the surrounding area. Although small and fragmented, these areas have relatively high diversity of plant species. In addition to the perennial grasses, native plants include dwarf star lily, blue-eyed grass, blue dicks, Johnny jump-ups, and mariposa lily.

Portions of the native grassland on the Mendoza Ranch contain plants species typically associated with coastal grasslands. California oat grass was observed near the large pond at the southern boundary of the Mendoza Ranch, an extension of the known distribution of this species in Central California.

As a result of over 100 years of intensive grazing, soils, and plant composition have been altered in ways that are seen throughout California. Large areas consist of loose bare soil with large populations of pocket gophers. The absence of periodic fire also has likely played a role in the decline of native grasslands. Because they are reduced in geographic extent, fragmented, and altered from their pristine state, native grasslands are classified as threatened in the California Department of Fish and Game Natural Diversity Database (CNDDDB, 2001).

From the standpoint of wildlife habitat, native and non-native grasslands provide generally the same habitat values, and are likely to support similar fauna. Exceptions occur where serpentine soils are extensive or particularly dense and infertile, in which case plant cover and ease of excavation of burrows or dens is substantially diminished. However, serpentine soils support a specialized flora that may include host plants for Bay checkerspot butterfly, a federally listed species. Within the
park, one area near the ridge in the northern half of the park has been designated as critical habitat for this species.

**Riparian Forest and Scrub**

Willow riparian forest and scrub occurs along creeks and drainages at several locations throughout the park. Riparian forests consist of large mature arroyo or red willow trees that are adapted to seasonal or perennial high ground water in streams. Riparian scrub consists of willows and other shrubs, small trees and vines, such as blue elderberry, buckeye, and wild grape. Understory plants in both vegetation types include California blackberry, mugwort, rushes, and, in reaches with slow perennial flows or ponds, watercress and duckweed. In some places, riparian scrub represents an immature state of riparian forest, or it may persist in where repeating disturbance, such as floods or grazing, prevents the willow shrubs from becoming trees. The most extensive area is on Coyote Creek Arroyo near the Bear Ranch house and barns. Other smaller, often fragmented stands of this vegetation are located in smaller creeks and drainages.

Riparian habitats provide important habitat values for nesting, foraging, cover, and source of water for numerous wildlife species. Typically, 90% of the birds and mammals on California ranches occur only in riparian habitat (Kephart and Stromberg, 1998). Many species depend entirely on riparian habitat.

**Freshwater Seep**

Seasonal wetland springs and seeps originate at mid-elevations on the western and eastern slopes of the Park. Plants observed in these areas include toadrush, spikerush, sedges, rabbit foot grass, popcorn flower, spreading rush, iris-leaved rush, stinging nettles, and watercress. Seeps and springs on the Mendoza Ranch are a source of water for vernal pools and stock ponds. Other ponds on the Bear Ranch are the result of overflowing cattle troughs. Most of these sites also serve as water sources for livestock, therefore the vegetation is either highly disturbed by trampling or absent.

**Vernal Pools**

Vernal pools are shallow basins or swales within grasslands that pond water during the winter spring. Underlying soil layers are densely compacted and prevent the downward percolation of water. The pools dry slowly through evaporation, and support a specialized suite of plant species adapted to short periods of inundation and a gradual drying of the pool. Plants observed in vernal pools include coyote thistle, flowering quillwort, and prickly grass. No special status plant species associated with vernal pools were observed during surveys conducted during Spring 2001 (Rana Creek Habitat Restoration, 2001).

Vernal pools provide seasonal aquatic habitat for invertebrates, frogs, salamanders and birds. During the dry summer and fall months, these areas are often difficult to distinguish from surrounding grasslands, and therefore assume similar habitat values.
3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

Stock Ponds
Several stock ponds have been developed in the Park and it appears that historic vernal pool basins may have been enlarged for use by livestock as water sources. Stock ponds are typically impacted by livestock, with barren soils or very little vegetation below the high water mark. However, two of the ponds on the Mendoza Ranch supported substantial populations of plant cover and diversity during the Spring surveys due to reduced impact of grazing. These ponds also support non-native bass and bullfrogs, which reduce or eliminate populations of native amphibians (salamanders and frogs).

Wildlife Resources
Common and characteristic wildlife of the habitats in this project area region is described in the preceding discussion of plant communities and wildlife habitats. The remainder of this section focuses on fisheries.

Fisheries
Coyote Lake and Coyote Creek provide fisheries habitat for native and introduced fish, including stocked gamefish and unstocked bluegill, crappie and bass. The CDFG periodically stocks the lake with rainbow trout. The condition of native fisheries in the lake is unknown, although the upstream reaches of Coyote Creek may still support a native trout population. Management of the lake as an emergency domestic water supply and inspection of the earth dam for seismic concerns necessitates draining the lake, which limits the long term viability as a fishery. Downstream, the dam at Anderson Lake presents an insurmountable barrier to anadromous fish passage. Therefore, the lake is excluded from the U.S. Fish and Wildlife Service’s designation of critical habitat for steelhead and chinook salmon, which are presumed absent from the lake.

Special Status Species
Special status species are those that are recognized for their statewide or local rarity or vulnerability to various causes of habitat loss or population decline. Some species are formally listed and receive specific protection defined in federal or state endangered species legislation. Other species have no formal listing status as threatened or endangered, but are designated as "rare" or "sensitive" on the basis of policies adopted by federal or state resource agencies, by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives, or by organizations with acknowledged expertise such as the California Native Plant Society. These species are referred to collectively as "special status species," following a convention that has developed in practice but has no official sanction. For the purpose of this environmental assessment, special-status plants are defined as species that are:

- listed or proposed for listing as Threatened or Endangered under the Federal Endangered Species Act (federal ESA) (50 CFR 17.12 for listed plants and various notices in the Federal Register for proposed species);
- Federal Candidates for listing as Threatened or Endangered under the Federal ESA (58 FR 188: 51144-51190, September 30, 1993);
• Federal Species of Concern or California Species of Special Concern;

• listed by the State of California as Threatened or Endangered under the California Endangered Species Act (CESA) (14 CCR 670.5);

• plants listed as rare under the California Native Plant Protection Act of 1977 (California Fish and Game Code, Section 1900 et seq.); and

• plants considered by CNPS to be “rare, Threatened, or Endangered in California” (generally species from Lists 1B and 2; selected List 3 and 4 species are identified in Skinner and Pavlik 1994).

Table 3-2 summarizes the species considered to have reasonable potential to occur on the site based on documented observations, range, and habitat suitability. A more comprehensive list of endangered and threatened species that may occur in the Gilroy quad was provided by USFWS, and is included as Appendix X. Additional species are not considered further in this document because of low potential to occur in the project area (i.e., estuarine, marine and anadromous fish, and shorebirds).

**Special Status Plants**

The Resource Management Transition Plan (Kephart and Stromberg, 1998) identified 28 special status plant species with potential to occur in the Park based on a search of the California Native Plant Society Inventory. This list is amended here (Table 3-4) to include four additional species that are documented by the California Natural Diversity Data Base as occurring on the Gilroy and Gilroy Hot Springs USGS quads (CNDDB, 2003). Fourteen of these species have low potential to occur in the Park, based on absence of suitable habitat. Seventeen additional species have moderate potential based on suitable habitat in the Park, but were not observed during appropriately-timed botanical surveys. Only one species, big-scale balsam root, has been documented in the Park.

**Big-scale balsam root.** Of the potentially-occurring plant species, only big-scale balsamroot (*Balsamorhiza macrolepis ssp. macrolepis*) has been identified in the Park. This species had previously been documented as occurring in the northern part of Bear Ranch. Appropriately timed surveys in Spring and Summer of 2001 confirmed that it still occurs in this location. This species is a perennial herb up to two feet tall with large yellow flowers. Big-scale balsamroot typically blooms between March and June and may be found on grassy slopes in the northeastern portion of the park. Big-scale balsamroot is a California Native Plant Society List 1B species, meaning that it is rare, threatened, or endangered in California and elsewhere. CNPS List 1B plants meet the definitions of Section 1901, Chapter 10 or Secs. 2062 and 2067 of the CDFG Code and must be fully considered under CEQA.

**Special Status Wildlife**

A total of seven special status wildlife species were identified as potentially occurring in the Park (Rana Creek Habitat Restoration, 2003). Based on field studies conducted during spring and summer 2001, seven species were determined to be most likely to occur in habitats within or
### TABLE 3-4
SPECIAL STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN COYOTE-LAKE HARVEY BEAR RANCH COUNTY PARK

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Listing Status</th>
<th>General Habitat and Nearest Occurrence</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharsmith's onion</td>
<td>--/--/1B</td>
<td>Grassland and woodland, on serpentine; known only from the Mt. Hamilton Range</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Allium sharsmithiae</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>big-scale balsamroot</td>
<td>--/--/1B</td>
<td>Open grasslands, sometimes on serpentine soil; documented in CNDDDB on Bear Ranch, adjacent to parking lot at Coyote Dam.</td>
<td>Present. Observed during surveys.</td>
</tr>
<tr>
<td>Balsamorhiza macrolepis var. macrolepis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brewer's calandrinia</td>
<td>--/--/4</td>
<td>Chaparral and scrub, often after burns or on disturbed sites; Chaparral (rocky, usually serpentine)</td>
<td>Low potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Calandrinia breweri</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>chaparral harebell</td>
<td>--/--/1B</td>
<td>Chaparral (rocky, serpentine); known from only approximately five occurrences (CNPS, 2001).</td>
<td>Low potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Campamula exiguia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharsmith's harebell</td>
<td>--/--/1B</td>
<td>Chaparral (rocky, serpentine); known from only approximately five occurrences (CNPS, 2001).</td>
<td>Low potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Campamula sharsmithiae</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congdon's tarplant</td>
<td>--/--/1B</td>
<td>Grasslands with alkaline soils</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Centromadia parryi ssp. congdonii</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>robust spineflower</td>
<td>FE/--/1B</td>
<td>Coastal scrub, coastal dunes, openings in oak woodlands</td>
<td>Low potential. No suitable habitat present. Not observed during surveys.</td>
</tr>
<tr>
<td>Chorizanthe robusta var. robusta</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fountain thistle</td>
<td>--/--/1B</td>
<td>Grassland and openings in chaparral, in serpentine seeps</td>
<td>Low potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Cirsium fontinale var. campylon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brewer's clarkia</td>
<td>--/--/4</td>
<td>Chaparral, cismontane woodland, coastal scrub / often serpentine</td>
<td>Low potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Clarkia breweri</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Santa Clara Valley red ribbons</td>
<td>--/--/4</td>
<td>Chaparral, cismontane woodland</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Clarkia concinna ssp. automixia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Santa Clara Valley dudleya</td>
<td>FE/--/1B</td>
<td>Rocky serpentine outcrops in grassland, occurs on west side of valley</td>
<td>Low potential. Not observed during surveys of serpentine areas.</td>
</tr>
<tr>
<td>Dudleya setchellii</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brandegge’s eriastrum</td>
<td>--/--/1B</td>
<td>Chaparral, cismontane woodland / volcanic</td>
<td>Low potential. No suitable habitat with volcanic soil present. Not observed during surveys.</td>
</tr>
<tr>
<td>Eriastrum brandgegae</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jepson's woolly sunflower</td>
<td>--/--/4</td>
<td>Chaparral, cismontane woodland, coastal scrub / sometimes serpentine</td>
<td>Low potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Eriophyllum jepsonii</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hoover's button celery</td>
<td>--/--/1B</td>
<td>Vernal pools</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Eryngium aristulatum var. hooverii</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 See notes at end of table for explanation of status codes
TABLE 3-4 (Continued)
SPECIAL STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN COYOTE-LAKE HARVEY BEAR RANCH COUNTY PARK

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Listing Status USFWS/CDFG/CNPS</th>
<th>General Habitat and Nearest Occurrence</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>talus fritillary</td>
<td>--/--/1B</td>
<td>Chaparral cismontane woodland; lower montane coniferous forest / serpentine, often talus</td>
<td>Low potential. Not observed during surveys of serpentine areas.</td>
</tr>
<tr>
<td><em>Fritillaria falcata</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fragrant fritillary</td>
<td>--/--/1B</td>
<td>Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland / often serpentine</td>
<td>Moderate potential. Not observed during surveys of grassland serpentine areas.</td>
</tr>
<tr>
<td><em>Fritillaria liliacea</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Legenere limosa</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>woolly-headed lessingia</td>
<td>--/--/3</td>
<td>Coastal scrub, lower montane coniferous forests, grasslands, usually on clay or serpentine</td>
<td>Moderate potential. Not observed during surveys of grassland serpentine areas.</td>
</tr>
<tr>
<td><em>Lessingia hololeuca</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>smooth lessingia</td>
<td>FSC/--/1B</td>
<td>Chaparral or grassland with barren serpentine soil; west side of Valley; endemic to Santa Clara County</td>
<td>Moderate potential. Not observed during surveys of serpentine areas.</td>
</tr>
<tr>
<td><em>Lessingia micradenia var. glabrata</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>serpentine linanthus</td>
<td>--/--/4</td>
<td>Cismontane woodland, coastal scrub, grassland, usually on serpentine</td>
<td>Moderate potential. Not observed during surveys of serpentine areas.</td>
</tr>
<tr>
<td><em>Linanthus ambigus</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>large-flowered linanthus</td>
<td>--/--/4</td>
<td>Coastal bluff scrub, closed-cone coniferous forests, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, grasslands</td>
<td>Low potential. No suitable habitat present. Not observed during surveys.</td>
</tr>
<tr>
<td><em>Linanthus grandiflorus</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>arcuate bush mallow</td>
<td>--/--/1B</td>
<td>Chaparral</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td><em>Malacothamnus arcuatus</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hall’s bush mallow</td>
<td>--/--/1B</td>
<td>Chaparral and coastal scrub</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td><em>Malacothamnus hallii</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gairdner’s yampah</td>
<td>--/--/4</td>
<td>Broadleafed upland forests, chaparral, grasslands, vernal pools, usually in mesic sites</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td><em>Perideridia gairdneri ssp. gairdneri</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hairless popcorn flower</td>
<td>--/--/1A</td>
<td>Meadows and seeps (alkaline); marshes and swamps (coastal salt); Last confirmed siting in 1954. Possibly relocated near Antioch; identification uncertain. All collections since 1930’s located in the Hollister area; plant should also be looked for there (CNPS, 2001)</td>
<td>Low potential. Not observed during surveys.</td>
</tr>
<tr>
<td><em>Plagiobothrys glaber</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2 See notes at end of table for explanation of status codes
### TABLE 3-4 (Continued)
SPECIAL STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN COYOTE-LAKE HARVEY BEAR RANCH COUNTY PARK

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Listing Status</th>
<th>General Habitat and Nearest Occurrence</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>hooked popcorn flower</td>
<td>--/--/1B</td>
<td>Chaparral, cismontane woodland; grassland</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Plagiobothrys uncinitatus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>slender-leaved pondweed</td>
<td>--/--/2</td>
<td>Meadows and seeps; upper montane coniferous forest</td>
<td>Low potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Potamegeton filiformis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobb’s aquatic buttercup</td>
<td>--/--/4</td>
<td>Cismontane woodland; north Coast coniferous forest; grassland; vernal pools / mesic.</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Ranunculus lobii</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rock sanicle</td>
<td>--/CR/1B</td>
<td>Broadleaf upland forest; chaparral; valley and foothill grassland (rocky).</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Sanicula saxatilis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metcalf Canyon jewelflower</td>
<td>FE/--/1B</td>
<td>Serpentine outcrops in grassland or chaparral; nearest location uncertain (1957 record) but probably on west side of valley.</td>
<td>Low potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Streptanthus albidos ssp. albidos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>most beautiful jewelflower</td>
<td>--/--/1B</td>
<td>Serpentine outcrops in grassland or chaparral; occurs on west side of valley.</td>
<td>Low potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Streptanthus albidos ssp. peramoenus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mt. Hamilton jewelflower</td>
<td>--/--/1B</td>
<td>Chaparral; cismontane woodland. Known from approximately five occurrences in the Mt. Hamilton Range (CNPS, 2001).</td>
<td>Moderate potential. Not observed during surveys.</td>
</tr>
<tr>
<td>Streptanthus callistus</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**STATUS CODES:**

**FEDERAL (U.S. Fish and Wildlife Service)**
- FE = Listed as Endangered (in danger of extinction) by the Federal Government.
- FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the Federal Government.
- FSC = Federal Species of Concern. May be Endangered or Threatened, but not enough biological information has been gathered to support listing at this time.

**STATE: (California Department of Fish and Game)**
- CE = Listed as Endangered by the State of California
- CSC = California Species of Special Concern
- CR = Listed as Rare by the State of California

**CALIFORNIA NATIVE PLANT SOCIETY (CNPS)**
- List 1A: Plants presumed extinct
- List 2= Plants rare, threatened, or endangered in California but more common elsewhere
- List 3= Plants about which more information is needed
- List 4= Plants of limited distribution


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3 See notes at end of table for explanation of status codes.
adjacent to the Park. Of these, two (Bay checkerspot butterfly and California red-legged frog) are listed Threatened or Endangered species or candidate species for listing. These species, their habitats, protection status, and likelihood of occurrence are summarized in Table 3-5.

Mammal species of concern with potential to occur in the project area are limited to bats, predominantly of the genus *Myotis*. Bats establish roosts in tree trunks, under bridges, and in abandoned buildings in habitats near woodlands or in close association with water bodies where they forage for insects. All bat species are Species of Special Concern in California.

**Western Pond Turtle.** Western Pond Turtle (*Clemmys marmorata*), a California Species of Concern, occurs in the pond south of Bear Ranch house. Western pond turtles typically live in calm water with aquatic vegetation and suitable logs or rocks for basking sites. They nest in soil and vegetation along wetland margins or in adjacent uplands (Rathburn et al 1992), requiring a buffer of habitat surrounding aquatic habitat. Their food includes aquatic plants, invertebrates, carrion, and fish (Stebbins 1985).

There are two subspecies, the northwestern pond turtle (*Clemmys marmorata marmorata*) and the southwestern pond turtle (*Clemmys marmorata pallida*). The northwestern pond turtle is found north of the San Francisco Bay-Delta Estuary, while the southwestern pond turtle is found south of the San Francisco Bay. The two subspecies intergrade between the San Francisco Bay region and the San Joaquin Valley, therefore the subspecies occurring at Bear Ranch is unknown. Both subspecies are Federal species of concern and California species of special concern.

Western pond turtles lay their eggs April-August in buried nests, usually near water. Although the eggs hatch in 10-12 weeks, the young remain in nests throughout the winter. A number of animals prey on eggs, hatchlings, and juveniles. Predators include raccoons, dogs, coyotes, great blue herons, snakes, largemouth bass, and bullfrogs (Stebbins 1985).

Two subspecies are found in California, the northwestern (*Clemmys marmorata marmorata*) and the southwestern (*Clemmys marmorata pallida*). These two subspecies overlap in range just south of San Francisco Bay.

**Bay Checkerspot Butterfly.** The Bay checkerspot butterfly was recognized as a threatened species in 1987 (U.S. Fish & Wildlife Service [USFWS], 1987). Critical habitat (U.S. Fish & Wildlife Service, 2001) was recently designated and includes a portion of the northern ridgeline. A Recovery Plan for the butterfly and other serpentine endemic species was published by the U.S. Fish & Wildlife Service (1998). The status of the Bay checkerspot butterfly within the Park is not known, as no surveys for the species have been conducted. The critical habitat designation was based on a brief confirmation of the presence of Bay checkerspot butterfly and aerial survey of potential habitat in the late 1980’s (Arnold, pers. comm.). Elsewhere within the Santa Clara Valley, the Bay checkerspot has previously been known to occur at Calero Reservoir (Buggy data base), Uvas Reservoir (Buggy data base), at Tulare Hill (Murphy, 1990) and Santa Teresa County Park (Arnold, 1992).
### TABLE 3-5
SPECIAL STATUS WILDLIFE WITH POTENTIAL TO OCCUR IN COYOTE-LAKE HARVEY BEAR RANCH COUNTY PARK

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Listing Status&lt;sup&gt;4&lt;/sup&gt;</th>
<th>General Habitat and Nearest Occurrence</th>
<th>Potential to Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Invertebrates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bay checkerspot butterfly</td>
<td>FT/--</td>
<td>Restricted to native grasslands on outcrops of serpentine, with dwarf plantain and owl’s clover host plants; Critical Habitat designated within park on ridge west of Coyote Lake.</td>
<td>High potential.</td>
</tr>
<tr>
<td><em>Euphydra editha bayensis</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opler’s longhorn moth</td>
<td>FSC/--</td>
<td>Serpentine grassland with cream cups host plant; occurs SW of San Martin</td>
<td>Moderate Potential. Potential habitat in serpentine grassland; no surveys conducted for this species.</td>
</tr>
<tr>
<td><em>Adela oplerella</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Amphibians</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>foothill yellow-legged frog</td>
<td>FSC/CSC</td>
<td>Shaded shallow streams and riffles with a rocky streamed; known from Coyote Creek 0.5 mile upstream from lake, SE edge of Park.</td>
<td>Moderate potential. More suitable habitat upstream from lake, but frogs may occasionally migrate or wash downstream.</td>
</tr>
<tr>
<td><em>Rana boylii</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California red-legged frog</td>
<td>FT/CSC</td>
<td>Breed in stock ponds, pools, and slow-moving streams with emergent vegetation; adjacent upland habitats are often used outside the breeding season. Known from upper Coyote Creek and Coe SP, 2-5 miles east of Park.</td>
<td>Low potential. Potential habitat occupied by bass and bullfrogs, predators on CRLF. None observed during focused amphibian surveys.</td>
</tr>
<tr>
<td><em>Rana aurora draytonii</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California tiger salamander</td>
<td>FC/CSC</td>
<td>Wintering sites occur in grasslands occupied by burrowing mammals; breed in ponds, vernal pools, and slow-moving or receding streams. Known from Coe SP, ~5 miles east of Park.</td>
<td>Low potential. Potential habitat occupied by bass and bullfrogs, predators on CTS. None observed during focused amphibian surveys.</td>
</tr>
<tr>
<td><em>Ambystoma californiense</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reptiles</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western pond turtle</td>
<td>FSC/CSC</td>
<td>Freshwater ponds and slow streams edged with sandy soils for laying eggs.</td>
<td>Observed in pond on Bear Ranch. Freshwater ponds with emergent aquatic vegetation and provide potential habitat.</td>
</tr>
<tr>
<td><em>Clemmys marmorata</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Birds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burrowing owl</td>
<td>FSC/CSC</td>
<td>Nests and forages in low-growing grasslands that support burrowing mammals. Known from Vasquez Ranch, NW of Gilroy.</td>
<td>Moderate potential. Suitable habitat exists on Bear Ranch near valley floor. Not observed during breeding bird survey.</td>
</tr>
<tr>
<td><em>Athene cunicularia</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>4</sup> See notes at end of table for explanation of status codes
TABLE 3-5 (Continued)
SPECIAL STATUS WILDLIFE WITH POTENTIAL TO OCCUR IN COYOTE-LAKE HARVEY BEAR RANCH COUNTY PARK

STATUS CODES:

**FEDERAL:** (U.S. Fish and Wildlife Service)
FE = Listed as Endangered (in danger of extinction) by the Federal Government.
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**STATE:** (California Department of Fish and Game)
CE = Listed as Endangered by the State of California
CSC = California Species of Special Concern

SOURCES: CDFG, 2001; CDFG 2001a; CDFG 2001b; Kephart and Stromberg, 1998; Garth and Tilden, 1986;

Although the Bay checkerspot is usually associated with serpentine grassland vegetation, particularly areas that are characterized by native bunch grasses, the species historically was also known from a few non-serpentine locations. The primary oviposition and larval food plant is dwarf plantain (*Plantago erecta*). In some years the larvae require a secondary food plant, one of two species of owl’s clover (*Orthocarpus densiflora* or *O. purpurascens*).

Although the vegetation throughout the slopes and ridge area has been consists largely of non-native annual grassland, patches of perennial grasses and other native vegetation occur on serpentine soils within the area designated as critical habitat for Bay checkerspot butterfly. These locations likely support food plants for serpentine indigenous insects such as the federally-listed Bay checkerspot butterfly (*Euphydryas editha bayensis*) and Opler’s longhorn moth (*Adela oplerella*), a federal species of concern. Dwarf plantain (*Plantago erecta*), the primary larval food plant of the Bay checkerspot, were observed during botanical surveys of the Park, including within the vicinity of the trail segment that abuts the critical habitat area.

The adult flight season is typically about four to six weeks in length, starting in late February to mid-March and terminating in late April to early May. Actual starting and ending times can vary by several weeks from year-to-year. Individual adults live approximately one to two weeks, during which time they must mate and reproduce. Adults obtain energy and nutrients from the nectar of various native wildflowers that grow in serpentine grasslands. *Lomatium utriculatum*, *L. dasycarpum*, *Lathonia californica*, *Layia platyglossa*, *Linanthus adrosaceus*, *Muilla maritima*, *Amsinckia intermedia*, and *Allium serratium* are known nectar plants. Mate location occurs primarily on hilltops, where both sexes congregate after eclosion (i.e., adult emergence from the pupal life stage). Upon mating, females disperse throughout the hilltops and away from the hilltops to lay their eggs. The eggs are laid as masses containing as many as 200 eggs, near the base of *Plantago erecta* plants.
Larvae hatch in about 10-14 days and feed for approximately another 3-4 weeks until their food plants senesce or are defoliated. Young larvae, which have limited mobility at this stage, frequently fail to find sufficient edible food plants and starve. Typically, 90% or more of these young larvae starve to death. As its annual food plant senescence, the partially grown larvae enter a physiological dormant period, known as diapause, which is spent under rocks or in cracks and crevices in the soil to survive the dry season when there is no food for the larvae. The summer diapause ends with the onset of the next rainy season and the germination of *Plantiago erecta*. Larvae resume feeding and complete their development by pupating. The pupal stage generally lasts about 2-4 weeks before emergence of the adult butterfly.

Sun exposure, topographic aspect, and microclimatic conditions at ground level affect the developmental rates of the immature stages of the butterfly and the seasonal activity period of the adults. Topographic diversity in conjunction with the abundance of food plants are important determinants of habitat quality for the checkerspot. Locations with considerable habitat on eastern and northern-facing slopes are more likely to allow populations to persist through periods of drought or other short-term, adverse climatic conditions (Dobkin et al., 1987; Weiss, 1996).

Studies of the Bay checkerspot butterfly by Dr. Paul Ehrlich and his colleagues at Stanford University for the past 35 years have determined that the butterfly has a "metapopulation" type of distribution and population structure. A metapopulation is a network of semi-isolated populations with some level of regular or intermittent migration and gene flow among them, in which individual populations may go extinct but then be re-colonized by dispersing individuals from other populations. Studies of the checkerspot contributed to the formulation of the metapopulation concept that is now widely discussed in conservation biology (Ehrlich et al., 1975, 1980; Harrison, 1994; Murphy et al., 1990).

**Raptors and Passerines**

Nesting raptors, which are protected under the Bald Eagle Protection Act and the Migratory Bird Treaty Act, may occur in dense oak woodlands on the east facing slope of the main ridgeline. Several raptors were identified during field surveys and are reported in the NRMP, including white-tailed kite, Cooper's hawk, red-shouldered hawk, red-tailed hawk, golden eagle, and American kestrel. Nesting migratory songbirds, which are protected under the Migratory Bird Treaty Act, also were identified during breeding bird surveys (Rana Creek, 2003).

**REGULATORY FRAMEWORK**

This section briefly describes federal, state and regional regulations, permits, and policies that apply broadly to biological resources and wetlands within the project area. Local ordinances, policies and guidelines (i.e. those set forth in City General Plans) that address biological resources are not discussed in detail in this document. Nonetheless, such local regulations are incorporated into this document by reference and would apply to subsequent activities in the project area and additionally considered in the design of those activities.
3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

U.S. ARMY CORPS OF ENGINEERS AND U.S. ENVIRONMENTAL PROTECTION AGENCY REGULATION OF WATERS OF THE UNITED STATES, INCLUDING WETLANDS

The Corps and Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into waters of the United States, including wetlands, under Section 404 of the Clean Water Act. Proposed activities that would result in the placement of dredged or fill material into waters of the United States require a Section 404 permit from the Corps. Some classes of fill activities may be authorized under general (Nationwide) permits if specific conditions are met.

Waters of the United States and wetlands are present in the project area, and include Coyote Lake and Coyote Creek (inlet to the lake), as well as numerous small streams that drain toward both the east and west side of the ridge, springs and seeps, seasonal wetlands, and livestock ponds. These wetlands and other waters of the United States are subject to Corps jurisdiction, and may be affected by certain elements of the proposed Master Plan. Nationwide permits, which authorize specific types of activities with low potential for impact to jurisdictional wetlands or other waters may apply to certain proposed activities, such as trails or habitat restoration. However, these permits do not authorize activities that are likely to jeopardize the existence of a Threatened or Endangered species (listed or proposed for listing under the federal ESA) or that may affect properties listed or eligible for listing in the National Register of Historic Places (56 FR 59134-59138, November 22, 1991). In addition to conditions outlined under each nationwide permit, project-specific conditions may be required by the Corps as part of the Section 404 permitting process.

The federal government also supports a policy of minimizing "the destruction, loss, or degradation of wetlands." Executive Order 11990 (May 24, 1977) requires that each federal agency take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

FEDERAL POLICIES ON RIPARIAN HABITAT IN CALIFORNIA

Riparian habitats have a variety of functions, including providing high-quality habitat for resident and migrant wildlife, streambank stabilization, and runoff water filtration. Throughout the United States, riparian habitats have declined substantially in extent and quality compared with their historical distribution and condition. These declines have increased concerns about dependent plant and wildlife species, leading federal agencies to adopt policies to arrest further loss. USFWS mitigation policy identifies California’s riparian habitats as belonging to resource Category 2, for which no net loss of existing habitat value is recommended (46 FR 7644, January 23, 1981).

STATE REGULATIONS AND POLICIES ON STREAMS AND WETLANDS

The California Department of Fish and Game (CDFG) regulates activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. These activities are regulated under the California Fish and Game Code (Section 1601 for public
agencies and Section 1603 for private individuals). Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. Requirements may include avoidance or minimization of the use of heavy equipment, limitations on work periods to avoid impacts on wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses. A Streambed Alteration Agreement will be requested from CDFG for all construction activities that have the potential to result in alteration or fill of areas subject to Section 1603.

The State Water Resources Control Board, acting through the San Francisco Bay Regional Water Quality Control Boards (RWQCB) and the Central Coast RWQCB, must certify that a Corps permit action meets State water quality objectives (Section 401, Clean Water Act). Additionally, the RWQCB enforces pollutant discharges, including discharges of fill, into waters of the state regardless of federal jurisdiction, such as in the case of isolated wetlands that no longer are regulated by the Corps, through the Porter-Cologne Act. The RWQCB also issues permits under the National Pollutant Discharge Elimination System (NPDES) for projects that require over one acre of grading. These permits protect water quality by ensuring Best Management Practices are employed, usually through implementation of a Storm Water Pollution Prevention Plan (SWPPP).

**FEDERAL ENDANGERED SPECIES ACT**

The USFWS (jurisdiction over plants, wildlife, and resident fish) and National Marine Fisheries Service (NMFS; jurisdiction over anadromous fish and marine fish and mammals) oversee the federal ESA. Section 7 of the Act mandates that all federal agencies consult with the USFWS and NMFS to ensure that federal agencies actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. The federal agency is required to consult with the USFWS and NMFS if it determines a “may effect” situation will occur in association with the proposed project. The federal ESA prohibits the “take” of any fish or wildlife species listed as Threatened or Endangered, including the destruction of habitat that could hinder species recovery.

Section 3 of the Act requires the USFWS or NMFS to designate critical habitat for Threatened or Endangered species. Critical habitat is defined by Section 3 of the Act as habitat that is “essential to the conservation of the species.” Section 7 of the Act protects USFWS- and NMFS-designated critical habitat for listed species and prohibits “destruction or adverse modification” of these designated areas. Under Section 9 of the federal ESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the removal, possession, damage or destruction of any endangered plant from federal land. Section 9 also prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or currently are being petitioned for listing receive no protection under Section 9 of the federal ESA.

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5 Take is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.
Section 10 of the federal ESA requires the issuance of an “incidental take” permit before any public or private action may be taken that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e., take) any individual of an Endangered or Threatened species. The permit requires preparation and implementation of a habitat conservation plan that would offset the take of individuals that may occur, incidental to implementation of the project by providing for the overall preservation of the affected species through specific mitigation.

**MIGRATORY BIRD TREATY ACT AND BALD EAGLE PROTECTION ACT**

The federal Migratory Bird Treaty Act (16 U.S.C., Sec. 703, Supp. I 1989) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Birds of prey are protected in California under the State Fish and Game Code, Section 3503.5 1992). Section 3503.5 states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFG. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact. This approach would apply to red-tailed hawks, American kestrels, barn owls, and other birds of prey. Project impacts to these species would not be considered “significant” in this EIR unless they are known or have a high potential to nest on the site or rely on it for primary foraging.

The federal Bald Eagle Protection Act prohibits persons within the United States (or other places subject to U.S. jurisdiction) from “possessing, selling, purchasing, offering to sell, transporting, exporting or importing any bald eagle or any golden eagle, alive or dead, or any part, nest or egg thereof.”

**CALIFORNIA ENDANGERED SPECIES ACT**

California implemented its own Endangered Species Act in 1984. The state act prohibits the take of Endangered and Threatened species; however, habitat destruction is not included in the state’s definition of take. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. The CDFG administers the act and authorizes take through Section 2081 agreements (except for designated “fully protected species”).

Regarding rare plant species, CESA defers to the California Native Plant Protection Act of 1977, which prohibits importing of rare and endangered plants into California, taking of rare and endangered plants, and selling of rare and endangered plants. State-listed plants are protected mainly in cases where state agencies are involved in projects under CEQA. In this case, plants listed as rare under the California Native Plant Protection Act are not protected under CESA but can be protected under CEQA.
NATIVE AND HERITAGE TREE ORDINANCES

Some cities and counties have adopted native or heritage tree ordinances or policies to protect large or native trees. The County Tree Preservation and Removal (County Ordinance Code C-16) ordinance requires project applicants to obtain a tree removal permit, and in some cases compensate for the removal of protected trees. Removal and indirect impacts on heritage and native trees will be avoided and minimized to the fullest extent possible during construction.

SANTA CLARA COUNTY GENERAL PLAN POLICIES AND GUIDELINES

The Santa Clara County General Plan (1994) recognizes the importance of natural habitats and biodiversity. In particular, the General Plan emphasizes the role of certain types of habitat, such as riparian areas and serpentine soils, to support proportionally high numbers of special status species. The General Plan outlines several strategies and policies to increase and maintain protection of important habitat areas within the County. The proposed Master Plan incorporates similar strategies and goals, and is consistent with the General Plan by providing for:

- Improved knowledge and awareness of habitats and natural areas (Strategy #1);
- Protection of biological integrity of critical habitat areas (Strategy #2);
- Encouragement of habitat restoration (Strategy #3); and
- Evaluation of the effectiveness of environmental mitigations (Strategy #4).

The General Plan includes specific policies on habitat and biological diversity, which also are addressed within the proposed Master Plan:

- Resource identification, inventory, mapping, and database updates coordinated with local, regional, state and federal resource agencies;
- Acquisition of habitats that are unique or support greater species diversity and richness, and greater numbers of special status species;
- Preservation of critical habitat linkages and wildlife corridors;
- Limitations on land uses in resource conservation areas;
- Promotion of habitat restoration and enhancement, particularly with respect to wetland, riparian, and other habitat types rich in diversity.

WATERS OF THE UNITED STATES (INCLUDING WETLANDS)

For the purpose of this document, the term “waters of the United States” is an encompassing term used by the U.S. Army Corps of Engineers (Corps) for areas that would qualify for federal regulation under Section 404 of the Clean Water Act. Wetlands are a subset of waters of the United States.

Wetlands are defined as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a
prevalence of vegetation typically adapted for life in saturated soil conditions (33 Code of Federal Regulations [CFR] 328.3[b], 40 CFR 230.3). To meet the Corps’ criteria as a Section 404 wetland, a site must be subject to hydrological conditions that result in inundated or saturated soils, and that support vegetation that is adapted to such conditions.

“Other waters of the United States” are sites that typically lack one or more of the three indicators identified above (wetland hydrology, vegetation, or soils). Other waters of the United States that may occur in the project area include drainages and seasonal wetlands that form in shallow, disturbed depressions in ruderal habitat. For the purpose of this document, drainages include all streams, creeks, rivers, and other surface features with defined beds and banks.

Waters of the United States and wetlands are present in the project area, and include Coyote Lake and Coyote Creek (inlet to the lake), as well as numerous small streams, springs and seeps, seasonal wetlands, and livestock ponds. These wetlands and other waters of the United States are subject to Corps jurisdiction, and may be affected by certain elements of the proposed Master Plan. For all program elements described in this EIR, the Parks Department will identify all potentially jurisdictional features in the vicinity of proposed construction operations, and will obtain permits as necessary. Measures outlined in this document to avoid or minimize impacts to wetlands and other waters of the United States will apply to all jurisdictional features identified in work plans proposed by the Park.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

To determine the level of significance of an identified impact, the criteria outlined in the CEQA Guidelines were used. The following is a discussion of the criteria used to determine the significance of impacts to biological resources.

CEQA (Section 15206) specifies that a project shall be deemed to be of statewide, regional, or area-wide significance if it would substantially affect sensitive wildlife habitats including, but not limited to, riparian lands, wetlands, bays, estuaries, marshes, and habitats for rare and endangered species as defined by Fish and Game Code Section 903.

Appendix G of the CEQA Guidelines indicates that a project would have a significant effect on the environment if it would:

- interfere substantially with the movement of any resident or migratory fish or wildlife species;
- substantially diminish habitat for fish, wildlife or plants; or
- substantially affect a rare or endangered species of animal or plant or the habitat of the species.
CEQA Section 15380 further provides that a plant or animal species, even if not on one of the official lists, may be treated as "rare or endangered" if, for example, it is likely to become endangered in the foreseeable future.

CEQA Section 15065 further directs lead agencies find that a project may have a significant effect on the environment if it has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish and wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory.

Pursuant to the Federal Endangered Species Act (Sections 7(a)(3) and (4)) every federal agency is required to confer with the Secretary of the Interior on any action likely to jeopardize the continued existence of a listed or proposed species or adversely affect the critical habitat of those species.

Based on guidelines established by the USFWS and the CDFG, a project is considered to have a significant adverse impact on biological resources if it results in substantial disruption to, or destruction of, any special status species, their habitat, or breeding grounds. A project is also considered to have a significant impact if it results in a substantial loss of important plant or animal species; causes a change in species composition, abundance or diversity beyond that of normal variability; results in the direct or indirect measurable degradation of sensitive habitats (e.g., wetlands, riparian corridors, vernal pools, oak woodlands); or results in loss of a significant plant community.

**Local Plans and Policies.** CEQA Guidelines (Appendix G) specifies that a project will normally have a significant impact on the environment if it will physically impact communities or species protected by adopted environmental plans and goals of the communities where it is located. For example, both the City and County of Los Angeles have ordinances protecting oak trees. Any action that would conflict with these policies is considered a significant impact.

**Less than Significant Impacts.** Impacts are generally considered less than significant if the habitats and species affected are common and widespread in the region and the state.

**Beneficial Impacts.** Impacts are considered beneficial if the action causes no detrimental impacts and results in an increase of habitat quantity and quality.

For the purposes of this EIR, three principal components of the guidelines outlined above were considered:

- Magnitude of the impact (e.g., substantial/not substantial)
- Uniqueness of the affected resource (rarity), and
- Susceptibility of the affected resource to perturbation (sensitivity)
The evaluation of significance must consider the interrelationship of these three components. For example, a relatively small magnitude impact to a State or federal listed species would be considered significant because the species is very rare and is believed to be very susceptible to disturbance. Conversely, a plant community such as California annual grassland is not necessarily rare or sensitive to disturbance. Therefore, a much larger magnitude of impact would be required to result in a significant impact.

**IMPACT MECHANISMS**

Biological resources could be directly affected by construction activities during construction of Park facilities, by recreational use, or by ongoing operational and maintenance activities within the Park. Direct and indirect disturbance from construction activities could result in the loss or degradation of biological resources in the following ways:

- grading, excavating, or other types of ground-disturbing activities associated with construction of new Park facilities;
- temporary stockpiling of soil or construction materials and side-casting of soil and other construction wastes;
- soil compaction, dust, and water runoff;
- noise disturbance to wildlife species from construction activities;
- effects on nocturnal wildlife from lighting associated with new park facilities;
- effects of current or future land management practices on special status species, sensitive plant communities or wildlife habitat;
- effects of increased recreational use could diminish wildlife habitat value in some locations;
- trail use near potential Bay checkerspot habitat areas during larval stages;
- trail re-alignment effects on oak trees by soil compaction or tree removal; and
- Changes of use (i.e. new facilities or park programs) could disturb or displace open space.

The following analysis identifies activities or Master Plan program elements that could adversely affect biological resources in the Park. The impacts are based on the range of activities covered under the Project Description, although some of these elements have not been developed to a level of detail that would enable a complete analysis. For that reason, the analysis has been subdivided to address those potential impacts and mitigation measure relevant to the Project-level, or Master Plan Phase 1 program elements, i.e., those with the highest likelihood of being implemented in the short term, or within three years of Master Plan adoption. Following this, projects that are at a programmatic level only are evaluated in more general terms, commensurate with the level of detail available at this time.
The mitigation measures are organized in this way as well. For project level elements of the Master Plan, mitigation measures are described in adequate detail to facilitate implementation. At the programmatic level, the mitigation measures are intended to establish criteria and protocols for the eventual crafting and refinement of measures to avoid or reduce specific impacts identified through analysis of subsequent CEQA actions. The eventual impact-specific mitigations shall, at a minimum, include the components described in this document.

The mitigation measures described for potential adverse effects to special-status species have not been developed through formal consultation or coordination with resource agencies (e.g., CDFG and USFWS). The mitigation measures may be modified during coordination with the resource agencies for subsequent activities. Additional mitigation measures that may be identified as part of the permit review process (e.g., Section 404, 1603 streambed alteration agreement, or biological opinion, if needed) would be implemented as part of the project and monitored during construction to ensure compliance.

**DEFINITIONS**

The term “qualified wildlife biologist” as used below indicates a person with at least an undergraduate degree in wildlife or a related field, and either professionally certified as a Wildlife Biologist (C.W.B.) by The Wildlife Society, or working under the direct supervision of a C.W.B.

The term “qualified botanist” as used below indicates a person with at least an undergraduate degree in botany, plant ecology or a related field, and with a minimum of three years professional field experience within the region or working under the direct supervision of a professional botanist with at least six years field experience in the region.

**IMPACTS AND MITIGATION MEASURES**

Impact Biological Resources-1: Construction of a new trail segment to replace a portion of the ridgeline ranch road, and subsequent use and maintenance of the segment, could result in impacts to Bay checkerspot butterfly critical habitat and loss of individuals during reproductive periods. Less Than Significant with Mitigation Measures.

Because it is a federally listed threatened species, any impacts to the habitat of the Bay checkerspot butterfly may require a permit for “incidental take” to comply with the Endangered Species Act. While acquisition of lands including and surrounding the critical habitat designated area provides protection of the habitat, activities such as trail construction, periodic blading or other maintenance activities, and trail use could result in take of the butterfly’s life stages, most likely larvae, at locations where *Plantago erecta* grows on the trails. For these reasons, the USFWS should be consulted prior to any activity within the area designated as critical habitat.

**Project-Level Components**

As discussed in Chapter 2, Project Description, project-level components include 1) installation of Phase 1 trails, gates, fencing, staging areas, and signage (Western Flat and Mendoza Area);
2) campground improvements, including reduction of density and addition of shower facilities (Lakeside Area); 3) establishment of hang-gliding launch and landing sites (Slopes and Ridge Area); 4) establishment of equestrian camping at existing overflow parking area (West Flat Area); 5) installation of boat self-launch area for kayaks/non-motorized boats (Lakeside Area); and 6) use of the Mendoza Ranch Area pond for annual Fishability Days event.

The Trails Plan in the proposed Master Plan identifies segments 2 and 5 as Phase 1 priorities, to be implemented as a Project-level component. Phase 1 trails are specifically designed to minimize impacts to sensitive habitats and provide an environmentally superior alternative to existing ranch roads. Phase 1 includes rerouting of a segment of the ridge line ranch road, which is intended to bypass the steep gradients encountered on portions of the ridge road and improve visitor access. The segment passes through the area designated as critical habitat for Bay checkerspot butterfly.

Impacts to Bay checkerspot butterfly and its habitat could occur through loss of larval food plants of the Bay checkerspot butterfly. *Plantago erecta* generally grows in areas of thin soils, rock outcrops, and other places where competition with other plants is minimal. Future maintenance of trails, as well as use by hikers and equestrians, could also result in damage to the food plant, and any butterfly larvae feeding at these patches of food plants.

**Program-Level Components**

As indicated in Chapter 2, subsequent environmental documentation is required for implementation of program-level components; they are evaluated here on a conceptual level. Development would include construction of an 18-hole golf course, a fishing pond, Phase 2 trails, building and event center, Bicycle Park, and other site-specific use areas. Improvements outside of the West Flat Area include development of picnic areas in the Lakeside Area and minor development in the Mendoza Area.

No program-level components would be located within the Bay checkerspot butterfly critical habitat designated area.

**Mitigation Measure Biological Resources-1a:** Pre-construction surveys should be performed at locations where, trail construction, maintenance, mowing or other ground-disturbing activities are necessary to prepare or maintain the existing alignments for public use. Surveys should include searches for Bay checkerspot adult and larval life stages. Any ground-disturbing activities in occupied habitat should be limited to the fall months (September through November *July through October*) and completed prior to the rainy season. At this time of year, partially grown larvae are in diapause and hiding under rocks or in cracks and crevices in the soil, and are considered less vulnerable than when they are actively feeding in the spring. Maintenance and construction may take place at other times along portions of the trails where survey results do not detect the species.

**Mitigation Measure Biological Resources-1b:** Vegetation management of annual and serpentine grasslands that support the food plants of these insects can improve the habitat quality by reducing weeds and annual grasses. Implementation of the Natural Resource Management Plan (NRMP) included as part of the proposed Master Plan would likely
improve habitat quality and the potential for supporting a population of Bay checkerspot within the Park. Grazing with cattle has been used at other locations in Santa Clara County to effectively manage the butterfly’s habitat. The timing and intensity of the grazing program is critical for favoring the growth of the food plants, and would be stipulated in response to monitoring as described in the NRMP.

Thus, implementation of a grazing program to improve habitat may benefit the Bay checkerspot in off-trail locations to such a degree that any impacts from trail and trail use are insignificant by comparison. The grazing program would similarly benefit the Opler’s longhorn moth.

**Impact Significance After Mitigation:** Less Than Significant.

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**Impact Biological Resources-2: Implementation of the Master Plan could result in direct and indirect disturbance of western pond turtle nesting habitat located near the pond next to the Bear Ranch house.**

Western pond turtle, a Federal species of concern and a California species of special concern, occupies the pond near the Bear Ranch house in the northeast corner of the West Flat Area. This is the only pond in the park where pond turtles were detected during reptile and amphibian surveys that included seining. Habitat for the pond turtle at this location includes the pond itself, as well as an indeterminate area of adjacent upland used for nesting. The pond turtle population has persisted in proximity to the Bear Ranch House and past sources of disturbance, including people, domestic pets, and vehicle traffic on the driveway. Under the Master Plan, the footprint of development near the pond would remain essentially unchanged, and there would be the same access by pond turtles to suitable nesting sites with the same level of protective vegetative cover. The type of use near the pond would change from a residence to a family picnic site and scenic overlook, which would introduce larger numbers of people and traffic near the pond.

**Project-Level Components**

No project-level of the Master Plan would directly impact pond turtles or the pond where they occur. The driveway to the house would be used as a Phase 1 Trail, and is located within 50 feet of the east side of the pond.

**Program-Level Components**

No program-level components would directly impact pond turtles or the pond where they occur. Indirect impacts to the pond turtle could result from use of the family picnic/overlook located at the Bear Ranch house site. Foot traffic in areas adjacent to the pond that used by pond turtles for nesting could be trampled, and picnic refuse could attract birds, such as ravens, that could prey on hatchlings.

**Mitigation Measure Biological Resources-2a:** Consistent with the Natural Resources Management Plan, visual surveys should be conducted for pond turtles in late spring (May-
June) and early fall (August-September), during warm days when turtles are likely to be active. Surveys should include counts of adult, juvenile, and hatchling turtles, as well as the presence, absence, or sign of predators (bass, bullfrogs, herons, raccoons or snakes. Although difficult to locate, any potential nest sites also should be documented.

Mitigation Measure Biological Resources-2b: Surveys should assess the adequacy of basking sites, an important habitat element for pond turtles. If shoreline basking sites become limited by vegetation growth, or are otherwise unavailable, then new basking sites should be created. Suitable sites can be provided by placement of a tree trunk or floating platform, secured to remain in the middle of the pond.

Mitigation Measure Biological Resources-2c: Consistent with the Natural Resources Management Plan, park visitors and their pets should be limited to approximately 150 feet from the pond edge to prevent trampling of nests. Nesting season extends from approximately April through August, therefore, the limits to access may be relaxed outside of this period. The family picnic/overlook may be located within the 150 buffer, but would be offset by a larger buffer elsewhere around the pond.

Mitigation Measure Biological Resources-2d: A speed limit of 10 miles per hour during April-August should be established and enforced on the driveway to the family picnic/overlook.

Mitigation Measure Biological Resources-2e: The golf course should be designed to include a buffer, or setback, of 150 feet between the south and west of the pond and the nearest fairway. Fairway margins should retain a high rough that is subject to maintenance only outside of the pond turtle nesting period. The buffer would encompass the slope below the pond with the exposures preferred for nesting. The extensive grassland habitat to the east of the pond will remain in its current natural condition, also available for nesting.

Impact Significance After Mitigation: Less Than Significant.

Impact Biological Resources-3: Implementation of the trails plan in the proposed Master Plan could result in temporary displacement of habitat for big-scale balsam root. Less Than Significant with Mitigation Measures.

Big scale balsam root is known from the northern part of the Park, within the area designated critical habitat for Bay checkerspot butterfly habitat. Trail construction in this area, as described in Impact Biological Resources-1 could adversely affect this plant if undocumented populations of the plant are located in the trail alignment.

Project-Level Components

Under the Trails Plan in the proposed Master Plan, some segments of existing ranch roads would be abandoned and revegetated according to guidelines in the NRMP. One of these segments would be located near the documented occurrence of big-scale balsam root. Potential habitat for
big-scale balsam root extends beyond the documented location. However, because new single-track trail alignments would replace the ranch road segments, and the trails are narrower than the roads, a net gain in grassland habitat with potential to support big-scale balsam root would result.

Program Level Components

No Phase 2 trails would be located within big-scale balsam root habitat.

Mitigation Measure Biological Resources-3a: A qualified botanist should survey the proposed alignment of proposed trail segments 2 and 5, as identified in the trails Plan. The survey should occur during the same season that trail construction would occur, and during the flowering season for the species (March through June) to ensure recognition if big-scale balsam root plants are present. If plants are present within 25 feet of the proposed alignment centerline, then realignment is recommended.

Mitigation Measure Biological Resources-3b: Big-scale balsam root plants located near the trail should be protected during trail construction. Bright orange temporary fencing should be installed to create a buffer and isolate the plants from the work area. Workers should be educated about the presence of plants, and instructed to avoid disturbing it.

Impact Significance After Mitigation: Less Than Significant.

Impact Biological Resources-4: Construction of Park facilities could result in displacement of oak woodland and native grassland. Less Than Significant with Mitigation Measures.

This impact is conditional on trail route alignments in a native grassland or removal of an oak tree to facilitate proper grade control or sight lines. According to the proposed Master Plan, no impacts would occur to these sensitive plant communities. Every effort has been made to avoid these areas using resource sensitivity maps to guide the routing of trails and the siting of other Park improvements. However, implementation of the plan could result in identification of new field conditions or engineering constraints that necessitate exceptions in limited instances from this original intent. In particular, the issue of public safety in the vicinity of large oaks that may be in poor health could necessitate removal of limited numbers of trees.

Removal of oak trees also could result in impacts to nesting raptors, other birds, or bats. These are addressed in subsequent impacts and mitigation measures.

Project-Level Components

The construction of new trails could result in oak tree removal, although this impact would be avoided in foreseeable cases by minor re-routing of the trail. Depending on the final location, size, and need for grading, the campground amphitheatre could potentially necessitate removal of oak trees. Trails and hang-gliding launch and landing sites also could result in the loss of native grassland.
Program-Level Components

Development of facilities in the Western Flat Area, including the golf course, events pavilion, and equestrian center, could result in the need to remove limited numbers of oak trees. Phase 2 trails could result in the loss of native grasslands. Other program components would not likely affect oak trees or native grasslands.

Mitigation Measure Biological Resources-4a: The County would retain a certified arborist to assess the health and vigor of all trees in proximity to proposed facilities planned for intensive public use. The arborist would provide recommendations for the preservation or removal of trees that pose substantial risk of injury to life or property of Park visitors and staff.

Mitigation Measure Biological Resources-4b: In the event that tree removal is necessary, the impacts would be offset through planting of native oak trees elsewhere in the Park. In all cases, ample opportunities exist to plant trees close to the locations of those removed, with identical site conditions and microclimate. In the Western Flat Area, oak trees may be planted near the historic preservation area, events pavilion, equestrian center, picnic areas, along several small seasonal drainages, and elsewhere throughout the golf course. In the Lakeside Area, new trees could be planted in the campground and picnic areas. Trees should be cultivated by a qualified native plant nursery from acorns collected locally (i.e., from within the park, the watershed, or the County, depending on availability) and should be planted and maintained according to standard native plant establishment guidelines to protect them against damage from wildlife or park visitors.

Mitigation Measure Biological Resources-4c: Prior to establishing the final alignments of new trails, a qualified botanist should survey the alignments to determine whether native perennial grasslands would be traversed. Modest re-alignment of at trail should be considered if it would avoid native grasslands without compromising the purpose of the new trail, i.e., to improve connectivity and gradients. The area of displaced native grassland should be quantified to facilitate revegetation or enhancement efforts elsewhere in the Park (see Measure 4-d).

Mitigation Measure Biological Resources-4d: Revegetation of native perennial grassland would be implemented according to recommendations and guidelines in the NRMP in the areas abandoned by reduction of campground density, and in the golf course to establish roughs and buffers along the small seasonal drainages.

Impact Significance After Mitigation: Less Than Significant.

Impact Biological Resources-5: Construction of Park facilities could result in loss of raptor nests and other bird nesting habitat in oak woodland. Less than Significant with Mitigation Measures.

Construction of park facilities may involve the removal of nesting habitat for raptors and other birds protected by the Federal Migratory Bird Treaty Act (MBTA), Federal Bald Eagle Protection
Facility construction activities also could disturb nesting or roosting behavior of non-listed special status nesting raptors, other nesting birds (passerines) during the breeding season.

**Project-Level Components**

The construction of new trails could result in oak tree removal, although this impact would be avoided in foreseeable cases by minor re-routing of the trail. Trails and hang-gliding launch and landing sites also could result in the loss of native grassland.

**Program-Level Components**

Development of facilities in the Western Flat Area, including the golf course, events pavilion, and equestrian center, could result in the need to remove limited numbers of oak trees. Depending on the final location, size, and need for grading, the program-level campground amphitheatre could potentially necessitate removal of oak trees. Other program components would not likely affect oak trees or native grasslands.

**Mitigation Measure Biological Resources-5:** Construction that results in removal of nests during the non-breeding season (generally September 1 through January 31) does not require mitigation. To the extent feasible, construction of park facilities in proximity to areas identified during the breeding bird survey as active nesting areas will take place outside the period February 15 through August 31.

In the event that the breeding season cannot be avoided, pre-construction surveys for nesting activity would be conducted under the direction of a Certified Wildlife Biologist. If nesting activity of raptors or migratory songbirds protected under the MBTA and BEPA are identified, then construction should be suspended and consultation with the California Department of Fish and Game should be initiated. Subject to agreement with the CDFG, a breeding season monitoring protocol should be implemented during construction, or until the young have fledged.

**During construction activities, there is a possibility of impact to individual burrowing owls, a special-status species currently at very low population levels in the Santa Clara Valley. Therefore, in additional to the general measure described above, the following protection measures for the burrowing owl shall be implemented:**

- A pre-construction survey shall be conducted in all areas providing suitable habitat at least 30 days prior to construction according to the most recent CDFG Burrowing Owl Survey Protocol and Mitigation Guidelines (CDFG, 1995) or the approved methodology at the time surveys are conducted. Surveys shall include grassland areas within a 500-foot buffer around the project area, checking for burrowing owls and owl sign. If owls are found to be using the site and avoidance is not feasible, a passive relocation effort (displacing the owls from the site) may be conducted as described below, subject to the approval of CDFG.

- Establish areas around any occupied burrows where no disturbance may occur. The sensitive areas shall extend 160 feet around the occupied burrows during the non-breeding season of September 1 through January 31, and shall extend 250 feet around occupied burrows during the breeding season from February 1 through August 31.
• If the above avoidance requirements cannot be met, passive relocation of on-site owls may be implemented as an alternative, but only during the non-breeding season and with the approval of CDFG. Passive relocation shall be accomplished by installing one-way doors on the entrances of burrows located within 160 feet of the project area alignment. The one-way doors shall be left in place for 48 hours to ensure that the owls have left the burrow.

• For each burrow that will be excavated by project construction, one alternate unoccupied natural or artificial burrow shall be provided outside of the 160-foot buffer zone. The alternate burrows shall be monitored daily for one week to confirm that owls have moved and acclimated.

• Burrows within the construction area shall be excavated under the supervision of a biological monitor using hand tools and then refilled to prevent reoccupation. If any burrowing owls are discovered during excavation, the excavation shall cease and the owl will be allowed to escape. Excavation may be completed when the biological monitor confirms that the burrow is empty.

Impact Significance After Mitigation: Less Than Significant.

Impact Biological resources-6: Implementation of the proposed Master Plan could result in loss of up to 210 acres of raptor foraging habitat. Less Than Significant.

Project-Level Components

Approximately 10 acres of grassland habitat used for foraging by raptors would be displaced as a result of construction of re-routed trails, staging areas at the West Flat Area and Mendoza Areas, and construction of replacement campgrounds at the Lakeside Area. Foraging habitat quality at a hang gliding launch area in the northern part of the Park would be diminished by periodic use, but would not be displaced. The foraging habitat that would be displaced or reduced in value by these facilities represents a very small proportion of the total available foraging habitat in the vicinity of the Park, which will be preserved as open space in perpetuity. Therefore, this impact is not considered significant.

Program-Level Components

Raptor foraging habitat totaling approximately 200 acres would be displaced as a result of development of the park facilities in the Western Flat Area, including the golf course, events pavilion, picnic areas, and, to a lesser extent, the equestrian campground. The extensive savannah of the Western Flat, which is contiguous with grassland habitat of the western slope and with agricultural lands to the west, likely is well-used by foraging raptors. In the context of the anticipated development in this rural region of the Santa Clara Valley, the proposed park facilities would represent an incremental loss of raptor foraging habitat, but would not, in and of itself, result in a significant reduction in the availability of such habitat. Furthermore, the remaining 3,600 acres of the Park (excluding the lake) and adjoining public lands will be preserved as open space in perpetuity, ensuring a persistent prey base and providing high-quality raptor foraging habitat.
Mitigation: No mitigation required.

Impact Significance After Mitigation: Less Than Significant.

Impact Biological Resources-7: Construction within or adjacent to habitat that supports bat roosts may disrupt breeding behavior and cause roost abandonment and loss of young. Less than Significant with Mitigation Measures.

Construction of park facilities may involve the removal of large trees with cavities that harbor bat roosts. Pre-construction surveys conducted according to Mitigation Measure Biological Resources-5 will identify potential roosting habitat for special status bats in the project area prior to construction, and would inform construction plans about the potential for this impact to occur. If roosts are detected and roost removal occurs during the breeding season, direct mortality to these species and their young may occur. In addition, human disturbances from construction activities and noise could cause roost abandonment and death of young or loss of reproductive potential at active roosts located near the project construction areas.

Project-Level Components

The construction of new trails could result in oak tree removal, although this impact would be avoided in foreseeable cases by minor re-routing of the trail. Depending on the final location, size, and need for grading, the campground amphitheatre could potentially necessitate removal of oak trees. Trails and hang-gliding launch and landing sites also could result in the loss of native grassland.

Program-Level Components

Development of facilities in the Western Flat Area, including the golf course, events pavilion, picnic area and equestrian center, could result in the need to remove limited numbers of large trees that may have cavities that harbor bat roosts. Other program components would not likely affect trees.

Mitigation Measure Biological Resources-7: If construction activities are scheduled during the non-breeding season (generally September through January, but this is subject to case-by-case consideration of the breeding activity) within or adjacent to habitats that may support protected nesting bird or roosting bat species, mitigation is not required. Measures such as avoidance and passive relocation of species, which are included in these protocols, will be required for construction activities within or adjacent to suitable habitat.

Impact Significance After Mitigation: Less Than Significant.
Impact Biological Resources-8: Development of Park facilities could result in temporary and permanent impacts to jurisdictional wetlands and other waters of the U.S. under jurisdiction of the U.S. Army Corps of Engineers, and streams under regulatory authority of the California Department of Fish and Game and the Regional Water Quality Control Board and Santa Clara Valley Water District. Less than Significant with Mitigation Measures.

Jurisdictional wetlands and other waters of the U.S. (i.e., seasonal intermittent streams) are mapped and documented in the NRMP. Several low-order seasonal streams that drain the western slopes of the Park and flow across the West Flat Area eventually join Llagas Creek, which is a tributary to the Pajaro River. An estimated 11,000 total linear feet of streams are located in the West Flat Area, or approximately 1.5 acres assuming an average streambed width of 6 feet. The streams cross lands that have historically been used for agriculture and livestock grazing, and do not currently provide riparian habitat values in the portion of the Western Flat Area that is proposed for the most intensive development of new park facilities. However, it is unlikely that the proposed park facilities could be developed without varying levels of temporary fill or realignment of the streams.

In addition, park facilities proposed at Coyote Lake would result in small-scale impacts to jurisdictional areas, including the lake bed and shore. No vernal pools or freshwater seeps would be adversely impacted by implementation of Master Plan program elements.

Project-Level Components

No Phase 1 trails would be routed through jurisdictional wetlands. The trails plan within the Master Plan routes identifies new trails to be constructed during Phase 1 to replace segments of the existing ranch roads. The routes of these new trails have been specifically selected to avoid jurisdictional wetlands and other waters of the U.S. to avoid impacting these habitats. Staging areas in the Western Flat and Mendoza Areas also have been located outside of jurisdictional areas.

Launching areas for non-motorized watercraft would result in minimal impact to jurisdictional areas associated with Coyote Lake. The floating docks would cover approximately 100 square feet each, and would require several pilings to be driven into the shoreline.

Program Level Components

Although the proposed Master Plan depicts the course of several seasonal streams as unchanged, the proposed development of the Western Flat Area may result in the temporary disturbance or re-alignment of portions of the streams. In addition, bridge crossings for the golf course and for pedestrian circulation through the Western Flat Area may likely be necessary. The proposed Master Plan also depicts native vegetation (oak or riparian woodlands and native grasslands) bordering the streams to act as buffers between the natural stream and the manicured golf course. Enhancement and restoration of these riparian corridors also may require temporary impacts to the bed and bank of the streams to provide for adequate storm conveyance and channel and bank stability.
No Phase 2 or Phase 3 trails would be routed through jurisdictional wetlands. The trails plan within the Master Plan routes identifies new trails to be constructed during Phase 1 to replace segments of the existing ranch roads. The routes of these new trails have been specifically selected to avoid jurisdictional wetlands and other waters of the U.S. to avoid impacting these habitats.

Mitigation Measure Biological Resources-8a: Disturbance of the seasonal streams or the lake bed or shore will require a jurisdictional delineation of wetlands and other waters of the U.S. and of the State, and regulatory permits from the U.S. Army Corps of Engineers, the California Department of Fish and Game, and the Regional Water Quality Control Board and Santa Clara Valley Water District.

Each agency discharges its authority through permits it issues; the permits ensure compliance with the regulations concerning habitat, endangered species, conveyance and water quality. The eventual disposition of the streams in the Western Flat will need to comply with the standard conditions, as well as special conditions attached to each regulatory permit. Typical conditions include:

- No net loss of wetland or riparian area, or of its ecological functions and values;
- Replacement of area, functions and values of temporarily disturbed jurisdictional wetlands or streams at a minimum ratio of 1:1;
- Compensation of permanently disturbed wetlands or streams through creation or enhancement of additional area at ratios of up to 3:1;
- Preparation of detailed mitigation plans describing the habitat to be created or enhanced, the process by which it will be accomplished (see Measure 7b), and setting performance standards and schedules for attaining a certain level of habitat function and value;
- Long-term monitoring (i.e., 5 years) to ensure the successful implementation of the mitigation plan, with quantitative data collection and analysis and annual reports to the permitting agencies.
- Contingency plans to redress any portion of the mitigation effort that does not meet the performance standards.

Measure Biological Resources-8b: Depending on final layout and implementation plan for the golf course and other Park amenities in the West Flat Area, a plan may be required, as a condition of regulatory permits, for restoration of the riparian corridors associated with the seasonal streams in the West Flat Area.

Restoration and revegetation plans are routinely incorporated as conditions of approval in permits issued by the agencies that regulate wetlands and streams. The intent of these plans is to ensure no net loss of habitat functions and values, which is achieved through avoidance, minimization and compensation of impacts to jurisdictional areas, as well as the surrounding, non-jurisdiction upland habitat to the extent that it is essential to the integrity of the wetland or stream.
If required, the restoration and revegetation plan should be prepared as a component of the golf course (and other facilities) design process, and should specifically address impacts that would occur as a result of the construction of these facilities, including: temporary or permanent realignment of streams, bank stabilization, erosion control, bridge crossings (i.e. along golf course paths), and incorporation of any water features, such as the fishing pond, into natural drainages. The plan should conform to the County’s Design Guidelines for Golf Courses (County of Santa Clara, 1996), in particular the “Habitat - Streams” element, that recommends the following:

- The golf course design should attempt to minimize the number of stream crossings. Stream crossings should be designed in such a way as to minimize erosion and harmful effects to significant habitat and migration corridors.
- Bridges should minimize alteration of the stream environment.
- Design should create and restore riparian habitat, especially in previously degraded habitat areas, and should reduce the impact of alterations necessitated by design and construction of the course.
- The course design should employ vegetated buffer strips of sufficient width to mitigate impacts to riparian corridors and other significant habitat which may result from surface drainage of the golf course, cart paths, and other developed areas. In certain circumstances where riparian vegetation has been degraded or does not exist, turf grass and rough areas may be located in closer proximity to the stream bank.
- In areas proposed for structures, paved roadways, or parking lots, setbacks of less than the 75-150 feet recommended by the General Plan should be allowed only when mitigations are possible which adequately address habitat and stream quality impacts.
- Cart paths should be graded such that runoff from them generally does not flow directly into any stream.
- Construction fencing/siltation barriers should be utilized during the construction phase where needed to protect habitat and stream areas.

Restoration and monitoring plans prepared as a condition of a permit from the Corps typically include the following (Department of the Army, 1991):

- Schedule and timing of implementation of the mitigation plan, with important milestones identified;
- Responsibilities and authorities of parties involved in implementation of the plan;
- Location, type and quantity (area) of habitat to be created or enhanced, including maps and other detail drawings as necessary.
- Plant species to be used, including quantities, size, type and origin of genetically appropriate material;
- Methods of installation and cultivation after planting;
- Methods of protecting the habitat from future disturbance;
• Maintenance requirements and schedule, including how problems with habitat development will be corrected;

• Monitoring methods and frequency, including a description of analytical methods to be used and what the methods are intended to demonstrate;

• Reporting requirements and frequency.

**Impact Significance After Mitigation:** Less Than Significant.

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**Impact Biological Resources-9:** Implementation of the Master Plan would ensure preservation of regional wildlife corridors. Beneficial Impact.

The Park preserves a significant tract of undeveloped land between the valley and other protected open space to the north and east, and is used by wide-ranging mammals. Developments proposed in the Slopes and Ridge, Mendoza and Lakeside Areas would be low-density, and would have a positive effect on the long-term preservation of these migratory corridors for wildlife movement. The majority of the Western Flat Area would consist of a golf course. The introduction of a manicured open space between undeveloped parklands and rural/agricultural lands to the west would not substantially deter wildlife that are habituated to these environments, such as deer and raccoon, from continuing to move between them.

**Mitigation:** No mitigation required.

**Impact Significance After Mitigation:** Beneficial.

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**Impact Biological Resources-10:** Construction of Park facilities could contribute to erosion or result in discharge of sediment to surface waters, which would adversely affect aquatic habitat quality. Less Than Significant with Mitigation Measures.

This impact and measures to mitigate it is addressed in the Hydrology, Floodplains and Water Quality Section. No additional mitigation measures required.

**Impact Significance After Mitigation:** Less Than Significant.

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**REFERENCES – Biological Resources**


California, State of, Department of Fish & Game. 2003. California natural diversity database - RareFind, Gilroy and Gilroy Hot Springs USGS quadrangle.


CULTURAL RESOURCES

SETTING

METHODOLOGY

The inventory of cultural resources located within Coyote Lake-Harvey Bear Ranch County Park is largely incomplete. The 796 acres comprising the original configuration of the Park have been subjected to limited archaeological survey, resulting in a handful of recorded historic and prehistoric sites. The approximately 3,650 acres of land recently annexed to the Park, including the former Bear Ranch and Mendoza Ranch, have been held in private ownership providing little opportunity for cultural resource identification and management. While these lands have been operating as cattle ranches for well over 100 years and contain a number of potential historic buildings and possible archaeological deposits, only one building has been evaluated for historical significance. To date no effort has been made to identify, record, or evaluate the larger historical complex of these ranching operations.

A cultural resources assessment, including site reconnaissance, was conducted to determine the disposition of cultural resources, assess the quality and coverage of the existing record, and provide limited predictions as to the location and nature of unidentified resources. The assessment commenced with a search of records held by the Northwest Information Center at Sonoma State University. This search yielded a variety of materials including archaeological site records, maps of previous survey coverage, survey reports, historic maps, and a catalog of properties listed on the Historic Property Data File held by the State Office of Historic Preservation. Numerous survey and recording efforts for agencies including the U.S. Bureau of Reclamation (King and Hickman, 1973) and the California Department of Transportation (Hildebrandt and Mikkelsen, 1991) have significantly enhanced the inventory of known resources the region. The formal records search was supplemented by a limited search of materials and information provided by knowledgeable individuals, special interest groups and involved agencies. Information gathering concluded with consultation with interested Native American groups, an effort that entailed a search of the Sacred Lands Data Base managed by the Native American Heritage Commission, and letters of request for information to twelve representatives of the Native American community believed to have knowledge of cultural resources in the Park.

REGIONAL SETTING

Human Occupation of the Region

Prehistory

Archaeological studies indicate that southern Santa Clara Valley was occupied as early as 10,000 years ago. The earliest period of occupation is thought to be the result of overpopulation in the coastal areas of southern California (King and Hickman, 1973). Archaeological evidence for this period reveal low artifact counts, few radiocarbon dates, and poor depositional integrity (Hildebrandt and Mikkelsen, 1991:34). Tool assemblages from a cluster of sites located near
Coyote Creek just north of Morgan Hill (CA-SCL-178, 237, and 167) reveal a preponderance of small, informal flake tools, handstones and milling slabs, and an absence of beads and ornaments (Hildebrandt, 1983). Radiocarbon assays from one site (CA-SCL-178) range from 10,000 – 8,500 Before Present (B.P).

The next period identified may have been more permanent in nature. Population densities may have increased during this time, stimulating dependence on a stored food economy with an emphasis on acorn processing. Archaeological evidence from the Coyote Creek sites indicates that acorn processing did indeed grow in importance sometime between 4000 and 2750 B.P. This is evidenced in an increase in the number of mortars and pestles recovered from sites dating to this time (Hildebrandt and Mikkelsen, 1991: 34). Settlements between 4000 and 1500 B.P. may have been more permanent in nature than during the previous period (King and Hickman, 1973); however, artifact collections from the Coyote Creek area dating to this time are very similar to the previous interval. Flake tools continue to dominate assemblages, and there is continued absence of bone tools, beads and ornaments. Investigations of components dating between 1450 and 2700 B.P. indicate a decline in artifact density and assemblage diversity at a time when some research predicts a peak in large, permanent settlements.

**Ethnographic Period**

Native inhabitants of the region were first encountered by Spanish explorers in 1770 when Pedro Fage’s expedition from Monterey to San Francisco crossed the San Felipe plain just south of the Park. Additional exploration groups may have included Anza and Font (1776) and Dante and Sal (1795). Aboriginal groups of the San Francisco and Monterey Bay area came to be known collectively as Costanoan, a word derived from the Spanish word Costaños meaning ‘coast people’ (Levy, 1978:485). During the mission period, A.D. 1770-1835, the Costanoan people were recruited into nearby missions and their traditional subsistence economy was replaced by an agricultural economy. Analyses of mission baptismal records demonstrate that the last Costanoan tribelets living a traditional existence had disappeared by 1810 (Levy, 1978). The population experienced dramatic decline due to the introduction of European diseases, which consequently caused lower birth rates. The secularization or abandonment of the missions by the Mexican government in 1832 caused people to relocate to different areas and establish small settlements, thus, separating them farther away from their cultural heritage. It is believed that the Costanoan languages were probably not spoken after the year 1935 (Levy, 1978).

Most of what is know about native inhabitants of the region is based on information from the Spanish exploring expeditions, ethnographic accounts in the 1920s and 1930s (Krober, 1925), and archaeological research. The Costanoan territory was occupied by approximately 50 separate tribelets, each one occupying one or more permanent village sites. The Coyote Lake-Harvey Bear Ranch County Park property is located within the boundaries of the area inhabited by the Uñîjaimas tribe, which occupied the Gilroy Valley (Milliken et al, 1993).

Contact period Costanoans were hunter-gatherers who managed their resources to insure a sustained livelihood. They lived in sedentary communities in domed structures covered with thatched roofs, and relied on nuts and seeds from various trees and plants, local fauna, and fish,
particularly salmon, from the rivers and Pacific Ocean for subsistence. Materials crafted by the Costanoan used in subsistence activities included baskets, manos, metates, mortars, nets, net sinkers, anchors, and a variety of chipped stone tools. Trade with the surrounding Plains Miwok, Sierra Miwok, and Yokuts allowed nonindigenous materials and food (i.e. Piñon nuts) to be brought into the area as well. In exchange, the Costanoan are thought to have exported bows, salt, and salmon to neighboring groups (Levy, 1979:488). Economic reciprocity, in addition to intermarriage, is thought to have linked villages together and provide a forum for conflict dispute. Overall population density along this part of the coast is though to be very sparse, probably no more than 2-people/square mile; however, Spanish accounts indicate some villages contained as many as 200 people (Milliken, 1995).

**Early Mission Period and Spanish-Mexican Period**

Early Spanish explorers came to Santa Clara Valley in search of a location for a new mission to be built between Mission San Carlos Borromeo de Carmel and Mission Santa Clara. While large-scale colonization never took place, the area did experience an influx of people from what is now Mexico. During this time large tracts of land held by the Spanish crown were granted to a number of individuals in the area, creating a class system that included a powerful landed aristocracy and support laborers. Rancho owners relied on Spanish-Mexican vaqueros and the Christianized Indian population to manage and work the lands. Most of the ranchos in the Santa Clara Valley operated as open cattle range. This pattern of land distribution and use prevailed throughout the remainder of the Mission Period and into the Spanish-Mexican Period.

**American Control**

By the beginning of the Early American Period (1846-1870) Mexican landholders began to lose their holdings to American settlers. Land ownership became very concentrated during this time. It is estimated that by 1871 three land holding organizations controlled more than 800,000 acres of the Santa Clara Valley. With this consolidation, land use patterns changed from open cattle ranging to more intensive controlled pasturing. Support facilities such as barns and feed sheds were also constructed. One of the large landholders was Martin Murphy who arrived in California 1845 as part of the Townsend-Stevens-Murphy party, the first successful pioneering group to cross over the Sierra Nevada Mountains. The Martin Family is considered one of the most influential pioneering families and played a key role in the history of the southern Santa Clara Valley. The Murphy Family homestead is believed to be located on present day Bear Ranch at the end of San Martin Road in San Martin.

The extension of the Southern Pacific Railroad to the area in the late 1860's was a catalyst for a local population boom, resulting in the founding of local communities including Gilroy and San Martin. With the growing population, significant changes in land use took place. By the turn of the century, much of the original rancho holdings were subdivided into orchards, wheat fields, and row crops.
ARCHAEOLOGICAL RESEARCH

Relatively little is known about the archaeological resources contained within the Coyote Lake Harvey Bear Ranch property. Archaeological inquiry within the Park has been limited to a handful of reconnaissance projects conducted for Park expansion (Cartier, 1991), proposed development of privately held lots (Breschini and Haversat, 1981; Cartier, 1984), or linear utility construction (King and Hickman, 1973; Breschini and Haversat, 1978; and Van Horn, 1980).

A study by Cartier (1991) included survey of approximately 1,000 acres along the western banks of Coyote Lake conducted to identify resources that could potentially be impacted during Park improvements proposed at that time. The survey identified three prehistoric sites, a number of isolated prehistoric artifacts, and four historical resources adjacent to the lake. Additional resources are likely located below the current water level. Based on examination of surface materials, the three prehistoric sites were found to be significant and therefore subject to mitigation prior to construction activity associated with the Park improvements project. None of the historic resources were found to be significant. To date, none of these sites have received further archaeological evaluation.

Given the lack of survey coverage within the Park, large-scale investigations conducted in adjacent regions provide invaluable data, and facilitate integration and interpretation of archaeological data amassed from various parts of Santa Clara Valley. Settlement and chronology models developed in these studies provide a useful framework for interpreting the potential for archaeological data to exist within unexplored portions of the Park. For instance, the Bureau of Reclamation’s San Felipe Division Central Valley Project has amassed an extensive dataset that has been extremely useful in understanding prehistoric occupation the Southern Santa Clara Valley (King and Hickman, 1973; Van Horn, 1980). Only a small fraction of the survey corridors for the San Felipe project passed through what is now Coyote Lake-Harvey Bear Ranch County Park, resulting in the recording of one prehistoric site within the Park, and three immediately outside the Park.

Other data accumulated from areas north, east, and south of the Park provides an important basis for assessing the potential for archaeological deposits within the Park. For instance, a 12,000-acre survey of southern Santa Clara Valley resulted in the recording of fifty prehistoric sites (King and Hickman, 1973). A number of the sites, including one adjacent to the Park, were subjected to limited testing to discover information on site function and chronology. In addition, Bergthold conducted a study that incorporated an additional 179 sites throughout the Santa Clara Valley. Both studies included predictive distribution modeling, with differing results regarding potential site types and context.

Although often fraught with theoretical issues, cross-tabulation of site type by environmental context provided the basis for King and Hickman’s predictive resources distribution model. They proposed that large occupation sites were permanent, or near permanent settlements situated close to a variety of resources, and are most likely to be found near canyon mouths and to a lesser extent adjacent to marsh and upper canyon contexts. Small occupation sites, viewed as relatively temporary camps, are predicted to be located near specific resources (i.e. acorns and water fowl)
in a variety of environments, but are most likely to be found in upper canyon and marsh environments. Special use sites (i.e. milling stations and debitage scatters) are expected to be found near large occupation sites in upper canyon contexts (Please see King and Hickman (1973) for more detail regarding the predictive model they proposed).

In addition to the above study, Hildebrandt and Mikkelsen conducted an investigation 1991 that comprised of test excavations at fourteen sites along Highways 101 and 152 in Santa Clara and San Benito Counties. The excavations produced an array of materials resulting in a sizable database for interpreting broad patterns of prehistoric settlement and subsistence, sociopolitical organization, ethnicity and exchange. The study identified numerous occupation sites in canyon mouth contexts (Hildebrandt and Mikkelsen, 1991:191-196).

**HISTORICAL RESEARCH**

The area contained within the Coyote Lake-Harvey Bear Ranch County Park has a rich history dating back to prehistoric times and continuing through the Early Mission Period (1797-1822), Spanish-Mexican Period (1822-1845), Early American Period (1846-1870), and Later American Period (1870-1940). Because few studies focusing on these eras have been conducted in the Park vicinity, much of what is known about the history of the project area can be garnered from investigations conducted in surrounding areas (King and Hickman, 1973; Milliken et al., 1993). To date most of what is known about the Park holdings relates to the Early American and Late American Periods, with an emphasis on documentation of land acquisition and histories of founding members of local communities such as Gilroy, San Martin, and Morgan Hill (Hunter, 1978; Wyman 1982; Mason, 1999).

A number of land grant and real estate maps have been published, providing information on specific land holdings and locations of structures. These resources are extremely useful in illustrating broad trends in historic settlement distribution. A number of maps containing information on the Park exist, including Rancho Plats for San Francisco de la Llagas (1863), General Land Office Plat Maps (1869), Bailey and Phillips Real Estate Maps (1887), and Santa Clara County Records Maps (1876 and 1989).

Two historic resources inventories (both structures and historic archaeological deposits) have been conducted in the Park, including Cartier’s 1991 study along the western shore of Coyote Lake and a significance evaluation of the Foreman’s House at Bear Ranch (Mineweaser and Associates, 1999).

**SITE SETTING**

The following provides a summary of known prehistoric and historic resources within the Park, as well as an assessment of the possibility for anticipated (e.g. predicted) resources.
Prehistoric Resources

Inventory

The few archaeological surveys conducted with the Park boundaries have resulted in five recorded prehistoric sites, only one of which has been subjected to further subsurface testing.

CA-SCL-711 was recorded during an archaeological reconnaissance for proposed expansion and development of recreation facilities along Coyote Lake (Cartier, 1991). The site is located on the western shore of Coyote Lake, approximately 3.75 miles north of Roop Road and consists of a dense concentration of fire cracked rock, chert debitage and groundstone tools. The purported habitation site has likely been impacted by fluctuating lake water levels over the years. An isolated scatter of prehistoric lithic material was noted approximately northwest along Coyote Lake Road. These materials were not formally recorded but their location was mapped in Cartier’s report. Cartier interpreted these remains as a remnant prehistoric village containing tools associated with food preparation, tool manufacture, and likely inhumations (Cartier, 1991:4). The deposit was deemed significant based solely on examination of surface materials.

CA-SCL-713 is located just south of CA-SCL-711, approximately 3.5 miles north of Roop Road on the west side of Coyote Lake. The site is situated approximately 6 meters below the high water line on a small knoll 30 meters from the lake’s edge. A dense scatter of fire-cracked rock, ground stone artifacts, and chert debitage comprises the site. This site was interpreted as a small prehistoric village with lithic tools representing tool manufacture and food processing activities. Like CA-SCL-711, it was deemed significant.

CA-SCL-712 is located at the south end of Coyote Lake, approximately 1.5 miles off of Roop Road, within the Lakeview Campground and comprised of a scatter of fire-cracked rock, chert debitage, and a single piece of groundstone. In addition, three isolated artifacts (a metate, one complete and one fragmented mortar, and an unidentified groundstone artifact) were noted southeast of the site (Cartier, 1991:7). The site was interpreted as a significant prehistoric village.

CA-SCL-102 is located approximately 600 meters southeast from the east end of Church Avenue in San Martin and was recorded during archaeological survey for the San Felipe Division, Central Valley Project (King and Hickman, 1973). The site consists of a surface scatter of groundstone materials, chert debitage, and a flaked stone tool. Groundstone materials include five manos, a double-sided basin metate, and a single pestle. The site is located in an upper canyon environment, adjacent to a steep, oak-lined drainage and spring. Additional lithic materials were noted on nearby by knolls, but were not mapped. As feed bins are located in the immediate vicinity, cattle ranging activities have significantly disturbed the site. While the site was found to be outside the area of potential affect for the San Felipe Project, investigators did recognize the resource as potentially significant and recommended additional subsurface testing at a future date.

CA-SCL-320 is located east of Foothill Avenue, approximately 0.5 miles north of its intersection with San Martin Avenue. The site was first recorded during a reconnaissance for the San Felipe Division Central Valley Project (Breschini and Haversat, 1978), and was later the focus of test excavations for the same project (Van Horn, 1980). Initially, the resource was described as a
small occupation site characterized by dark midden soils, several pieces of groundstone and a single retouched chert flake tool. Additional groundstone materials are reported to have been collected from an adjacent property, and may have once been associated with this site. Subsequent test excavations focused on areas within the project’s area of potential effect, but did not include the sites central midden. Four units yielded a very sparse and mixed accumulation of chert debitage, a Franciscan chert projectile point fragment, and a sandstone pestle. Cultural materials were found to a depth of 110 cm, with the first 40 cm highly disturbed by agricultural activities. Based on materials recovered, the site was interpreted as a seasonal short-term occupation site.

**Known Sites in Immediate Park Vicinity**

Three additional sites are located immediately adjacent to the Coyote Lake-Harvey Bear Ranch Park property and provide information for predicting the location and kinds of resources that may be located within the Park.

**CA-SCL-99** is located on the northwest side of the east end of Howell Lane. The resource is located in an upper canyon environment, situated an open grassy area just west of Skillet Creek, less than 400 meters from the Park property boundary. Surface materials were interpreted as a special use site relating to tool manufacture.

**CA-SCL-101** is located north east of CA-SCL-320 approximately 50 meters southeast of Robin Lane off of Foothill Ave. The site is an extensive scatter of flaked and groundstone materials situated on a southeast-facing slope adjacent to a spring fed, oak and willow lined gully (King and Hickman, 1973). No midden soils were reported. A number of disturbances were noted including evidence of periodic flooding, agricultural use, and cattle ranging. In addition, several groundstone artifacts are reported to have been collected from the site area by the landowner. Recovered materials include eight chert flakes, three flake tools, two cores, and a single mammal bone fragment. From this limited test, it was concluded that the site made up of largely flaked stone materials represented an early local economic adaptation prior to the intensive use of acorns. For this reason the site was found significant.

**CA-SCL-103/H** is located just east of the intersection of Jeanie Lane and New Avenue and comprises a large old Live Oak tree with a cross carved on its trunk. Locally, it is known as the “Mission Tree” or “Witness Tree.” It is reported to be associated with either a Mission outlier building or possibly a witness point used by earlier surveyors (Basin Research and Associates, 1984). The tree may mark an Indian cemetery associated with the old St. Martin’s Church. Reports describe “headboards” from the cemetery were collected by a farmer prior to planting the area. No additional evidence for this scenario was noted when the site was recorded in 1984, and its significance remains speculative.

**Predicted Resources**

The current archaeological record of the Park and its immediate surroundings provide a preliminary framework from which to assess the potential for archaeological resources. The Park contains most of the environmental zones outlined in the King-Hickman model including upper
canyon, canyon mouth, alluvial plain, and marsh areas. Recorded sites within the Park are located primarily in upper canyon environments (CA-SCL-102, 711, 712, and 713) and alluvial plain (CA-SCL-320). Sites immediately adjacent to the Park are also found in upper canyon (CA-SCL-99 and 101) and alluvial contexts (CA-SCL-103/H). All of the prehistoric sites recorded in the Park have been interpreted as either extensive or short-term occupation sites. Given these data, it can be assumed that most of the areas contained within the Park have some potential for archaeological resources. Based on known distribution of sites in the area, the property can be divided up into four general sensitivity zones, as discussed below (Figure 3-2).

**High Sensitivity.** These areas are considered highly sensitive for prehistoric cultural resources and include areas where most known sites in the Park may be located. Areas of high sensitivity include: (1) all areas around springs and natural watercourses west of the ridge paralleling Coyote Lake; (2) the current shore line of Coyote Lake, and areas currently under water; (3) upper canyon environments on east and west side of the ridge; and (4) areas around all recorded prehistoric sites.

**Moderate Sensitivity.** Based on the current archaeological record, areas designated as moderate sensitivity are likely to contain sites; however, few of these areas are known to contain sites. Areas of moderate sensitivity include: (1) flat open areas at the interface between canyon mouths and the valley floor on the western portion of the Park; (2) the alluvial plain between the valley floor and the base of the hills on the western portion the Park property; and (3) low areas at the south end of Coyote Lake, including marsh areas above the lake.

**Low Sensitivity.** While no area can be completely ruled out, areas of highest elevation (i.e. ridge tops) have the lowest potential for archaeological deposits. These areas generally lack natural water sources and occupation sites are not likely. However, special use sites centered on resources such as acorns and raw lithic material may be found here.

**Unknown Sensitivity.** The area designated as unknown sensitivity has not been classified under the preceding categories. This area, confined to the northern part of the Park, is relatively unknown and encompasses numerous drainages leading into Coyote Creek, below the dam at the north end of the lake. Given that the area encompasses upper canyon environments, the likelihood for sites is potentially high. A large survey was conducted adjacent to this portion of the Park and revealed no resources (Cartier, 1988). However, this does not preclude the presence of sites with the Park boundary.

**Historic Resources**

**Inventory**

To date, two historical resource studies have been conducted within the Park including Cartier’s 1991 survey along the western banks of Coyote Lake, and an evaluation of the Foreman’s House at Bear Ranch (Mineweaser and Associates, 1999). In addition to the three prehistoric resources previously described, Cartier’s (1991) reconnaissance revealed four potential historic resources situated adjacent to Coyote Lake. The resources included two residential structures, a stone house foundation or retaining wall, and a trash dump. The features were described as follows:
Figure 3-2
Prehistoric Archaeological Sensitivity Map
3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

**Historic Resource 1** is a residential structure in the Minimal Traditional architectural style popular from 1935-1950. The structure features a cross-gabled roof with close rake and open eaves. The house is clad with both vertical and channelled siding, and has a concrete foundation. A detached two-car garage of compatible design is located near by.

**Historic Resource 2** is a stone house foundation or retaining wall possibly associated with Historic Resource 1.

**Historic Resource 3** is a side gabled vernacular cottage that may have served as a summer residence. The structure date to the 1920s or 30s, and has a low-pitched roof with open eaves and rake. The house is situated on concrete piers. Also noted were two associated brick buildings and a mortared stone retaining wall.

**Historic Resource 4** is a trash dump with refuse dating from 1930-1990.

Cartier estimated that all of the features dated between 1920 and 1940, and did not appear to have outstanding or unique architectural value. He further concluded that the resources were not associated with an early or significant period of historical development, and therefore did not require further treatment.

Upon acquisition of the Bear Ranch property, Santa Clara County Department of Parks and Recreation requested a historical assessment of the Foreman’s House located on the Bear Ranch property at the end of San Martin Avenue. It is commonly believed that the Bear Ranch was once part of the Martin Murphy holdings acquired around 1845. However, no documentation exists indicating which buildings, if any, on the ranch were associated with Murphy. The purpose of the study was to determine the age of the building and assess its historical significance (Mineweaser 1999). Other structures located on the ranch were not evaluated.

Due to the lack of specific historical records of the building, the 1999 assessment was based solely on examination of the features and construction of the actual building. From these observations, it was determined that the structure was constructed sometime in the 1940s. Its current configuration appears to have been the result of combining two older structures and finishing the interior. The report indicated that the two original structures were built between 1850 and 1920 (Mineweaser and Associates Addendum, 2000:3). The building lacks a stud wall in the building frame; rather the exterior walls were constructed by placing 1x12 boards vertically on a post-and-beam frame. This is considered a typical construction technique for the period. The evaluation concluded that given the construction technique employed, the Foreman’s house constituted a significant resource on the state and local level (Criteria C). The structure was not considered significant enough for listing on the National Register of Historic Places; however, the report did indicate that further research of the larger ranch complex as well as possible archaeological deposits could indeed alter the finding and elevate the property to national significance.

**Predicted Historic Resources**

While much has been written on broad regional historic themes and important individuals of Santa Clara County, almost nothing is known about the material record of those histories. For
most areas of the Park (other than Bear Ranch), historic maps provide some of the most reliable understanding of changes in settlement configurations and possibly identify historic resources. Broad patterns expressed in these maps are useful in developing predicative statements about where historic resources may be located over the Park. From limited investigation, it appears that the location of Bear Ranch contains the most visible concentration of potential historic resources, as well a high potential for historic archaeological deposits. In addition to the recently evaluated Foreman House, the property contains a number of structures of unknown age including a shed, a chicken coop, two additional houses, and a barn. Most of these structures were probably built post-1950; however the barn is reported to have been built sometime in the 1890s. In addition to the standing structures, the property is also reported to have contained a house built by Martin Murphy soon after he purchased the property (circa 1850). Bear family members remember that the old house was still standing near the Foreman’s House and a cluster of oaks when the family moved to the ranch in the early 1960s. A 1955 photo of the home has been published (Hunter 1978:36). As the house stood vacant for a number of years and was routinely vandalized, it was dismantled in the late 1960s. Parts of the house are reported to have been recycled in the construction of additional houses and a chicken coop. The second story wooden railings in the 1955 photo are still stored on the property. While it is widely believed that this structure was the home of Martin Murphy, there is no evidence that confirms this belief and historic maps provide only vague indications as to the location of Murphy’s houses.

Activities associated with each of the historic occupation periods have made their mark on the local landscape. These include tangible remains such as standing and collapsed buildings, vestiges of irrigation systems, and old road cuts. Historical archaeological deposits may also constitute an important resource for the project vicinity. These resources are generally subsurface deposits that develop over the course of time (i.e. privies or trash dumps), or the buried remains of structural features such as foundations, footings and cellars. Based on the existing record and on information on changing settlement distribution contained in various related maps, it can be assumed that most of the areas contained within the Park have some potential for historic resources, as discussed below (Figure 3-3).

**High Sensitivity.** These areas are at present considered highly sensitive for historic resources, including archaeological deposits. It includes areas where known and potential historic structures are located, and areas likely to support activities carried out on the property through history, including: (1) all flat open areas below the hills west of the ridge; (2) the current shore line of Coyote Lake, and areas currently under water; (3) flat open areas along the south end of Coyote lake; (4) the Bear Ranch complex of buildings at the end of San Martin Ave; and (5) Mendoza ranch complex off Roop Road.

**Moderate-Low Sensitivity.** These areas comprise the more rugged parts of the Park, including the ridge top and adjacent slope to the east and west, or any area contain steep slopes and ravines. While these areas are not likely to contain large ranch complexes or homesteads, they may contain resources related to ranch support activities including irrigation systems, cattle troughs, branding stations, and trash dumps.
Paleontological Resources

The project region is generally composed of Great Valley Sequence (ancient sea floor sediments) and Franciscan Assemblage bedrock (flooded and faulted sea floor sediments) (see Geology, Geohazards, and Soils). Marine sediments deposited on the ocean floor eventually hardened into rock and were uplifted to form the region. This sand, gravel, and mud includes animal remains such as shells, teeth, and bones, and plant remains such as leaves and wood. Over time, ancient plant and animal remains became fossils (molds, impressions, and other traces of past life). While evaluation of fossiliferous deposits within the Park has not been conducted, the geology of the area indicates that there is potential for fossiliferous deposits to occur within the Park.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

The project may result in a significant impact, if it would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Section 15064.5.

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5.

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

- Disturb human remains, including those interred outside of formal cemeteries.

IMPACTS AND MITIGATION MEASURES

Impact Cultural Resources-1: Implementation of the Master Plan has Potential to Adversely Affect Archaeological and Historical Resources. Less Than Significant with Mitigation Measures.

Project-Level Components

In order to determine the potential for cultural resources that may exist in the boundaries of the Park, the cultural resources setting for the Park was evaluated, including the identification of cultural resource sensitivity areas. Improvements and facilities planned in the West Flat and Lakeside areas are located in the vicinity of known archaeological and historical resources. In addition, project-level components are located in zones of high and moderate sensitivity for cultural resources that could be present, but may not have been identified at this time. Given the presence of these resources within the vicinity of project sites, proposed ground disturbance activities could unearth known and as-yet unknown sensitive archaeological resources, resulting in a potentially significant archaeological resources impact. While significant historic resources have not been identified within the Park, based on existing information regarding use of the property and on structures contained within (see Historic Resources, above), it can be assumed
that the Park contains significant historic resources. Proposed park improvements and new facilities could alter or damage potential historic resources, resulting in a potentially significant impact. While a comprehensive survey and evaluation of all the properties within the area of potential effects for National Register of Historic Properties eligible properties has not been conducted, a standard treatment approach to all properties, features, or structures that might be eligible would be applied throughout the construction process. That is, the predictive value of the preliminary research would be used to provide mitigations that allow for the avoidance of adverse effects as the project proceeds. Implementation of Mitigation Measures Cultural Resources 1a and 1b would reduce potential impacts to a less than significant level.

Program-Level Components

There are several known archaeological and historic sites within and near the Park. Implementation of the proposed Master Plan could result in the addition of new facilities or improvement of existing facilities. Excavation and improvements related to the park development (new trails, events center, parks, environmental education center, etc.) may yield archaeological resources, not previously discovered. Implementation of Mitigation Measure Cul-1 would reduce the potential impact to less than significant at the program level. Because implementation information, such as locations of specific facilities and development of project-specific development plans, is not yet known, specific facilities and plans would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures.

Mitigation Measure Cultural Resources-1a: The County shall implement a Cultural Resource Protection Program.

Where work will take place in locations where prehistoric or historic sites have been previously documented, or has been determined to have a high probability for archaeological resources, pedestrian surveys shall be conducted within an area of potential effect. If deemed necessary and feasible, archaeological subsurface testing (such as shovel test pits) will be implemented to determine the presence and significance of archaeological materials in these locations, prior to the start of construction. If significant resources are identified, specialized studies would be performed, consistent with professional archaeological standards and State and County requirements. If it is determined that materials are of a prehistoric nature, procedures outlined in the State Resources Code pertaining to the protection of Native American remains and associated goods shall be implemented and a most-likely descendant shall be contacted.

If archaeological data recovery is insufficient to adequately protect the cultural significance of any find, the qualified archaeologists or most-likely descendants assigned to the project will consult with the Project Manager(s) to determine alternative project design, construction, or operation necessary to avoid significant adverse impacts to the resource. The site of the find, including an adequate buffer zone, will be secured (fenced or flagged) and no work will occur within that area without the approval of the lead project archaeologist.
A report of the findings from the excavations would be completed and copies distributed to the Santa Clara Parks & Recreation Department.

Project construction sites will be photo-documented before, during, and after construction and photos added to historical records (archives) for the Park.

All ground-disturbing work will be monitored by a qualified cultural resource specialist or construction monitor assigned by the County. In the event previously undocumented cultural resources are encountered during project construction (including but not limited to dark soil containing shellfish, bone, flaked stone, groundstone, or deposits of historic trash), work within the immediate vicinity of the find will stop until procedures outlined in the County Ordinance Relating to Indian Burial Grounds (County of Santa Clara, 1987) and State Public Resources Code can be implemented and most likely descendants notified for site investigation.

The appropriate tribal representative will be contacted prior to ground disturbance to occur in areas within the ancestral territory that are sensitive for prehistoric resources.

**Mitigation Measure Cultural Resources-1b. The County shall implement a Historic Cultural Resource Protection Program.**

Historic significance evaluations shall be performed on historic resources in the park prior to design development. All work on identified or potential historic resources will be conducted in a manner consistent with the Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), Weeks and Grimmer (36 CFR 67) and the California Historical Building Code.

Any rehabilitation work on historic resources will be monitored by a qualified cultural resource specialist.

**Mitigation Measure Cultural Resources-1c: The County shall conduct site-specific review of program-level Master Plan components.**

Potential archaeological and historic resources impacts should be reviewed at the project-level for specific facilities or development plans proposed under the Coyote Lake-Harvey Bear Ranch County Park Master Plan and mitigation measures shall be considered, including but not limited to:

- Subject projects to site-specific planning and compliance in accordance with cultural resource protection laws.
- Site and design facilities/actions to avoid adverse effects to sensitive cultural resources. Subject projects to site-specific planning and compliance in accordance with cultural resource regulations. Conduct archeological site monitoring and routine protection. Conduct data recovery excavations at archeological sites threatened with destruction, where protection or site avoidance during design and construction is infeasible.
3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

- Avoid or mitigate impacts to ethnographic resources. Mitigation could include identification of and assistance in accessing alternative resource gathering areas, continuing to provide access to traditional use and spiritual areas, and screening new development from traditional use areas.

- Continue and formalize ongoing consultations with culturally associated Native American descendants. Formalize a parkwide gathering plan and discovery plan for Native American human remains. Protect known burial sites, and protect sensitive traditional use areas to the extent feasible.

- Conduct surveys for archeological sites, traditional resources, historic sites, structures, and cultural landscape resources as warranted. Surveys and reports shall be prepared in compliance with the recommendations of the Native American Heritage Commission.

- Where significant sites have been identified, the County shall provide a qualified archaeologist, Native American monitor, or most-likely descendant to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property. The archaeologist shall be on site during any activity when new soils are to be moved or exported. The archaeologist shall be authorized to halt the project in the area of the finding and mark, collect, and evaluate any archaeological materials discovered during construction. Copies of any archeological surveys, studies, or reports of field observation during grading and land modification shall be prepared and certified by the attendant archaeologist and submitted to the California State University Archaeological Information Center. Any artifacts recovered during mitigation shall be deposited in an accredited and permanent scientific or educational institution for the benefit of current and future generations.

- In the event cultural resources are encountered on the park during the course of construction; the findings shall be examined by a qualified archaeologist. If the finding is determined to be an historical or unique archeological resource, avoidance measures or appropriate mitigation shall be implemented. Recommendations can then be made for any appropriate procedures to either further investigate or mitigate impacts to those cultural resources that have been encountered. As provided in the CEQA Guidelines, Section 15064.5(f), work could continue on other parts of the park while historical or unique archeological resource mitigation (if necessary) takes place.

Implementation of the requirements described above would reduce the potential program-level archaeological and historic resources impacts associated with the implementation of the Coyote Lake-Harvey Bear Ranch County Park Master Plan. However, the County would require examination of many specific facilities and development plans included in the Master Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary.

Impact Significance After Mitigation: Less Than Significant.
Impact Cultural Resources-2: Implementation of the Master Plan has Potential to Adversely Affect Paleontological Resources. Less Than Significant with Mitigation Measures.

Project-Level Components

The geology of the area indicates that there is potential for fossiliferous deposits within the project area. Given the relatively shallow depths of construction proposed for the project the probability of encountering paleontological resources is reduced. However, significant fossil discoveries could be made even in areas designated as having low potential, and could result from the excavation activities related to the proposed project. This potential impact would be reduced to a less than significant level with the implementation of Mitigation Measures included herein.

Program-Level Components

Geologic formations underlying the project area could contain fossils. Implementation of the proposed Management Plan could result in the construction of additional public use and support facilities. Excavation in the project area could unearth significant fossil remains. Implementation of Mitigation Measure Cultural Resources-2b would reduce the potential impact to less than significant at the program level. Because implementation information, such as locations of specific facilities and development of project-specific development plans, is not yet known, specific facilities and Plans would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures.

Mitigation Measure Cultural Resources-2a: The County shall implement a paleontological resource protection program.

In the event of an unanticipated discovery of a breas, true, and/or trace fossil during construction, excavations in the immediate area of the find will be temporarily halted or diverted until identification and proper treatment are determined and implemented by a qualified cultural resource specialist.

Impact Significance After Mitigation: Less Than Significant.

Impact Cultural Resources-3: Implementation of the Master Plan has Potential to Adversely Affect Human Remains. Less Than Significant with Mitigation Measures.

Project-Level Components

No human remains or burial sites have been documented or are known to exist on or near the project site. However, as noted in Impact Cultural Resources-1 above, there are indications of several historic and prehistoric archaeological sites with the project vicinity and therefore, human remains or burial artifacts could be present within the project area. Subsurface excavation
required for construction of the proposed project could potentially disturb or destroy human remains from both prehistoric and historic time periods, including those interred outside of formal cemeteries. This is considered a potentially significant impact that would be reduced to a less than significant level by implementation of Mitigation Measures.

Program-Level Components

No historic cemeteries are known to have existed from Coyote Lake-Harvey Bear Ranch County Park. However, there is a potential Indian cemetery associated with the “Mission Tree” or “Witness Tree” (CA-SCL-103/II) located near the Park. The existence of burials of any kind could be identified on the park during construction or maintenance, should development occur as a result of General Plan implementation. Implementation of Mitigation Measure Cul-3 would reduce the potential impact to less than significant at the program level. Because implementation information, such as locations of specific facilities and development of project-specific development plans, is not yet known, specific facilities and Plans would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures.

Mitigation Measure Cultural Resources-3a: The County shall implement a human remains protection program.

In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate County personnel. The authorized representative will notify the County Coroner, in accordance with §7050.5 of the California Health and Safety Code. If the coroner determines the remains represent Native American interment, the Native American Heritage Commission will be consulted to identify the most likely descendants and appropriate disposition of the remains. Work will not resume in the immediate area of the find until proper disposition is complete (PRC §5097.98).

Mitigation Measure Cultural Resources-3b: The County shall implement a human remains protection program.

Potential human remains disturbance impacts should be reviewed at the project-level for specific facilities or development plans proposed under the Coyote Lake-Harvey Bear Ranch County Park Master Plan and mitigation measures shall be considered, including but not limited to:

- In the event human remains are encountered; the Santa Clara County Coroner shall be contacted to determine whether or not investigation of the cause of death is required. In the event the remains are of Native American origin, the Native American Heritage Commission shall be contacted to determine necessary procedures for protection and preservation remains, including reburial, as provided in the CEQA Guidelines, Section 15064.5(e).

Implementation of the requirement described above would reduce the potential program-level human remains disturbance impacts associated with the implementation of the Coyote Lake-Harvey Bear Ranch Master Plan. However, the County would require examination of many
specific facilities and development plans included in the Master Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary.

**Impact Significance After Mitigation:** Less Than Significant.

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GEOLOGY, GEOHAZARDS, AND SOILS

SETTING

GEOLOGICAL SETTING

Coyote Lake–Harvey Bear Ranch County Park (Park) is situated on the western flanking foothills of the Diablo Range, between Timber Ridge and the floor of the Santa Clara Valley. The Diablo Range is part of the Coast Ranges geomorphic province, a region of California characterized by discontinuous northwest trending mountain ranges and valleys. Extending along the west side of the San Joaquin Valley 170 miles from the Carquinez Straits South to Coalinga, the Diablo Range includes Mount Diablo, the Oakland–Berkeley Hills, Mount Hamilton, and the mountains that form the eastern boundary of the Santa Clara Valley. The Diablo Range in southern Santa Clara County contains a series of ridges including Palassou Ridge, Sheep Ridge, and Timber Ridge. Timber Ridge peaks at approximately 2,000 feet above mean sea level (amsl) east of the Park, with elevations decreasing westward to 754 feet amsl at Coyote Lake and dropping to 300 feet amsl along the eastern portion of the Park. The Park therefore contains considerable topographic relief, with hill slopes ranging in gradient from gradual to very steep.

The Diablo Range is composed of Great Valley Sequence and the Franciscan Assemblage bedrock (also referred to as its “basement”). The Great Valley sequence is a thick section of ancient sea floor sediments laid down during the Cretaceous Period, while the Central Valley was covered with water and the eroding Sierra Nevada deposited sediments westward. The Franciscan Assemblage is the name applied collectively to the folded and faulted sea floor sediments that were wedged against the continent during subduction to form much of the Coast Ranges province.

In the region surrounding the Park, the Great Valley Sequence rocks, exposed on the east side of Coyote Lake, consist of eastward-dipping sandstone along Timber Ridge and older Cretaceous Period shale (about 70 million years old), which are thought to belong to the Berryessa Formation. Franciscan Assemblage basement rocks are not found in abundance in the area of the Park, but rather, the foothills in this area are composed of younger basalt (about 3.5 million years old) and even younger non-marine deposits of gravel, sand, and clay of the Santa Clara Formation. Previous mapping west of Coyote Lake (Dibblee, 1973) have identified rocks containing serpentine which is commonly found in conjunction with Franciscan Assemblage rocks. Young alluvial deposits, especially those generated by landslide activity, overlie the major bedrock formations throughout the area of the Park.

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1 Serpentine rock or serpentinite, is the California State rock and is apple-green to black, often with light and dark colored areas. Serpentine is usually fine-grained and compact with shiny or wax-like appearance and a slightly soapy feel. Serpentine occurs in central and northern California—in the Coast Ranges, the Klamath Mountains, and in the Sierra Nevada foothills (CDMG, 1996).
Mineral Resources

The California Division of Mines and Geology (CDMG) has classified lands within the San Francisco-Monterey Bay Region into Mineral Resource Zones (MRZs) based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act (SMARA) of 1974 (Stinson et al., 1983). No portion of the Park has a MRZ designation according to Special Report 146 (Stinson et al., 1983).

SEISMIC SETTING

The geology of the entire San Francisco Bay Area is in part controlled by both active and potentially active faults and is considered a region of high seismic activity due to its location on a tectonic plate boundary denoted by the San Andreas Fault Zone. The U.S. Geological Survey (USGS) Working Group on California Earthquake Probabilities has evaluated the probability of one or more earthquakes of Richter magnitude 6.7 or higher occurring in the San Francisco Bay Area within the next 30 years. The result of the evaluation indicated a 70 percent likelihood that such an earthquake event will occur in the Bay Area between 2000 and 2030 (USGS, 1999).

Regional Faults

Perhaps the most significant geologic feature of the Park is the Calaveras fault, which extends in a northwest direction through Coyote Lake and the Coyote Lake Dam. The Calaveras fault is approximately 175 miles long and extends from south of Hollister to near Dublin as shown on Figure 3-4. The Calaveras fault, like the Hayward fault and San Andreas faults, exhibits “strike-slip” movement, and has undergone displacement within the last 150 years. The Calaveras fault has experienced several earthquakes in recent history, including an estimated moment magnitude (M) 6.2 in 1984, an M 5.9 in 1979, and an M 6.2 in 1911. The epicenters of the 1979 and 1984 earthquakes were located only slightly South of Coyote Lake (Jennings, 1994). In the southern portion of the Calaveras fault near the Calaveras Reservoir, micro-earthquakes are common due to a slip-rate ranging from 6 to 15 mm/yr. (CDMG, 1996). An M 6.8 earthquake is the largest seismic event anticipated to occur along the Calaveras fault; the USGS Working Group has estimated there is an 18% chance of this magnitude earthquake occurring within the next 30 years (USGS, 1999).

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2 An active fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 10,000 years). A potentially active fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. Sufficiently active is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart, 1997).

3 A strike-slip fault is a fault on which movement is parallel to the fault’s strike (Bates and Jackson, 1980).

4 Moment magnitude is related to the physical size of a fault rupture and movement across a fault. Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave. Moment magnitude provides a physically meaningful measure of the size of a faulting event (CDMG, 1997b). The concept of “characteristic” earthquake means that we can anticipate, with reasonable certainty, the actual damaging earthquake that can occur on a fault.
Figure 3-4
Principal Active Faults in San Francisco Bay Area

SOURCE: California Department of Conservation,
Division of Mines and Geology (After Jennings, 1994)
In addition to the Calaveras fault, the potentially active Silver Creek and Coyote Creek faults are located within the Park. These faults roughly parallel the Calaveras fault trace to the west, as shown on Figure 3-4. Movement on the Silver Creek and Coyote Creek faults are thought to have occurred within the last 1.6 million years.

Other principal faults capable of producing significant ground shaking at the Park are listed on Table 3-6, and include the San Andreas, Hayward, Concord-Green Valley, Marsh Creek-Greenville, San Gregorio-Hosgri, and Rodgers Creek Faults. A major seismic event on any of these active faults could cause significant ground shaking at the site, as experienced during earthquakes in recent history, namely the 1906 San Francisco earthquake, and the 1989 Loma-Prieta earthquake (ABAG, 2003b). The estimated (moment) magnitudes (Table 3-7) represent characteristic earthquakes on particular faults.\footnote{Moment magnitude is related to the physical size of a fault rupture and movement across a fault. Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave. Moment magnitude provides a physically meaningful measure of the size of a faulting event (CDMG, 1997b). The concept of “characteristic” earthquake means that we can anticipate, with reasonable certainty, the actual damaging earthquake that can occur on a fault.}

Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. The Modified Mercalli (MM) intensity scale (Table 3-7) is commonly used to measure earthquake effects due to ground shaking. The MM values for intensity range from I (earthquake not felt) to XII (damage nearly total), and intensities ranging from IV to X could cause moderate to significant structural damage.\footnote{The damage level represents the estimated overall level of damage that will occur for various MM intensity levels. The damage, however, will not be uniform. Some buildings will experience substantially more damage than this overall level, and others will experience substantially less damage. Net all buildings perform identically in an earthquake. The age, material, type, method of construction, size, and shape of a building all affect its performance (ABAG, 1998a).}

**GEOLOGIC AND SEISMIC HAZARDS**

The Park is located on the Calaveras fault and is therefore in an area susceptible to ground shaking and related ground failures, including surface fault rupture. Slope failures through both static and seismically induced forces are possible considering the underlying bedrock and hill slopes within the Park. In addition, excessive soil erosion caused from the action of wind and water on exposed surficial materials and landslide debris is considered a potential geologic hazard, especially in areas adjacent to Coyote Lake.

**SURFACE FAULT RUPTURE**

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake’s seismic waves. The magnitude, sense, and nature of fault rupture can vary for different faults or even along different strands of the same fault. Surface rupture can damage or collapse buildings, cause severe damage to roads and pavement structures, and cause
### TABLE 3-6
MAJOR ACTIVE FAULTS IN VICINITY OF COYOTE-HARVEY BEAR RANCH COUNTY PARK

<table>
<thead>
<tr>
<th>Fault</th>
<th>Distance and Direction from Coyote Lake-Harvey Bear Ranch County Park</th>
<th>Recency of Movement</th>
<th>Fault Classification&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Historical Seismicity&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Maximum Moment Magnitude Earthquake (Mw)&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calaveras</td>
<td>0 miles</td>
<td>Historic (1861 rupture) Holocene</td>
<td>Active</td>
<td>M5.6-M6.4, 1861 M4 to M4.5 swarms 1970, 1990</td>
<td>6.8</td>
</tr>
<tr>
<td>San Andreas</td>
<td>12 miles southwest</td>
<td>Historic (1906; 1989 ruptures) Holocene</td>
<td>Active</td>
<td>M7.1, 1989 M8.25, 1906 M7.0, 1838 Many &lt;M6</td>
<td>7.9</td>
</tr>
<tr>
<td>Hayward</td>
<td>18 miles north</td>
<td>Historic (1836; 1868 ruptures) Holocene</td>
<td>Active</td>
<td>M6.8, 1868 Many &lt;M4.5</td>
<td>7.1</td>
</tr>
<tr>
<td>Marsh Creek-Greenville</td>
<td>24 miles northeast</td>
<td>Historic (1980 rupture) Holocene</td>
<td>Active</td>
<td>M5.6 1980</td>
<td>6.9</td>
</tr>
<tr>
<td>San Gregorio-Hosgri</td>
<td>36 miles west</td>
<td>Holocene – Late Quaternary</td>
<td>Active</td>
<td>Many M3-6.4</td>
<td>7.3</td>
</tr>
</tbody>
</table>

<sup>a</sup> An active fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 10,000 years). A potentially active fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. Sufficiently active is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart, 1997).

<sup>b</sup> Richter magnitude (M) and year for recent and/or large events. Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave.

<sup>c</sup> Moment magnitude is related to the physical size of a fault rupture and movement across a fault. Moment magnitude provides a physically meaningful measure of the size of a faulting event (CDMG, 1997b). The Maximum Moment Magnitude Earthquake (Mw), derived from the joint CDMG/USGS Probabilistic Seismic Hazard Assessment for the State of California, 1996. (CDMG OFR 96-08 and USGS OFR 96-706).

**SOURCES:** Hart, 1997, Jennings, 1994, Peterson, 1996.
### Table 3-7

**Modified Mercalli Intensity Scale**

<table>
<thead>
<tr>
<th>Intensity value</th>
<th>Intensity Description</th>
<th>Average Peak Acceleration</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Not felt except by a very few persons under especially favorable circumstances.</td>
<td>&lt; 0.0015 0017 g&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>II</td>
<td>Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.</td>
<td>&lt; 0.0015 014 g</td>
</tr>
<tr>
<td>III</td>
<td>Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly, vibration similar to a passing truck. Duration estimated.</td>
<td>&lt; 0.0015 014 g</td>
</tr>
<tr>
<td>IV</td>
<td>During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.</td>
<td>0.015014–0.02 04 g</td>
</tr>
<tr>
<td>V</td>
<td>Felt by nearly everyone, many awakened. Some dishes and windows broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles may be noticed. Pendulum clocks may stop.</td>
<td>0.0304–0.04 09 g</td>
</tr>
<tr>
<td>VI</td>
<td>Felt by all, many frightened and run outdoors. Some heavy furniture moved; and fallen plaster or damaged chimneys. Damage slight.</td>
<td>0.0609–0.07 18 g</td>
</tr>
<tr>
<td>VII</td>
<td>Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.</td>
<td>0.1018–0.15 34 g</td>
</tr>
<tr>
<td>VIII</td>
<td>Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.</td>
<td>0.2534–0.30 0.65 g</td>
</tr>
<tr>
<td>IX</td>
<td>Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.</td>
<td>0.5065–0.55 1.24 g</td>
</tr>
<tr>
<td>X</td>
<td>Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.</td>
<td>&gt; 0.601.24 g</td>
</tr>
<tr>
<td>XI</td>
<td>Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.</td>
<td>&gt; 0.601.24 g</td>
</tr>
<tr>
<td>XII</td>
<td>Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.</td>
<td>&gt; 0.601.24 g</td>
</tr>
</tbody>
</table>

---

<sup>a</sup> g is (gravity) = 980 centimeters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

failure of overhead as well as underground utilities. Future faulting is generally expected along different strands of the same fault (CGS, 1997). Ground rupture is considered more likely along active faults, which are referenced above.

Portions of the Park are located within an Alquist-Priolo Fault Rupture Hazard Zone (discussed below) for fault rupture hazards, as designated through the Alquist-Priolo Earthquake Fault Zoning Act and shown on Figure 3-5. The Calaveras fault transects Coyote Lake and its dam, and the associated Alquist-Priolo Fault Rupture Hazard Zone encompasses the Lakeside Area and a portion of the Mendoza Area (CDMG, 1982). There is a potential that fault rupture attributable to the known and mapped traces of the Calaveras fault would occur within the Park.

Ground Shaking

Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils located relatively distant from faults, can intensity ground shaking. Portions of the Bay Area that experienced the worst structural damage during the 1989 Loma Prieta earthquake were not necessarily those closest to the fault, but rather those with soils that magnified the effects of ground shaking. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill. At the Park, subsurface sediments consist primarily of native clays and loams that are unlikely to magnify ground shaking intensity. An earthquake on the Calaveras fault is likely to generate exceptionally high intensity ground shaking if the epicenter is on the Calaveras fault in the proximity of the Park. Ground shaking intensities would be similar to that experienced in the vicinity of the 1989 Loma Prieta epicenter near Santa Cruz, 0.64 g ("g" is the force of gravity).

Landslide Hazards

The susceptibility of land (slope) failure is dependent on the slope and geology as well as the amount of rainfall, excavation or seismic activities. A landslide is a mass of rock, soil, and debris displaced down-slope by sliding, flowing, or falling. Steep slopes and down-slope creep of surface materials characterize areas most susceptible to landsliding. Landslides are least likely in topographically low alluvial fans and at the margin of the San Francisco Bay. However, the undulating foothills and steeply sloped areas with fractures bedrock have a high susceptibility to slope failure. Previous mapping has identified many landslides on the slopes surrounding the Park area (Nilsen, 1972). Slope failures including debris flows can take place as single, isolated landslides or part of large complexes consisting of multiple failures occurring over a long period of time. Within the Park, steep slopes and human disturbance of sediments and drainage patterns have created several existing landslides.

Liquefaction

Liquefaction is a phenomenon whereby unconsolidated and/or near saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in the temporary fluid-like
Alquist-Priolo Fault Rupture Zones

These are delineated as straight line segments that connect encircled turning points so as to define earthquake fault zone segments. Fault traces are delineated by a solid line where accurately located, long dash where approximately located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historical offset indicated by C for displacement by creep or possible creep.

SOURCE: USGS, Environmental Science Associates

Figure 3-5
Alquist - Priolo Fault Rupture Hazard Zone
behavior of the soil. Soil liquefaction causes ground failure that can damage roads, pipelines, underground cables, and buildings with shallow foundations. Liquefaction can occur in areas characterized by water-saturated, cohesionless, granular materials at depths less than 40 feet. In addition, liquefaction can occur in unconsolidated or artificial fill sediments. The depth of groundwater influences the potential for liquefaction in this area, the shallower the groundwater, the higher potential for liquefaction. Potential liquefaction within the Park would be expected where susceptible materials are saturated by high groundwater or by surface water such as along the margin of Coyote Lake.

Seiche

A seiche is the sloshing of a closed body of water resulting from earthquake shaking. This phenomenon frequently occurs during an earthquake on a small scale in swimming pools. At the Park, a significant earthquake on the Calaveras fault could potentially result in a severe seiche in Coyote Lake. Seiches can cause flooding and damage to areas located along shorelines that would be inundated by wave action.

Expansive Soils

Expansive soils possess a “shrink-swell” characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Expansive soils are likely present throughout the Park, as surficial soils are primarily clays and loams (Figure 3-6).

Soil Erosion

Soil erosion is a process whereby soil materials are worn away and transported to another area either by wind or water. Rates of erosion can vary depending on the soil material and structure, placement and human activity. The erosion potential for soils is variable; soil containing high amounts of silt can be easily eroded while sandy soils are less susceptible. Erosion is most likely on areas with exposed soil, and soil erosion hazards can therefore often be higher during the construction phase. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures or asphalt. Overlying soil materials at the Park consist of alluvial clays and loams, landslide debris, and fractured, weathered rock and are therefore susceptible to erosion by wind and water. Construction activities can accelerate soil erosion. Soil materials could be susceptible to erosion, especially when graded and temporarily exposed to wind or water.

REGULATORY FRAMEWORK

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act), signed into law December 1972, requires the delineation of zones along active faults
Springs
Streams
Soils
Park Boundary
- Alhambra Clay
- Arbuckle loam
- Azusa clay loam
- Climara clay
- Climara stony clay
- Cropsey clay
- Guinda gravelly loam
- Guinda loam
- Guinda-Los Gatos complex
- Gilroy clay loam
- Hilgates silt loam
- Inks rocky clay loam
- Landslides
- Los Gatos-Guinda complex
- Pleasanton loam
- Pleasanton gravelly loam
- Rincon clay loam
- Rinconwash
- San Ysidro loam
- Terrace escarpments
- Water

0 2 Miles

SOURCE: Rana Creek Habitat Restoration

Coyote Lake - Harvey Bear Ranch County Park Master Plan EIR / 201017

Figure 3-6
Soils and Hydrology
in California. The purpose of the Alquist-Priolo Act is to regulate development on or near fault traces to reduce the hazard of fault rupture and to prohibit the location of most structures for human occupancy across these traces. Cities and counties must regulate certain development projects within the zones, which includes withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement (Hart, 1997). Surface fault rupture is not necessarily restricted to the area within an Alquist-Priolo Zone. A portion of the Park is located with an Alquist-Priolo Earthquake Hazard Zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. The Park and surrounding region have not yet been investigated for potential designation as a seismic hazard zone.

Building Codes

The California Building Code is another name for the body of regulations known as the California Code of Regulations (CCR), Title 24, Part 2, which is a portion of the California Building Standards Code (CBSC, 1995). Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable (Bolt, 1988).

Published by the International Conference of Building Officials, the Uniform Building Code is a widely adopted model building code in the United States. The California Building Code incorporates by reference the Uniform Building Code (UBC) with necessary California amendments. About one-third of the text within the California Building Code has been tailored for California earthquake conditions (ICBO, 1997).

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

A geologic, seismic, or mineral resource impact is considered significant if it would result in any of the following, which are adapted from the current CEQA Guidelines (Appendix G):

- Exposure of people or structures to geologic hazards, soils, and/or seismic conditions so unfavorable that they could not be overcome by special design using reasonable construction and/or maintenance practices;
• Construction on substrate that consists of material subject to liquefaction in the event of ground shaking;

• Construction on excessively steep slopes that could result in slope failure or landslides;

• Deformed foundations from exposure to expansive soils, differential settlement, poorly engineered fill, or soil creep; or

• Depletion of a valuable aggregate or mineral resource.

This impact analysis therefore, focuses on potential project impacts related to seismicity, slope failure, and soil erosion. The evaluation considered program and project plans, current conditions at the project site, and applicable regulations and guidelines.

**IMPACTS AND MITIGATION MEASURES**

Impact Geology, Geohazards, and Soils-1: In the event of a major earthquake on the Calaveras fault portions of the Park could be susceptible to surface fault rupture due to excessive seismic ground motion. Such an event could expose people and property to the hazards associated with lateral and/or vertical ground offset. Less Than Significant with Mitigation Measures.

The Alquist-Priolo Earthquake Fault Zoning Act delineates areas near active faults to prohibit the location of most structures on an active fault trace, thereby mitigating potential hazards of fault rupture. Alquist-Priolo Fault Rupture Hazard Zones (FRHZs) are intended to encompass known fault traces and are established based on a prescribed distance from the known or inferred fault trace. Within the Park, the Alquist-Priolo FRHZ encompasses Coyote Lake and the surrounding shoreline.

**Project-Level Components**

As discussed in Chapter 2, Project Description, project-level components include 1) installation of trails, gates, fencing, staging areas, and signage (Western Flat and Mendoza Area); 2) campground improvements, including reduction of density, addition of shower facilities, and 3) establishment of hang-gliding launch and landing sites (Slopes and Ridge Area); 4) establishment of equestrian camping at existing overflow parking area (West Flat Area); 5) installation of boat self-launch area for kayaks/non-motorized boats (Lakeside Area); and 6) use of pond for annual Fishability Days event (near Mendoza Ranch).

The campground improvements, and boat self-launch area are located within the Alquist-Priolo FRHZ. As discussed earlier, the Alquist-Priolo Fault Rupture Hazard Act regulates certain types of development within this zone. Specifically, the Act applies to any new structure that is expected to have a human occupancy rate of more 2,000 person-hours per year (Hart, 1997). Due to the seasonal-use patterns and nature of the boat self-launch facility and shower facility structures, project-level developments would likely not be subject to Alquist-Priolo regulations. However, Santa Clara County may require that structures meet Alquist-Priolo geotechnical and
seismic design requirements to minimize the potential for injury or structural damage resulting from fault rupture.

Program-Level Components

As indicated in Chapter 2, subsequent environmental documentation is required for implementation of program-level components; they are evaluated here on a conceptual level. Development would include construction of an 18-hole golf course, campground amphitheater, a fishing pond, trails, building and events center, Bicycle Park, and other site-specific use areas. Improvements outside of the West Flat Area include development of picnic areas in the Lakeside Area and minor development in the Mendoza Area.

The proposed Lakeside picnic areas are located within the Alquist-Priolo FRHZ, but are not subject to regulation by the Alquist-Priolo Act. Creation of Lakeside picnic areas would not include construction of new structures, reducing the potential for people to be exposed to hazards associated structural damage or collapse resulting from surface fault rupture. The proposed Mendoza Area Environmental Education Center, and Lakeside entrance kiosk-expanded maintenance facility are located with the Alquist-Priolo FRHZ, and would be subject to regulation under the Alquist-Priolo Act. Prior to construction, a geologic investigation would be required to determine the location of proposed structures relative to the Calaveras fault. The potential conversion of an existing Mendoza Ranch building into an Environmental Education Center may not be feasible without extensive seismic retro-fitting, or may be completely unfeasible should it be determined during geologic investigations that the building is directly on the Calaveras fault.

Mitigation Measure Geology, Geohazards, and Soils-1: Comply with applicable engineering and design rules and regulations.

The proposed amphitheatre, boat-self launch facility, and shower facility shall comply with all applicable Santa Clara County engineering and design rules and regulations. At a minimum, geotechnical and seismic design criteria shall conform to engineering recommendations in accordance with seismic requirements of Zone 4 of the 1997 Uniform Building Code (UBC) and the California Building Code (Title 24) additions.

Impact Significance After Mitigation: Less Than Significant.

Impact Geology, Geohazards, and Soils-2: In the event of a major earthquake in the region, seismic ground shaking could potentially injure people and cause collapse or structural damage to existing and proposed structures. Less Than Significant with Mitigation Measures.

The San Francisco Bay Area would likely experience at least one major earthquake (M 6.7 or higher) within the next 30 years which that would affect the project site. The intensity of such an event would depend on the causative fault and the distance to the epicenter, the moment
magnitude, and the duration of shaking. A seismic event in the Bay Area could produce ground shaking intensities at the proposed project site ranging from violent (MM IX) to moderate (MM VI).

A characteristic earthquake on the Calaveras fault with an estimated M 6.8 could violent (IX) shaking intensities throughout the majority of the Park with very violent (X) shaking in areas adjacent to Coyote Lake (ABAG, 2003a). Based on the Modified Mercalli scale, an earthquake of this intensity would cause considerable structural damage, even in well-designed structures, and collapse in poorly designed structures. Substantial cracks could appear in the ground, and the shaking could cause other secondary damaging effects such as the failure of underground pipes. As a comparison, the great 1906 San Francisco earthquake, with an M 7.9, produced moderate (VI) to strong (VII) shaking intensities at the Park, while the 1989 Loma Prieta event, with an moment magnitude of M 6.9, produced moderate (VI) shaking intensities (ABAG, 2003b). A characteristic earthquake on any of the active faults listed in Table 3-4, with the exception of the Calaveras fault, could produce light (V) to strong (VII) shaking intensities (ABAG, 2003a).

**Project-Level Components**

Project-level components include the construction of a new showering facility, boat self-launch facility, and campground improvements along Coyote Lake. As discussed above in Mitigation Measure Geology, Geohazards, and Soils-1, geotechnical and seismic design criteria for the proposed structures shall conform with Santa Clara County engineering and building regulations in accordance with seismic requirements of Zone 4 of the 1997 Uniform Building Code (UBC) and the California Building Code (Title 24) additions. Compliance with Mitigation Measure Geology, Geohazards, and Soils-1 would reduce potential ground shaking effects to a less than significant level.

**Program-Level Components**

Program-level components include the construction of new structures throughout the Park, and the potential conversion of several existing ranch structures in the Mendoza Area and West Flat Area into Park facilities. Conversion of existing structures without an evaluation of their capability of withstanding seismic ground shaking, and completion of seismic upgrades, if needed, could expose Park visitors to hazards associated with severe structural damage or collapse.

**Mitigation Measure Geology, Geohazards, and Soils-2: Implement Mitigation Measure Geology, Geohazards, and Soils-1.**

**Impact Significance After Mitigation:** Less Than Significant.
Impact Geology, Geohazards, and Soils-3: In the event of a major earthquake in the region, seismic ground shaking could potentially expose people and property to seismic-related hazards, including liquefaction and seiche. Less Than Significant with Mitigation Measures.

Project-level development will include construction of several new structures along the shoreline of Coyote Lake and will likely result in an increased number of visitors to Coyote Lake. The potential for new structures to be exposed to liquefaction from underlying saturated lakeside sediments. The Park and surrounding areas have not yet been evaluated by the California Geologic Survey (formerly the California Division of Mines and Geology) for potential designation as a Seismic Hazard Zone for liquefaction, as previously discussed. To address potential liquefaction hazards, Mitigation Measure Geology, Geohazards, and Soils-2 should be incorporated into project plans.

Mitigation Measure Geology, Geohazards, and Soils-3: Conduct appropriate geologic and hazard assessments and implement necessary measures to reduce impacts.

Geologic and seismic assessments associated with proposed lakeside structures shall include an evaluation of potential liquefaction hazards. This assessment shall, at a minimum, include an analysis of subsurface soils, groundwater depth, and anticipated ground shaking intensities in accordance with CDMG Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California.

The Lakeside Area may be inundated during a seiche on Coyote Lake. Waves and subsequent flooding that may result from a seiche could result in some damage to proposed project-level lakeside structures and injury. This is a potentially significant, inherent impact associated with public use of Coyote Lake. In order to quantify seiche hazards and reduce potential impacts, the following Mitigation Measure should be incorporated:

A study shall be conducted to evaluate seiche potential on Coyote Lake. This study shall incorporate recent data regarding potential fault rupture and ground shaking hazards associated with the Calaveras fault, and shall include a determination of shoreline areas that may be inundated/flooded by seiche wave action. Reduction of campground density should incorporate relocation of sites to outside seiche inundation/flooding areas.

Lakeside Area program-level components could potentially expose Park visitors and staff to liquefaction and seiche hazards. Analyses of potential liquefaction hazards for the proposed entrance kiosk/expanded maintenance facility is recommended. In addition, seiche study results should be considered prior to finalizing potential structure locations.

Impact Significance After Mitigation: Less Than Significant.
Impact Geology, Geohazards, and Soils-4: Construction activities may result in soil erosion, and expose visitors and staff to geologic hazards associated with expansive soils. Less Than Significant with Mitigation Measures.

Project-level components includes construction of staging areas, trails, and several Lakeside structures. Work at these locations would be limited to clearing of the site, with limited grading activities at the launch area and along the trails. Construction would be most intensive at the campground improvements area, particularly associated with the construction of an amphitheatre. Project-level components have the potential to result in short-term, construction-related soil erosion. In addition, newly constructed trails have the potential to create long-term soil erosion problems by altering drainage patterns, traversing existing erosion or landslide areas, or improperly traversing slopes.

Short-term construction-related erosion of surficial soils would be mitigated by Mitigation Geology, Geohazards, and Soils 1, compliance with SWRCB General NPDES Permit to minimize erosion, as discussed in the Hydrology, Floodplains and Water Quality Section. In addition, trail design would conform with guidelines outlined in the Countywide Trails Master Plan. As noted in the proposed Master Plan, some trails may be closed seasonally due to soil conditions. To further reduce potential long-term erosion hazards, the following mitigation measures shall be incorporated:

Mitigation Measure Geology, Geohazards, and Soils-4: Proposed trails shall be constructed to avoid existing erosion and landslide areas within the Park, and shall incorporate trail location recommendations identified in the Trails Plan component of the proposed Master Plan and the Draft Natural Resource Management Plan: Coyote-Lake-Harvey Bear Ranch County Park (Rana Creek Habitat Restoration, 2002).

Program-level components would involve extensive grading associated with golf course, Bicycle Park, and other West Flat Area construction. Completion of a grading plan in accordance with Santa Clara County regulations, compliance with NPDES permit requirements, and incorporation of topographic information, erosion, drainage, and landslide areas identified in the Natural Resource Management Plan into trail and road design plans would reduce potential short- and long-term erosion impacts.

Expansive soils are located likely located throughout the Park, as the majority of soils are fine-grained clays and loams. Appropriate preparation of site soils and foundation design, as required by compliance with UBC codes in Mitigation Measure Geology, Geohazards, and Soils-1, would reduce potential expansive soil hazards for proposed project-level components. Similar measures for program-level components would likely address potential expansive soil hazards.

Impact Significance After Mitigation: Less Than Significant.
REFERENCES – Geology, Geohazards, and Soils


California Division of Mines and Geology (CDMG), How Earthquakes Are Measured, CDMG Note 32, 1997b.


Jennings, C. W., Fault Activity Map of California and Adjacent Areas, California Division of Mines and Geologic Data Map No. 6, 1:750,000, 1994.


Peterson, et.al., California Department of Conservation, Division of Mines and Geology, Seismic Shaking Hazard Maps of California, 1999.

HAZARDOUS MATERIALS

SETTING

SUMMARY OF EXISTING CONDITIONS

The 4,448-acre Park is the former location of the 2,970-acre Bear Ranch in San Martin and the 711-acre Mendoza Ranch in Gilroy. Although the majority of the Park does not have a history of hazardous materials use, the limited areas associated with ranching residences, equipment fueling, pesticide application, and agricultural chemical storage have been impacted by former ranching operations. Environmental Site Assessment’s were conducted at the both Bear Ranch and Mendoza Ranch at the time of property acquisition by the Trust for Public Land, in coordination with the Santa Clara County Department of Parks and Recreation.¹

Underground and Aboveground Storage Tanks

A 1,000-gallon split gasoline/diesel aboveground storage tank (AST) is located near the existing Park maintenance facility near Coyote Lake. The tank is used for fueling Park vehicles, and various maintenance equipment (Kloster, 2003). The former Bear Ranch operated one 500-gallon diesel aboveground storage tank (AST) and one 500-gallon gasoline underground storage tank (UST). The UST was removed from the property the early 1980’s, and the AST was removed in 1996. As part of the property transfer to the Trust for Public Land, an investigation was conducted by Erler & Kalinowski, Inc. to assess soil and groundwater conditions in the vicinity of the former UST and AST. Soil samples were collected in 1996 near the former locations of the AST and UST, and analyzed for total petroleum hydrocarbons as diesel (TPH-d), total petroleum hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, and total xylenes (BTEX).

Soil samples collected in 1996 near the former AST detected concentrations of TPH-d at 2 feet and 4 feet below ground surface (feet bgs), however deeper soil samples did not detect concentrations of TPHd above the laboratory detection limit, indicating the extent of soil impact is limited to shallow soils. Soil samples collected near the former UST detected concentrations of TPHg and BTEX in soil samples up to 100 feet bgs.²

One groundwater monitoring well was installed near the former UST following collection of soil samples; groundwater was encountered approximately 115 feet bgs during soil boring activities. Groundwater beneath the site was found to contain negligible concentrations of benzene, toluene, and xylenes that do not exceed California maximum contaminant levels (MCLs) for drinking water.

¹ Information regarding site environmental conditions was derived from reports prepared by ATC Environmental, Inc., and Erler and Kalinowski, Inc.
² Benzene, toluene, ethylbenzene, and xylene are referred to as “aromatic hydrocarbons” and are present in gasoline. Benzene is a confirmed carcinogen.
Landfills

Two household dumps were identified on the Bear Ranch and Mendoza Ranch. Subsurface soil investigation of the Bear Ranch household dump, or refuse area, was investigated (ATC Environmental, 1996b) following removal of woody plant debris, lumber, and household trash, and found to have total recoverable petroleum hydrocarbons (TRPH) at a level slightly above the reporting limit. Given that TRPH has low mobility and is non-toxic, no further investigation or remediation was warranted.

Concentrations of 4,4'-DDT, 4,4'-DDD, and 4,4'-DDE were detected in soil samples collected at the former household dump area at the Mendoza Ranch. Subsurface soil investigation and remedial activities at the Mendoza Ranch were conducted by Erler and Kalinowski, Inc., as detailed in their October 13, 1997, Report of Completion of Remedial Activities and Request for Closure. Soil remediation criteria for the Mendoza Ranch were based upon U.S. EPA industrial soil screening standards Preliminary Remediation Goals (PRGs), as approved by the Santa Clara County Department of Environmental Health (SCCDEH). Remedial activities included the excavation and removal of approximately 323 tons of impacted soil.

Following excavation of impacted soil, additional samples were collected at the limit of excavated areas to determine potential remaining concentrations of organophosphorus in soil. Organophosphate concentrations detected in soil samples collected at the limits of the excavation were below the established remedial criteria.

Pesticide Spray Areas

Concentrations of 4,4'-DDT, 4,4'-DDD, 4,4'-DDE, and toxaphene were detected in soil samples collected at former pesticide application areas at the Mendoza Ranch Barns area. Following excavation of impacted soil, additional soil samples were detected at the limit of the excavated areas to determine potential remaining concentrations of organophosphates in soil. Organophosphate concentrations detected in soil samples collected at the limits of the excavation were below the established remedial criteria.

Former Ranch Buildings

Numerous buildings associated with former ranching activities are located on the Bear Ranch and Mendoza Ranch. Investigations have not been conducted to assess the potential presence of lead-based paint, asbestos, or PCBs in these structures. However, ATC Environmental, Inc.'s Phase I Site Assessment at the Bear Ranch indicated that the majority of structures likely contained lead-based paint and asbestos. The potential presence of lead-based paint and asbestos has not been assessed at the Mendoza Ranch.

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3 4,4'-DDT, 4,4'-DDD, 4,4'-DDE are organophosphorus.
3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

Surrounding Properties

The Phase I investigations for the Bear Ranch and Mendoza Ranch properties identified potential on- and off-site sources of hazardous substances that could affect soil and groundwater quality at the Park. The identified off-site locations are downgradient (west) of the Park, based on the reported groundwater flow direction (westerly). Based upon their locations relative to the Park, the Phase I investigations concluded it was unlikely that constituents from these sites have affected soil or groundwater quality at the Park (Erler & Kalinowski, Inc., 1996).

REGULATORY SETTING

Definitions

Hazardous Materials

Hazardous materials are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties: toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), and reactive (causes explosions or generates toxic gases). Hazardous materials have been and are commonly used in commercial, agricultural, and industrial applications, as well as in residential areas to a limited extent.

Hazardous Waste

A hazardous waste is any hazardous material that is discarded, abandoned, or is to be recycled. Hazardous materials and wastes can result in public health hazards if released to the soil, groundwater, or air.

The California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. At the Park, investigation or remediation of releases from underground or aboveground petroleum storage tanks are performed under the direction of the local oversight agencies (LOP), the Santa Clara County Department of Environmental Health or the Santa Clara Valley Water District. Other types of hazardous substance release sites may be overseen by the LOP with proper notification and authorization from the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region or Central Coast Region, and the DTSC.

Santa Clara County requires a Hazardous Materials Management Plan be prepared for businesses that use or store hazardous materials in excess of threshold quantities. Installation and removal of USTs and ASTs are overseen by the Santa Clara County Department of Environmental Health. Installation and operation of USTs and ASTs must also meet standards set forth in the California Code of Regulations and California Health and Safety Code.5,6

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4 Title 22 of the California Code of Regulations, Division 4.5, Chapter 11, Article 3.
5 USTs: Title 23 of the California Code of Regulations, Division 3, Chapter 16; ASTs: California Health and Safety Code, Chapter 6.67.
Worker Safety

Occupational safety standards are set forth in federal and state laws to minimize safety risks in the workplace from both physical and chemical hazards. The California Division of Occupational Safety and Health (Cal-OSHA) and the federal Occupational Safety and Health Administration are the agencies responsible for assuring worker safety in the workplace. Cal-OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

The CEQA Guidelines provide standards for determining whether the effects of a potential impact should be considered significant. Appendix G of the CEQA Guidelines provides that a project may be deemed to have a significant impact if it would:

- Create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials;

- Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;

- Result in a safety hazard for people residing or working in the project area (for a project located within the vicinity of a private airstrip or within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport);

- Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan; or

- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

This impact analysis focuses on potential effects of hazardous materials associated with construction activities, the proposed golf course, and historic ranching operations. The project site is not located near an airport. The potential effects of wildland fires at the Park, and adopted

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6 AST regulation is dependent upon tank capacity. ASTs used to store petroleum products with a storage capacity that does not exceed 660 gallons are not regulated by the state.
emergency response or emergency evacuation plans are discussed in Public Services and Utilities section.

**IMPACTS AND MITIGATION MEASURES**

Impact Hazardous Materials-1: Construction workers and future visitors in the West Flat Area may encounter hazardous materials in impacted soil associated with historic ranching operations at the Bear Ranch. Less Than Significant with Mitigation Measures.

Improper handling, storage, or disposal of contaminated soil could pose health hazards to construction workers, the public, and the environment. Potential hazardous materials impacts to soil and groundwater associated with historic operations at the Mendoza Ranch have been investigated, and remedial activities, including the excavation of impacted soil, have been completed. However, hazardous materials impacts at the Bear Ranch have not been fully quantified. As discussed above, historic operations included a UST, AST, and household dump. Shallow soil samples collected from an area with visible surface staining contained concentrations of TPH-d, petroleum hydrocarbon impacts to soil at the former UST location have not been defined laterally at depth in soil. The Bear Ranch household dump, or refuse area, was similarly investigated (ATC Environmental, 1996b) and found to have total recoverable petroleum hydrocarbons (TRPH) at a level slightly above the reporting limit. Given that TRPH has low mobility and is non-toxic, no further investigation or remediation was warranted.

**Project-Level Components**

As discussed in Chapter 2, Project Description, project-level components include 1) installation of trails, gates, fencing, staging areas, and signage (Western Flat and Mendoza Area); 2) campground improvements, including reduction of density, addition of shower facilities; 3) establishment of hang-gliding launch and landing sites (Slopes and Ridge Area); 4) establishment of equestrian camping at existing overflow parking area (West Flat Area); 5) installation of boat self-launch area for kayaks/non-motorized boats (Lakeside Area); and 6) use of pond for annual Fishability Days event (near Mendoza Ranch). Work at most of these sites would be limited to clearing of the site, with limited grading activities at the launch area and along the trails. Construction would be most intensive at the campground improvements area. Project-level components are not located on or adjacent to previously identified potentially impacted areas of the Bear Ranch. Therefore, the potential for construction workers to encounter hazardous materials during project-level work is minimal. However, the creation of trails in the West Flat Area and subsequent influx of visitors may result in public exposure to the former Bear Ranch household dump located near an existing ranch road on the banks of Center Creek. The extent of potential soil or surface water impact associated with the Bear Ranch household dump has been investigated, and debris from the dump has been removed.

**Program-Level Components**

As indicated in Chapter 2, subsequent environmental documentation is required for implementation of program-level components; they are evaluated here on a conceptual level.
Construction of program-level components would likely include handling and use of hazardous materials, as the proposed facilities would require a substantial amount of construction activities associated with development of the West Flat Area. Development would include construction of an 18-hole golf course, a fishing pond, trails, building and events center structures, Bicycle Park, and other site-specific use areas. Improvements outside of the West Flat Area include development of picnic areas in the Lakeside Area and minor development in the Mendoza Area.

Construction associated with program-level components will be located adjacent to the former UST (identified in the Master Plan as “Historic Area”). Shallow soil samples collected in the former UST and AST region from ground surface to depths of 10 feet below ground surface (bgs) did not contain concentrations of TPH-g and BTEX, but did contain concentrations (up to 12 mg/kg) of TPH-d. Concentrations of TPH-g and BTEX were encountered in the former UST region at depths up to 100 feet bgs, and were not defined laterally in soils below 10 feet bgs.

Construction activities will likely not encounter petroleum hydrocarbon impacted groundwater, as depth to water is over 90 feet bgs in the former UST region, however the potential for grading activities to encounter petroleum impacted soils has not yet been adequately defined. In addition, there is the potential for future visitors to be exposed to petroleum hydrocarbon impacted soils.

**Mitigation Measure Hazardous Materials-1a:** The County shall continue investigation and remediation of the former UST, AST, and household dump in accordance with Santa Clara County Environmental Health Department regulations. This may include the excavation and removal of petroleum hydrocarbon impacted soils.

**Mitigation Measure Hazardous Materials-1b:** The County shall develop and implement an environmental site health and safety plan to address worker safety hazards that may arise during project- and program-level construction activities.

The Health and Safety Plan shall contain specific language identifying potentially hazardous materials associated with ranching activities that may be encountered. In addition, the contractor shall be required to comply with all applicable OSHA regulations regarding worker safety. The OSHA-specified method of compliance would be dependent on the severity of impact to soil. Appropriate measures could include a vapor monitoring program, eye protection, and specific handling requirements.

**Impact Significance After Mitigation:** Less Than Significant.

**Impact Hazardous Materials-2:** Demolition or renovation of existing structures on the Bear and Mendoza Ranches could expose construction workers and the public to lead-based paint and asbestos. Less Than Significant with Mitigation Measures.

Phase I investigations on the Bear and Mendoza Ranches did not include an assessment of the existing ranch structures for lead-based paint or asbestos. Based on the age and nature of the structures, these facilities are believed to contain these substances. Asbestos is regulated both as...
a hazardous air pollutant under the Clear Air Act and as a potential worker safety hazard under the authority of Cal-OSHA. Lead-based paint is classified as a hazardous waste if the lead content exceeds 1,000 parts per million. Additionally, lead-based paint chips can pose a hazard to workers and adjacent sensitive land uses.

**Project-Level Components**

Project-level components would not include demolition or renovation of existing structures, nor would it include grading or construction activities immediately adjacent to existing structures. Therefore, potential impacts associated with lead-based paint and asbestos in existing structures are negligible, and mitigation measures are not required.

**Program-Level Components**

Program-level components may include demolition of Mendoza Ranch structures or conversion of the ranch house into an Environmental Education Center. In the West Flat Area, structures will be converted for Park use, demolished, or maintained for their historic value. Program-level components therefore may have the potential to expose construction workers and the public to lead-based paint and asbestos associated with existing Ranch structures. Implementation of the following mitigation measures are therefore recommended for incorporation into program-level plans.

**Mitigation Measure Hazardous Materials-2a:** The County shall assess historic ranch structures on the Mendoza and Bear Ranches for the potential presence of lead-based paint and asbestos prior to implementation of program-level components that involve the destruction, renovation, or maintenance of existing structures.

An assessment shall be conducted to determine the potential extent of lead-based paint and asbestos in existing structures. Should this assessment determine that lead-based paint and/or asbestos are present, the following mitigation measures shall be implemented for identified structures.

**Mitigation Measure Hazardous Materials-2b:** The health and safety plan described above in Mitigation Measure Hazardous Materials-1b shall apply to potential lead-based paint risks present during construction.

Both the federal OSHA and Cal-OSHA regulate worker exposure during construction activities that affect lead-based paint. The Interim Final Rule found in 29 Code of Federal Regulations, Part 1926.62 covers construction work where employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance. The OSHA-specified method of compliance includes respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, and training. No minimum level of lead is specified to activate the provisions of this regulation.
Mitigation Measure Hazardous Materials-2c: A lead-based paint abatement plan containing, but not limited to, the following elements shall be implemented:

- Develop an abatement specification approved by an Interim-Certified Project Designer;
- Acquire necessary approvals from the Santa Clara County Environmental Health Department for specifications or commencement of abatement activities;
- Prepare a site health and safety plan, as needed;
- Contain all work areas to prohibit off-site migration of paint chip debris;
- Remove all peeling and stratified lead-based paint on building surfaces and on non-building surfaces to the degree necessary to safely and properly complete demolition activities according to recommendations of the survey. The demolition contractor shall be responsible for the proper containment and disposal of intact lead-based paint on all equipment to be cut and/or removed during the demolition;
- Provide on-site air monitoring during all abatement activities and background monitoring to ensure no contamination of work areas or adjacent properties;
- Cleanup and/or HEPA of vacuum paint chips;
- Collect, segregate, and profile waste for disposal determination; and
- Provide appropriate disposal of all waste.

Mitigation Measure Hazardous Materials-2d: Asbestos abatement shall be conducted prior to demolition or renovation of the existing buildings.

Prior to renovation or demolition of buildings containing asbestos, contractors licensed to conduct asbestos abatement work must be retained, and the Bay Area Air Quality Management District must be notified ten days prior to initiating construction and demolition activities. Asbestos encountered during demolition of the existing building would be disposed of at an appropriate facility.

Impact Hazardous Materials-3: Hazardous materials used onsite during construction activities (i.e., petroleum products) could be spilled through improper handling or storage. Less Than Significant.

Construction activities associated with project-level and program-level components may involve the use of certain hazardous substances and/or petroleum products. Inadvertent release of these materials could result in adverse impacts to soil, surface water, and/or groundwater. However, the onsite storage and/or use of large quantities of materials capable of impacting soil and groundwater are not typically required for a project of the proposed sizes and types.
Project-Level Components
Work associated with project-level components sites would be limited to clearing of the site, with limited grading activities at the launch area and along the trails. Construction would be most intensive at the campground improvements area. The onsite storage and/or use of large quantities of materials capable of impacting soil and groundwater are not typically required for projects of the proposed sizes and types. Hazardous materials used would likely be associated with the operation of construction equipment (i.e. fuels, oil and grease).

Program-Level Components
Construction of program-level components would likely include handling and use of hazardous materials, as the proposed facilities would require a substantial amount of construction activities associated with development of the West Flat Area, with minor construction in the Mendoza and Lakeside Area. Construction will be more extensive and wide-spread than project-level work, however, the types and nature of hazardous material usage would likely be similar.


The use of hazardous materials best management practices (BMPs) is required pursuant to National Pollutant Discharge Elimination System permits for construction activities associated with both project-level and program-level components, as discussed in Hydrology, Floodplains and Water Quality Section. BMPs typically include the following:

- Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction.
- Avoid overtopping construction equipment fuel gas tanks.
- During routine maintenance of construction equipment, properly contain and remove grease and oils.
- Properly dispose of discarded containers of fuels and other chemicals.

Implementation of BMPs would minimize potential adverse impacts to groundwater and soils resulting from hazardous materials used during construction, and additional mitigation measures are therefore not necessary.

Impact Significance After Mitigation: Less Than Significant.

Impact Hazardous Materials-4: Long-term storage and use of hazardous materials associated with golf course operation and maintenance could result in adverse impacts to soil, groundwater, and nearby surface water bodies. Less Than Significant with Mitigation Measures.
Program-Level Components

Creation of an 18-hole golf course is a program-level component of the Park’s Master Plan. Typically, operation and maintenance of a golf course includes the use of pesticides and herbicides to manage grasses and other vegetation. Poor storage or application of these substances have the potential to adversely impact subsurface conditions and nearby surface waters. The creation of a hazardous materials management plan for golf course operation would therefore be recommended. This plan should, at a minimum, define and require storage methods for chemical products and hazardous materials, and require adherence to manufacturer’s recommendations on use, storage, and disposal of these products. In addition, adherence to a Pesticide and Herbicide Application Plan, as discussed in Hydrology, Floodplains and Water Quality Section, is recommended to protect sensitive hydrologic areas on or near the course.

Mitigation Measure Hazardous Materials-4: The golf course would be operated in conformance with the County of Santa Clara’s guidelines for golf course design (County of Santa Clara, 1996) and the County’s Integrated Pest Management Ordinance (County of Santa Clara, 2002). These guidelines set strict limits on types and quantities of allowable use of pesticides and herbicides, and also establish standards for groundwater and surface water quality in vicinity of their use.

Impact Significance After Mitigation: Less Than Significant.

REFERENCES – Hazardous Materials


ATC Environmental Inc., Results of a Subsurface Investigation Conducted at the Bear Ranch, 2045 San Martin Avenue, San Martin, February 7, 1997.


Erler & Kalinowski, Inc. *Phase I Preliminary Environmental Site Assessment for Property Located at 4495 Roop Road in Gilroy, California, September 9, 1996.*

Erler & Kalinowski, Inc., *Results of Investigations and Remedial Plan, Mendoza Property, Gilroy,* December 2, 1996.


HYDROLOGY, FLOODPLAINS AND WATER QUALITY

SETTING

SUMMARY OF EXISTING CONDITIONS

Watershed and Drainage

Coyote Lake-Harvey Bear Ranch County Park incorporates 4,448 acres of the western foothills of the Diablo Range, west of Timber Ridge, sloping west onto the eastern edge of Coyote Valley. The Park includes the entirety of Coyote Lake, which was formed by damming a portion of Coyote Creek in 1936. In addition, numerous springs are located throughout the property, and the Park incorporates the headwaters of Skillet Creek, Church Creek, New Creek, Center Creek, San Martin Creek, and a branch of Little Llagas Creek.

Drainage within the Park is divided, with the eastern edge draining into Coyote Creek, which flows northwest along the Diablo Range before eventually emptying into San Francisco Bay. A small ridge divides Coyote Creek, Coyote Lake, and several unnamed tributaries from the remainder of the Park hydrologically. The springs and creeks which originate along the western flank of the foothills flow west down onto the floor of the Coyote Valley near the towns of San Martin and Gilroy, and become tributaries of Llagas Creek, eventually draining into the Pajaro River and the Pacific Ocean in Monterey Bay.

Flooding

Due to its elevated topographic status, the majority of the Park is located outside of the 100-year and 500-year flood zone, as designated by the Federal Emergency Management Administration’s (FEMA) National Flood Insurance Program. However, the shoreline around Coyote Lake, particularly the south end of the lake, is located with the 100-year flood zone. The boundaries of the 100-year flood zone are determined from a combination of precipitation data and land use characteristics, and is used as a design criterion to ensure a factor of safety from flood hazard. During any given year, there is a one percent chance a 100-year flood will occur and a 0.2 percent chance of a 500-year flood.

Water Quality

The California Regional Water Quality Control Board, San Francisco Bay Region (SFRWQCB), California Regional Water Quality Control Board, Central Coast Region (CCRWQCB), and Santa Clara Valley Water District (SCVWD) are responsible for protecting and regulating water quality in the Park. The division in Regional Board regulatory oversight is due to the different watersheds incorporated within the Park. Coyote Creek and Coyote Lake are within SFRWQCB jurisdiction, while the remainder of the Park which drains into Llagas Creek is regulated by CCRWQCB. SCVWD is the primary water resources agency for Santa Clara County, and provides local oversight of surface and groundwater quality within the County and throughout the entire Park.
Coyote Lake

Coyote Lake is a 4.8 mile long, 648-acre artificial reservoir with a capacity to store 22,925 acre-feet of water (Santa Clara Valley Water District, 2001). The volume of water stored by the reservoir varies seasonally, in conjunction with cyclic precipitation patterns. As the recreational focal point of the Park, Coyote Lake is used by visitors for swimming, boating, water skiing, jet skiing, and fishing. Among the various recreational pursuits the lake supports, motorized boating and jet-skis have the highest potential to degrade water quality. Methyl tertiary butyl ether (MTBE), an oxygenate added to gasoline fuel, has been detected in several County reservoirs.\(^1\)

In recognition of this, Santa Clara County Department of Parks and Recreation now requires non-MTBE fuel be used for all vessels in County reservoirs, including Coyote Lake (Santa Clara County Department of Parks and Recreation, 2001).

Non-Point Source Pollution

Non-point source pollution is a concern whenever there is a potential that proposed or existing activities will increase the amount of urban runoff and therefore increase the quantities of polluted runoff from paved surfaces such as streets and parking lots (referred to as non-point source pollutants). Under its existing conditions, the Park represents a minor contribution of non-point source pollution to the Coyote Creek and Llagas Creek watersheds reservoirs.

Soil Erosion

Erosion and sedimentation are natural processes driven by surface runoff that can be accelerated by human activities such as grading or vegetation removal. Removal of vegetation or impervious areas (concrete, asphalt, etc.) expose soils to precipitation and surface runoff and can accelerate surface soil erosion. Erosion potential is determined by four principal factors: the characteristics of the soil, extent of vegetative cover, topography, and climate.

Erosion at the Park is currently minimized by the existing vegetation. However, areas of the foothills with steep slopes and water bodies or springs may be susceptible to erosion hazards during periods of intense rainfall or removal of existing vegetation.

Groundwater

Depth to groundwater varies throughout the Park, with some areas containing active springs, while in other regions depth to groundwater has been estimated at 115 feet below ground surface (ATC Environmental, Inc., 1997). Groundwater quality within the region is regulated by the SCVWD, SFRWQCB, and CCRWQCB.

Existing groundwater quality problems in the region include elevated concentrations of nitrates and perchlorate. Nitrate is naturally formed by the combination of nitrogen and oxygen in soils, and then transmitted to groundwater through the downward migration of precipitation or

\(^1\) MTBE has been identified as a potential carcinogen. The California Department of Health Services has designated a primary maximum contaminant level (MCL) for MTBE in drinking water of 15 micrograms per liter. In addition, a secondary MCL has been established for MTBE of 5 micrograms per liter. Secondary MCLs address taste, odor, and appearance of drinking water (California Department of Health Services, 2001).
irrigation water.\(^2\) Elevated concentrations of nitrate in groundwater can be caused by several factors, including livestock waste, sewer systems, and fertilizers. Portions of the Llagas Groundwater Basin have nitrate concentrations that exceed California drinking water standards (Santa Clara Valley Water District, 2003).

Perchlorate contamination of groundwater in southern Santa Clara County is being investigated by the CCRWQCB.\(^3\) The perchlorate plume is presently known to extend from Tennant Avenue in Morgan Hill southward along Highway 152 to Masten Road, and is bordered on the east and west by Center Avenue and the Monterey Highway. Additional testing of groundwater wells in the region is being conducted as part of the ongoing investigation to better define the existing extent of contamination, wells as far south as Holsclaw Road and as far east as Foothill Avenue have been found to contain perchlorate concentrations in excess of California drinking water standards (Santa Clara Valley Water District, 2003).

**REGULATORY FRAMEWORK**

Regulatory authorities exist on both the state and federal levels for the control of water quality in California. The major federal legislation governing the water quality aspects of the Park is the Clean Water Act, as amended by the Water Quality Act of 1987. The objective of the act is “to restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” The State of California’s Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides the basis for water quality regulation within California. The State Water Resources Control Board (SWRCB) administers water rights, water pollution control, and water quality functions throughout the state, while the Regional Water Quality Control Boards (RWQCBs) conduct planning, permitting, and enforcement activities.

**State and Regional Water Quality Control Board**

The primary responsibility for the protection and enhancement of water quality in California has been assigned by the California legislature to the SWRCB and the nine RWQCBs. The SWRCB provides state-level coordination of the water quality control program by establishing statewide policies and plans for the implementation of state and federal laws and regulations. The RWQCBs adopt and implement water quality control plans (basin plans) that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems.

As earlier discussed, the Park is within the jurisdiction of both the SFWRQCB and the CCRWQCB. The SFRWQCB and CCRWQCB have set water quality objectives and established beneficial uses for all surface waters in the region. Due to the extensive reliance on groundwater

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\(^2\) Nitrate interferes with the body’s ability to transport oxygen in blood, and can cause adverse health effects in infants. The California Department of Health Services has designated a primary MCL for nitrate in drinking water of 45 micrograms per liter (California Department of Health Services, 2003).

\(^3\) Perchlorate is used in the manufacturing of rocket fuel and highway flares and can cause adverse health effects, including interference with thyroid gland functions (Santa Clara Valley Water District, 2003). The California Department of Health Services has designated a primary MCL for perchlorate in drinking water of 4 micrograms per liter (California Department of Health Services, 2003).
for water supply purposes in the region, the SCVWD monitors groundwater conditions in the County, including water depth, subsidence, and groundwater quality. Groundwater monitoring wells are tested for a variety of constituents depending upon well location, and historic and current land use.

**Construction Activity Permitting**

The SFRWQCB and CCRWQCB monitor and enforce the National Pollutant Discharge Elimination System (NPDES) stormwater permitting for their regions. The SWRCB administers the NPDES Permit Program through its General NPDES Permit. Construction activities of one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The County must submit a Notice of Intent to the SWRCB in order to be covered by the General Permit prior to the beginning of construction. The General Construction Permit requires the preparation and implementation of a stormwater pollution prevention plan (SWPPP), which must be prepared before construction begins. Components of SWPPPs typically include specifications for best management practices (BMPs) to be implemented during project construction for the purpose of minimizing the discharge of pollutants in stormwater from the construction area. In addition, a SWPPP includes measures to minimize the amount of pollutants in runoff after construction is completed, and identifies a plan to inspect and maintain project BMPs and facilities.

**Santa Clara County and Santa Clara Valley Water District**

The Santa Clara County Department of Parks and Recreation is responsible for constructing and maintaining drainage facilities in the Park in accordance with Santa Clara County and SCWVD criteria. The SCVWD is the water resources agency established for the purposes of providing comprehensive water management for all beneficial uses and protection from flooding within Santa Clara County. The SCVWD is authorized to take action to carry out is specified purposes, which include the enhancement, protection, and restoration of streams, riparian corridors, and natural resources. As such, the SCVWD is responsible for managing groundwater and surface water supplies and quality, and for providing flood protection and stream stewardship services with Santa Clara County.

In Santa Clara County, storm water discharge from thirteen cities and towns in the Santa Clara Valley, including the portion of the Park located within SFRWQCB jurisdiction, the Coyote Creek watershed, is regulated by the Santa Clara Valley Urban Runoff Prevention Program (SCVURPPP). As a member of SCVURPPP, storm water runoff generated this portion of the Park is discharged under an NPDES permit issued by the SFRWQCB. The SFRWQCB recently renewed SCVURPPP's NPDES Permit on October 17, 2001. This permit renewal included revising Provision C.3 to require to require on-site treatment and storage of storm water runoff, and reduced discharge of storm water pollutants to the maximum extent possible (MEP) for development projects that fall under certain use and size characteristics.
In San Martin and surrounding unincorporated areas of Santa Clara County, storm water discharge is regulated under an NPDES Discharge of Storm Water from Small Municipal Separate Storm Sewer System (Small MS4 General Permit) issued by the SWRCB to Santa Clara County. The Small MS4 General Permit requires discharges to develop and implement a Storm Water Management Plan (SWMP) to reduce discharge of storm water pollutants to the MEP. Surface water discharge generated from areas within the park under CCRWCB jurisdiction, including the West Flat Area, would be required to comply with South Santa Clara County’s Small MS4 General Permit and SWMP.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

The CEQA Guidelines establish that a significant impact would be expected to occur if the project would:

• Violate any water quality standards or waste discharge requirements;

• Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);

• Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off the site;

• Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off the site;

• Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems;

• Otherwise substantially degrade water quality;

• Place within a 100-year flood hazard area structures that would impede or redirect flood flows;

• Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of failure of a levee or a dam; or

• Result in inundation by seiche, tsunami, or mudflow.

Due to the location of the Park, certain impacts are not anticipated to effect the area. Located approximately 20 miles from Monterey Bay, the Park would not be inundated during a tsunami. Potential flooding associated with seiche hazards are addressed in the Geology, Geohazards and Soils Section.
IMPACTS AND MITIGATION MEASURES

Impact Hydrology, Floodplains and Water Quality-1: Construction activities could result in soil erosion and increase levels of suspended sediments and contaminants in stormwater run-off, resulting in adverse impacts to surface water quality. Less Than Significant with Mitigation Measures.

Construction activities adjacent to waterways could result in soil erosion and decreased water quality unless erosion control and sedimentation precautions are employed. Excavation, grading, stockpiling, and other earth-moving operations could potentially result in erosion and sedimentation to waterways, especially during the rainy season. Sedimentation to the waterways would degrade water quality for beneficial uses by increasing channel sedimentation and suspended sediment, reducing the flood-carrying capacity, and affecting associated aquatic and riparian habitats, reducing reservoir storage capacity, and increasing the cost of drinking water treatment.

Project-Level Components

As discussed in Chapter 2, Project Description, project-level components include 1) installation of trails, gates, fencing, staging areas, and signage (Western Flat and Mendoza Area); 2) campground improvements, including reduction of density, addition of shower facilities; 3) establishment of hang-gliding launch and landing sites (Slopes and Ridge Area); 4) establishment of equestrian camping at existing overflow parking area (West Flat Area); 5) installation of boat self-launch area for kayaks/non-motorized boats (Lakeside Area); and 6) use of pond for annual Fishability Days event (near Mendoza Ranch). Work at most of these sites would be limited to clearing of the site, with limited grading activities at the launch area and along the trails. Grading and construction would be most intensive at the campground improvements area.

Program-Level Components

As indicated in Chapter 2, subsequent environmental documentation is required for implementation of program-level components; they are here evaluated on a conceptual level. Construction of program-level components would result in impacts to hydrology and water quality, as the proposed facilities would require a substantial amount of construction activities associated with development of the West Flat Area. Development would include construction of an 18-hole golf course, a fishing pond, trails, building and events center structures, Bicycle Park, and other site-specific use areas. In particular, construction of the golf course, equestrian center, events pavilion, and fishing pond could result in temporary and permanent realignment of several small seasonal drainages in the Western Flat area (also addressed in Biological Resources Section). Improvements outside of the West Flat Area include development of picnic areas in the Lakeside Area and minor development in the Mendoza Area.

Construction of program-level components would involve earthmoving and grading, potentially resulting in soil erosion that could affect the water quality of Coyote Lake and other surface water bodies. Compliance with the SWRCB General NPDES Permit and SCVWD Ordinance 83-2, as discussed below, would reduce this impact to a less-than-significant level.
Mitigation Measure Hydrology, Floodplains and Water Quality-1a: The County shall comply with the SWRCB General NPDES Permit and SCVWD regulations to minimize erosion and subsequent transport of sediments and contaminants to nearby surface water bodies.

Construction-related grading and other activities would be required to comply with the Association of Bay Area Governments' (ABAG) Manual of Standards for Erosion and Sediment Control Measures (ABAG, 1995) and with the California Stormwater Quality Association (CASQA), Stormwater Best Management Practice Handbook for Construction (CASQA, 2003a). The County is also required to apply for coverage under the SWRCB’s General Construction NPDES permit and The County will prepare a SWPPP prior to construction activities, as required by the SWRCB’s General Permit for Construction Activities.

Implementation of the SWPPP plan starts with the commencement of construction and continues through the completion of the project. Upon completion of the project, the sponsor must submit a Notice of Termination to the SWRCB to indicate that construction is completed. At a minimum, this plan will include the following requirements:

- Excavation and grading activities will be scheduled for the dry season only (April 15 to October 15), to the extent possible. This will reduce the chance of severe erosion from intense rainfall and surface runoff, as well as the potential for soil saturation in swale areas.

- If excavation occurs during the rainy season, storm runoff from the construction area will be regulated through a stormwater management/erosion control plan that may include temporary onsite silt traps and/or basins with multiple discharge points to natural drainages and energy dissipaters. Stockpiles of loose material will be covered and runoff diverted away from exposed soil material. If work is stopped due to rain, a positive grading away from slopes will be provided to carry the surface runoff to areas where flow can be controlled, such as the temporary silt basins. Sediment basin/traps will be located and operated to minimize the amount of offsite sediment transport. Any trapped sediment will be removed from the basin or trap and placed at a suitable location onsite, away from concentrated flows, or removed to an approved disposal site.

- Temporary erosion control measures will be provided until perennial revegetation or landscaping is established and can minimize discharge of sediment into nearby waterways. For construction within 500 feet of a water body, fiber rolls and/or gravel bags, straw bales will be placed upstream adjacent to the water body.

- After completion of grading, erosion protection will be provided on all cut-and-fill slopes. Revegetation will be facilitated by mulching, hydroseeding, or other methods and should be initiated as soon as possible after completion of grading and prior to the onset of the rainy season (by October 15November-1).

- Permanent revegetation/landscaping will emphasize drought-tolerant perennial ground coverings, shrubs, and trees to improve the probability of slope and soil stabilization without adverse impacts to slope stability due to irrigation infiltration and long-term root development.
• BMPs selected and implemented for the project will be in place and operational prior to the onset of major earthwork on the site. The construction phase facilities will be maintained regularly and cleared of accumulated sediment as necessary.

• Hazardous materials such as fuels and solvents used on the construction sites will be stored in covered containers and protected from rainfall, runoff, and vandalism. A stockpile of spill cleanup materials will be readily available at all construction sites. Employees will be trained in spill prevention and cleanup, and individuals will be designated as responsible for prevention and cleanup activities.

Mitigation Measure Hydrology, Floodplains and Water Quality-1b: The County shall minimize temporary or permanent realign of streams or drainage swales associated with the project to the maximum extent possible. Designs for proposed permanent stream realignments shall be prepared by a California-registered geologist or civil engineer experienced in streambed restoration and fluvial processes. All stream realignment activities, both temporary and permanent, shall comply with federal, state, and local agency requirements in order to minimize potential adverse short-term and long-term water quality impacts.

The County is required by SCVWD to obtain a permit prior to commencing any work in and within 50 feet of streams or drainage swales. In addition, permanent alteration of drainages may require a Clean Water Act Section 404 Nationwide permit from the U.S. Army Corps of Engineers and a Clean Water Act Section 401 Water Quality Certification from the CCRWQCB, as discussed in detail in Section 3, Biological Resources. Compliance with CCRWQCB and U.S. Army Corps of Engineers permit requirements would minimize potential degradation of water quality in drainages associated permanent stream realignments. The County shall also obtain a the County shall prepare an erosion control plan specifying measures to prevent erosion/sedimentation problems during project construction immediately adjacent to or within streams or drainage swales. This plan shall include a map of the project site delineating where erosion control measures will be applied, and shall include the following minimum criteria:

• Construction equipment shall not be operated in flowing water, except as may be necessary to construct crossings or barriers.

• Stream diversion structures shall be designed to preclude accumulation of sediment. If this is not feasible, an operation plan shall be developed to prevent adverse downstream effects from sediment discharges.

• Where working areas are adjacent to or encroach on live streams, barriers shall be constructed that are adequate to prevent the discharge of turbid water in excess of specified limits. The discharged water shall not exceed 110 percent of the ambient stream turbidity of the receiving water, if the receiving water is a flowing stream with turbidity greater than 50 nephelometric turbidity unit (NTU), or 5 NTU above ambient turbidity for ambient turbidities that are less than or equal to 40 NTU. If the water is discharged to a dry streambed, the discharged water shall not exceed 50 NTU.

• Material from construction work shall not be deposited where it could be eroded and carried to the stream by surface runoff or high stream flows.

• Riparian vegetation shall be removed only when absolutely necessary.
Compliance with the Clean Water Act, SCVWD requirements, and the SWRCB’s NPDES requirements, which include the creation of a project-specific SWPPP as discussed above, compliance with CCRWQCB and U.S. Army Corps of Engineers permits, and development of an erosion control plan would ensure that potential adverse impacts to surface water associated with project construction would be less than significant, minimize or eliminate potential water-quality impacts associated with surface water runoff during construction activities, resulting in a less-than-significant impact.

Impact Significance After Mitigation: Less Than Significant.

Impact Hydrology, Floodplains and Water Quality-2: Creation of new trails may increase erosion by altering existing drainage patterns. Less Than Significant with Mitigation Measures.

Project- and Program-Level Components

Increased turbidity and contamination from runoff and soil erosion is a primary concern in regards to water quality impacts from Park development. Trails frequently result in a change to drainage patterns that create erosion issues. As noted in the proposed Master Plan, some trails may need to be closed seasonally due to soil conditions. Potential erosion associated with proposed trails is addressed in Geology, Geohazards and Soils Section.

Mitigation Measure Hydrology, Floodplains and Water Quality-2: Implement Mitigation Measure Geology, Geohazards and Soils-4. Trails shall be designed to minimize alterations to existing drainage patterns, prohibit trail short-cutting, and protect water quality in Coyote Lake. In addition, the County shall post information in equestrian staging areas to educate park users about potential adverse water quality impacts associated with undesignated trail use.

Impact Significance After Mitigation: Less Than Significant.

Impact Hydrology, Floodplains and Water Quality-3: An increase in impervious surfaces associated with construction of project- and program-level components may increase surface water run-off, potentially exceeding drainage system capacities, resulting in downstream flooding. Less Than Significant with Mitigation Measures.

Project- and Program-Level Components

The majority of project-level components will not create newly impervious surfaces. The proposed shower facility in the Lakeside Area would cover a relatively small area and would result in a less than significant increase in surface water run-off to Coyote Lake. Program-level
components may significantly increase surface water run-off due to construction of an events pavilion, Satellite Ranger Station, Bicycle Park, golf course, and paved parking lots.

Project- and program-level components would not be built within the 100-year floodplain around Coyote Lake, therefore construction of these facilities would not impede or redirect floodwater flows. No proposed project-level components would have an impact on flooding that could affect State Highway 152.

Mitigation Measure Hydrology, Floodplains and Water Quality-3g: Potential mitigation may include installation of a new subsurface storm drainage system in the West Flat Area, and evaluation of San Martin’s adjoining existing storm drain system to incorporate increased flow volumes originating from the Park.

Mitigation Measure Hydrology, Floodplains and Water Quality-3b: Existing pervious surfaces shall be preserved to minimize the amount of newly generated storm runoff to the greatest extent possible, in accordance the recommendations provided in the Bay Area Stormwater Management Agencies Association’s (BASMAA) Start at the Source Design Guidance Manual for Stormwater Quality Protection (BASMAA, 1999). The County shall also comply with Santa Clara County’s Storm Water Drainage Manual, and South Santa Clara County and Martin’s Small MS4 NPDES permit and SWMP requirements in order to minimize increases in stormwater discharge associated with project and program level components located within the CCRWQCB jurisdiction.

The County shall prepare an erosion control plan specifying measures to prevent erosion/sedimentation problems during project construction. Include a map of the project site delineating where erosion control measures will be applied. Include the following minimum criteria:

- Construction equipment shall not be operated in flowing water, except as may be necessary to construct crossings or barriers.

- Where working areas are adjacent to or encroach on live streams, barriers shall be constructed that are adequate to prevent the discharge of turbid water in excess of specified limits.

- Material from construction work shall not be deposited where it could be eroded and carried to the stream by surface runoff or high stream flows.

- All permanent roads shall be surfaced with materials sufficient to maintain a stable road surface.

- All disturbed soil and fill slopes shall be stabilized in an appropriate manner.

- Surface drainage facilities shall be designed to transport runoff in a nonerosive manner.

- Riparian vegetation shall be removed only when absolutely necessary.

- There shall be no discharge of petroleum products, cement washings, or other construction materials.
3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

- Erosion control measures shall be in place prior to dam removal and maintained in good repair.

- Stream diversion structures shall be designed to preclude accumulation of sediment. If this is not feasible, an operation plan shall be developed to prevent adverse downstream effects from sediment discharges.

- Erosion control measures shall be inspected daily during dam removal and monthly following removal, and repaired as required.

- Implement stormwater management measures to reduce nonpoint-source pollution discharge. This could include measures such as oil/sediment containment or street sweeping.

- Remove hazardous waste materials generated during implementation of the project from the project site immediately.

- Dispose of volatile wastes and oils in approved containers for removal from the project site to avoid contamination of soils, drainages, and watercourses. Keep absorbent pads, booms, and other materials on site during projects that use heavy equipment to contain oil, hydraulic fluid, solvents, and hazardous materials spills.

Impact Significance After Mitigation: Less Than Significant.

Impact Hydrology, Floodplains and Water Quality-4: Proposed program-level components, including those resulting in increased impervious surface area, may result in long-term adverse water quality impacts. Less Than Significant with Mitigation Measures.

As previously noted, program-level components may also significantly increase surface water run-off due to construction of an events pavilion, satellite ranger station, bicycle park, golf course, and paved parking lots.

Program-Level Components

Program-level equestrian facility elements and trail use potentially considered in the Master Plan document may contribute to an increase in water quality contamination in Park waterways and the reservoir. Equestrian facilities result in high levels of fecal coliforms and nitrate concentrations in surface runoff from the manure. Impacts to water quality of Coyote Lake, which is classified as an emergency domestic water supply, would not result from equestrian use as no equestrian use is allowed on trails adjacent to the lake. Multi-use trails would be horizontally separated from the lake by a minimum of 500 feet, and vertically separated by a minimum of 50 feet. Additionally, the trail would be located upslope of the lakeside road, and no direct access would be available from the trail to the lake shore. Preventing equine trails from traversing directly through waterways will also decrease potential impacts.

The equestrian/agricultural education center may include an arena, animal showing areas, stalls and barns that would be used for events, as well as facilities to support the ongoing grazing
program throughout the park. Concentration of livestock will require appropriate methods for disposal of animal waste.

The Golf Course element of the Master Plan also creates potential issues for water quality impacts. Pesticides, herbicides and fertilizers contaminate runoff to receiving waters and often also to groundwater. As discussed previously, existing groundwater quality problems in the region include elevated concentrations of nitrate and perchlorate. Nitrogen is the primary component of turf grass fertilizers. Excessive application of fertilizers in association with golf course construction and maintenance may result in increased nitrate concentrations in underlying groundwater. Additionally, reliance on local groundwater resources to supply water demands associated with golf course irrigation could also alter groundwater flow patterns by pumping groundwater at a rate that alters groundwater flow patterns in the source aquifer. Altering existing groundwater flow patterns may have several effects, including potentially influencing migration of perchlorate, and other constituents, in multiple groundwater aquifers. However, Santa Clara County Valley Water District and the City of Gilroy Municipal Water Treatment Facility have been identified during preliminary planning as potential suppliers of recycled water to meet golf course irrigation needs (Santa Clara County Parks and Recreation, SOURCE: pers. comm., Sue Tippetts (SCVWD) and Jim Gasser (SCRWA)).

As previously noted, program-level components may also significantly increase surface water run-off due to construction of an events pavilion, satellite ranger station, bicycle park, golf course, and paved parking lots.

Mitigation Measure Hydrology, Floodplains and Water Quality-4a: Implement Mitigation Measures Hydrology, Floodplains and Water Quality-3a and 3b. In addition, the County shall prepare and develop design specifications for a Storm Water Design Plan (SWDP) to significantly reduce and where feasible, eliminate, the off-site migration of sediments and storm water pollutants associated with storm water runoff generated from program level components, including as parking lots, the equestrian center and golf course. The SWDP shall incorporate appropriate source control and treatment measures recommended in the California Storm Water Best Management Practice Handbook for New Development and Redevelopment (CASQA, 2003b), Santa Clara County’s Storm Water Drainage Manual, and Non-Point Source Ordinance, and standards developed South Santa Clara County’s SWMP and Small MS4 NPDES permit for program level components located within CCRWQCB jurisdiction or SCVURPPP and Santa Clara Countywide NPDES permit, including new C.3 regulations, for components located within SFRWQCB Jurisdiction. The SWDP shall adhere to the County’s Integrated Pest Management and Pesticide Use Ordinance (County of Santa Clara, 2002) and develop a turf grass management plan for the golf course as a component of the SWDP to minimize the amount of fertilizer and other chemicals that are used resulting in lower levels of pollutants to surface and ground water, with the goal of reducing potential discharge of such chemicals to local waterways. Manure management plans shall also be developed for the equestrian staging and camping areas, and the equestrian/agricultural education center as part of the SWDP.

Mitigation Measure Hydrology, Floodplains and Water Quality-4b: Golf course design shall minimize turf grass coverage to the maximum extent possible. Water supply for golf
course construction, operation, and maintenance shall minimize potential reliance on local groundwater sources.

Santa Clara Valley Water District requires permit submittal and approval prior to installation of a groundwater well. Permit requirements include specification of well location, construction, well type and intended water usage, and anticipated groundwater pumping rates. Finalized golf course design that incorporated local groundwater resources would therefore be subject to review and approval of proposed well location(s) and groundwater pumping rates by the Santa Clara Valley Water District. Compliance with Santa Clara Valley District permit requirements would therefore minimize potential influences on perchlorate plume migration in the region.

Impact Significance After Mitigation: Less Than Significant.

REFERENCES – Hydrology, Floodplains and Water Quality


ATC Environmental Inc., Results of a Subsurface Investigation Conducted at the Bear Ranch, 2045 San Martin Avenue, San Martin, February 7, 1997.


Central Coast Regional Water Quality Control Board, Water Quality Control Plan, September 8, 1994.


