

B.3 Environmental Analysis and Mitigation

B.3.1 Aesthetics

AESTHETICS Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.1.1 Setting

Visual Inventory Methodology

A visual setting is described in terms of the existing visual character and visual quality of the viewed. Existing visual character is descriptive and refers to formal attributes of the visual setting. Visual quality is a judgment as to a landscape's attractiveness, as determined by attributes broadly recognized as being valued and preferred by most viewers.

The existing landscape setting and its viewers are characterized in terms of their overall *visual sensitivity*. The components of visual sensitivity are:

- existing *visual quality* of the setting;
- anticipated level of *viewer concern/sensitivity*, based primarily on scenic expectations associated with viewer activities as well as number of viewers; and
- *viewer exposure* to the project, including considerations of existing screening, view duration, distance, etc.

In general, evaluations of overall sensitivity emphasize existing scenic quality and potential viewer concern, which may then be moderated by limitations in viewer exposure.

Key Viewpoints (KVPs) are identified to represent the most critical viewing locations and the viewer groups likely to be affected by a project. Assessments of impact are determined from these KVPs. In the impact analysis, overall visual sensitivity is considered in combination with the level of visual change introduced by a project, as seen from a KVP, to arrive at preliminary findings of potential project impact significance. In this analysis impacts to foreseeable future viewers are also analyzed to support the evaluation of cumulative impacts.

Existing Landscape Setting and Viewer Characteristics

Regional Context. The project site is situated near the confluence of three major landscape types, the San Joaquin Delta to the north and northeast; the Diablo Range to the south, and the San Joaquin Valley

to the east. The site is approximately 5 miles south of the San Joaquin River near its confluence with the Sacramento River. The project area represents the edge of existing urban development of the Cities of Antioch and Brentwood, in one of the most rapidly urbanizing portions of the San Francisco Bay Area in northeastern Contra Costa County.

The larger site setting, including most of the City of Antioch south of Highway 4, is a landscape of low hills at the transition between lowlands surrounding San Pablo Bay to the north, and the higher hills of the Diablo Range to the south. The immediate project visual setting can be characterized as a single landscape unit consisting of the valley of Sand Creek, a narrow east-west trending valley of open, level grassland/agricultural land defined by undeveloped low rolling hills to the south, and suburban development to the north and east.

Notable visual features of the viewshed include Mt. Diablo, a regional landmark that dominates views toward the southwest at a distance of approximately 10 miles; and lower, undeveloped and scenic slopes and ridges of Lone Tree Valley and the Black Diamond Mine Regional Preserve to the west. Views of the San Joaquin River and Delta to the north are not visible from the site vicinity due to intervening hills.

Project Viewshed and Key Viewpoints. Figure B.3-1 provides a computer-generated map of the project viewshed. This is the area within which the project would be visible. The viewshed is limited on the north by existing development and on the south by topography. In general, the area of concern with regard to visual impacts is limited to a distance of roughly 0.5 miles from the project. At greater distances in the viewshed, the project would appear visually very subordinate to other elements within the view and would be less likely to cause visual impacts.

Potential sensitive receptors within the viewshed include a single-family dwelling located approximately 2,400 feet to the northeast along Heidorn Ranch Road; a new Kaiser Medical Center located approximately 4,400 feet to the northwest along Deer Valley Road; a residential neighborhood approximately 2,700 feet to the north, and the City of Antioch's Chaparral Park near Candlewood Way and Stagecoach Way at the southern edge of this development. Other potential receptors include motorists on roadways within the viewshed, including Heidorn Ranch Road at a distance of roughly 0.5 miles to the east; Deer Valley Road at a distance of between 0.75 and 1.0 miles to the west; and the Highway 4 Bypass, between 0.75 and 1.0 miles to the east. Views from other roadways are either too distant to be affected by the Proposed Project, or are substantially obstructed by intervening development or topography.

Project Site. Figure B.3-2 shows the existing views of the project setting. The proposed substation site and vicinity consist of low hills and level terrain currently in undeveloped grassland or tilled agricultural land within the Sand Creek valley. The substation site adjoins the existing transmission line corridor for the Contra Costa-Cayetano 230 kV transmission line, which runs northwest-to-southeast on the adjoining hill slopes southwest of the site. Sparse, relatively low oak canopies and some taller walnut and eucalyptus trees are visible approximately 200 feet north of the site.

Key Viewpoints (KVPs). Ten Key Viewpoints (KVPs) are identified below, representing key potentially sensitive viewer groups. Figures B.3-3a, B.3-3b, and B.3-3c show the existing views from these 10 KVPs.

Existing Residential Viewers North of the Site. KVPs 1 and 2: Chaparral Park, Hillcrest Avenue. These two viewpoints are representative of views from approximately 75 residences with south-facing views from roughly 0.5 miles north of the project site. Chaparral Park is a local neighborhood park receiving moderate levels of use, and provides unobstructed views of the site.

Figure B.3-1. Project Viewshed and Key Viewpoints
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Figure B.3-2. Existing Views of Project Setting
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Figure B.3-3a. Existing Views from Key Viewpoints
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Figure B.3-3b. Existing Views from Key Viewpoints
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Figure B.3-3c. Existing Views from Key Viewpoints
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- **Visual Quality:** Moderate to high. Views toward the site are of the relatively intact, undeveloped rural agriculture and grassland landscape of Sand Creek valley, with views of Mt. Diablo and hills of Lone Tree Valley and Black Diamond Mine Regional Preserve farther to the west.
- **Viewer Concern:** Viewer sensitivity for both residential and park uses, accounting for the moderate number of potentially affected viewers, is moderate to high.
- **Viewer Exposure:** Views from these locations is currently unobstructed. At this distance (approximately 0.5 miles), the project would have the potential to be visually co-dominant with other features in the view
- **Overall Visual Sensitivity Level:** Moderate to high.

Viewers from Existing Roadways:

KVP 3: Heidorn Ranch Road. This view is looking southwest toward the site from the nearest portion of Heidorn Ranch Road, which is the nearest existing roadway view of the project site. A small industrial facility is located at the southern terminus of Heidorn Ranch Road, at its intersection with Sand Creek Road. This is less than 0.5 miles east of the site. No other receptors are located on this portion of the road, and there are no other destinations for motorists, so traffic is limited.

- **Visual Quality:** High. This view is typical of views toward the site from its northeast quadrant. These views represent a scenic view corridor to Mt. Diablo in the background and hills and ridges of Lone Tree Valley and Black Diamond Mine Regional Preserve at middle-ground and background distance.
- **Viewer Concern:** Low. Viewer numbers in this dead-end portion of road are very low, and those present are primarily engaged in work activities.
- **Viewer Exposure:** High. Exposure is unimpeded and at foreground distance (approximately 0.5 miles).
- **Overall Visual Sensitivity Level:** Low to Moderate.

KVP 4: Highway 4 Bypass. This viewpoint is from the Highway 4 Bypass, located between 0.75 and 1.0 miles east of the Proposed Project site.

- **Visual Quality:** Moderate to high. Views toward the site represent a scenic view corridor to Mt. Diablo.
- **Viewer Concern:** Moderate. Existing traffic is moderately high.
- **Viewer Exposure:** As depicted in Figure B.3-1, these portions of the Highway 4 Bypass lie within the project viewshed at near-middle ground distances (roughly 0.75 to 1.0 miles). While the project would be visible, however, at these distances the project would appear subordinate in scale and dominance. Exposure is thus moderate.
- **Overall Visual Sensitivity Level:** Moderate.

KVPs 5: Deer Valley Road. This view is from Deer Valley Road, approximately 0.75 to 1.0 miles west of the project site. Receptors in the vicinity of this KVP include moderate to high numbers of motorists and workers at the Kaiser Medical Facility. A small number of rural residences south of the Kaiser facility are largely outside of the viewshed, although upper portions of taller substation facility components might be faintly visible.

- **Visual Quality:** Moderate to high. Views are of relatively intact, undeveloped rural agriculture/grassland landscape, including the moderately vivid riparian canopy of Sand Creek.
- **Viewer Concern:** Existing traffic on this roadway is moderate to high. Sensitivity is moderate.
- **Viewer Exposure:** Portions of Deer Valley Road lie within the project viewshed at near-middle ground distances (roughly 0.75 to 1.0 miles), although rural residences that appear within the mapped viewshed would actually have little to no exposure to the project. While the project would be visible to high numbers of motorists and Kaiser employees, at these distances the project would appear subordinate in scale and dominance. Exposure is thus low to moderate.
- **Overall Visual Sensitivity Level:** Moderate.

Existing Residential Viewers South of the Site (City of Brentwood):

KVP 6: Astor Court. This view, representing the nearest residential viewers in the City of Brentwood to the east and southeast, illustrates the fact that most of this area lies outside of the project viewshed due to intervening hills. Impacts in this area would be insignificant from this portion of the viewshed.

Future Foreground Viewers. In addition to KVPs from existing view points around the Proposed Project, KVPs were established closer to the project site, from where future residents would be located.

KVP 7: View from Future Sand Creek Road (Looking Southeast). KVP 7 depicts the view of the project site from roughly 500 feet northwest of the site, north of Sand Creek on future Sand Creek Road, a planned east-west arterial street. Future land use for this portion of the Sand Creek Focus Area of the City of Antioch General Plan is described as low density residential, similar to that currently existing to the north. This viewpoint is also representative of views from a possible future recreational trail along Sand Creek.

- **Visual Quality:** Moderate to high, similar to KVPs 1 and 2 farther to the north. Views toward the site are of relatively intact, undeveloped rural grassland landscape, with views of Mt. Diablo and hills of Deer Valley and Black Diamond Mine Regional Preserve within view farther to the west.
- **Viewer Concern:** Future viewer sensitivity could be moderate to high. Relatively high numbers of viewers would be anticipated on Sand Creek Road. Anticipated residential viewers would typically have a moderately high level of visual sensitivity. Although numbers of such viewers cannot be predicted, they could likely be similar to the moderate existing number of residential viewers. Smaller numbers of recreational viewers on the Sand Creek trail would have high sensitivity.
- **Viewer Exposure:** Moderate to High. Views from this quadrant are largely unimpeded and unfiltered, except for sporadic tree canopies of Sand Creek. In the future, filtering from structures and landscaping would be anticipated, reducing the overall area and number of potential viewers. Views of concern, including those from Sand Creek, would be at very short distances.
- **Overall Visual Sensitivity Level:** Potentially moderate to high.

KVP 8: View from Future Sand Creek Road (Looking Southwest). KVP 8 depicts the view of the project site from a point approximately 500 feet northeast of the site, just north of Sand Creek. Future land use for this portion of the Sand Creek Focus Area of the City of Antioch General Plan (quadrant northeast of the project site) is described as Business Park north of the creek, and Open Space/Senior Housing south of the creek. This viewpoint is also representative of views from a planned future recreational trail along Sand Creek.

- **Visual Quality:** Moderate to high, as described under KVPs 1 and 2, above, except that views toward the site include views of Mt. Diablo and hills of Lone Tree Valley and Black Diamond Mine Regional Preserve directly within view in the direction of the project site.
- **Viewer Concern:** Future viewer sensitivity could be moderate to high. Visual sensitivity of business park viewers would likely be lower than for residents. Open space uses and location of senior housing south of the creek cannot be known currently. However these uses, and users of the planned future Sand Creek trail, could potentially have moderately high visual sensitivity. Sand Creek trail users would have high sensitivity.
- **Viewer Exposure:** Moderate to High. Views from this quadrant are largely unimpeded and unfiltered, except for sporadic tree canopies of Sand Creek. In the future, filtering from structures and landscaping would be anticipated, reducing the area and number of potential viewers. Views of concern, including those from Sand Creek, would be at very short distances.
- **Overall Visual Sensitivity Level:** Potentially moderate to high.

KVPs 9 and 10: Views from Northbound Hillcrest Avenue Extension (Looking North and Northwest). KVPs 9 and 10 show the narrow valley and slopes to the southeast of the project site, which would include the future Hillcrest Avenue Extension and Open Space/Senior Housing as described in the unadopted Sand Creek Focus Area portion of the City of Antioch General Plan.

KVP 9 represents a worst-case close-up view by northbound motorists on future Hillcrest Extension in the southeast project quadrant. KVP 10 represents a more-distant view of motorists traveling north to the site.

- **Visual Quality:** Moderate to high, as described under KVPs 1 and 2, above. Scenic views of Mt. Diablo and Black Diamond Mines Regional Preserve are largely screened in this area by intervening low hills southwest of the project site.
- **Viewer Concern:** Moderate to high, typical of residential receptors and recreational users of open space, and high anticipated numbers of motorists.
- **Viewer Exposure:** High. Views in this area are currently unimpeded and at very short distance.
- **Overall Visual Sensitivity Level:** Potentially moderate to high.

No viewers are anticipated in the project's southwest quadrant, which is occupied by the existing transmission line right-of-way.

B.3.1.2 Applicable Regulations, Plans, and Standards

Federal and State Standards

No applicable State or federal visual standards were identified. No eligible State scenic highways are located within the project viewshed.

City of Antioch General Plan

Community Image and Design Element:

5.4.1 Community Design Objective

Preserve and enhance Antioch's visual character, including its natural features, hillsides, distinct districts, and entries and major roadways by carrying a community theme into the design of new developments and public facilities.

5.4.2 General Design Policies

c. Maintain view corridors from public spaces to natural ridgelines and landmarks, such as Mount Diablo and distant hills, local ridgelines, the San Joaquin River, and other water bodies.

- Recognizing that new development will inevitably result in some loss of existing views, as part of the City's review of development and commercial and industrial landscape plans, minimize the loss of views from public spaces.

- Important view corridors to be protected include Somersville Road, Lone Tree Way, Hillcrest Avenue, SR 4, SR 160, James Donlon Boulevard, Deer Valley Road, and Empire Mine Road.

h. Wherever feasible, existing above-ground utility lines should be placed underground.

j. Within multi-family, commercial, office and business parks, and industrial developments, screen enclosures, loading areas, mechanical equipment, and outdoor storage areas from view from public streets, and, as appropriate, from other public views.

- Service areas, including storage, special equipment, outdoor work areas, and loading areas, should be screened from public view with landscaping *and* architectural elements.

5.4.10 Industrial Development

- Screen utility equipment and communication devices so that the project will appear free of all such devices.

c. Where long, linear walls or fences are needed, a combination of wall/fence along a landscape berm is to be encouraged.

e. Service areas should be simple and efficient, and not interfere visually or physically with other building operations. Service areas should not be visible from public roadways and highways

5.4.12 Development Transitions and Buffering Policies

c. Provide appropriate buffering to separate residential and non-residential uses, using one or more of the following techniques as appropriate.

- Increase setbacks along roadways and common property lines between residential/non-residential uses.

- Provide a heavily landscaped screen along the roadway or common property line separating residential and non-residential use.

j. Fencing and walls should incorporate landscape elements or changes in materials, color, or texture in order to prevent graffiti, undue glare, heat, or reflecting, or aesthetic inconsistencies.

5.4.15 Landscaping

b. The use of water efficient landscape materials and the installation of appropriate irrigation systems are required. This does not mean that the landscape is brown, displays a “desert” theme, or is devoid of plants. However, it does mean that a well-designed landscape shall be provided which produces the same lush appearance as other non-water efficient landscapes, but requires less water and maintenance.

Where consistent with the site’s design theme, native and naturalized species should be featured in the site's landscape design.

B.3.1.3 Environmental Impacts and Mitigation Measures

Visual Analysis Significance Criteria

Appendix G of the CEQA Guidelines identifies the following circumstances that can lead to a determination of a significant visual impact:

- The project has a substantial adverse effect on a scenic vista;
- The project substantially damages scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;
- The project substantially degrades the existing visual character or quality of the site and its surroundings;
- The project creates a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Visual Impact Assessment Methodology

The determination of which changes cross a threshold of “substantial adverse effect” or degradation is based upon the criteria described in the methodology summary (below), and in Table B.3.1-1, Visual Impact Significance Criteria.

Table B.3.1-1. Visual Impact Significance Criteria

Overall Visual Change	Overall Visual Sensitivity				
	High	Moderate to High	Moderate	Low to Moderate	Low
Very Strong	Significant	Significant, May Be Mitigable	Potentially Significant, Mitigable	Less Than Significant	Less Than Significant
Strong	Significant, May Be Mitigable	Potentially Significant, Mitigable	Potentially Significant, Mitigable	Less Than Significant	Insignificant
Moderate	Potentially Significant, Mitigable	Potentially Significant, Mitigable	Less Than Significant	Insignificant	Insignificant
Weak	Less than Significant	Less than Significant	Insignificant	Insignificant	Insignificant
Negligible	Less than Significant	Insignificant	Insignificant	Insignificant	Insignificant

Following professionally accepted practice in visual analysis, visual impacts are defined as a consequence of three primary factors: (a) the existing scenic quality of an area; (b) the level of viewer concern with visual change, and the degree of their visual exposure to the project; and (c) the level of actual visual change caused by the project as seen by a given viewer group. The first two were described above and summarized as overall visual sensitivity for each KVP. The last, *visual change*, describes the degree of actual visible change expected as a result of the project. The fundamental elements of visual change include *visual contrast*, *visual dominance*, and *scenic view obstruction*. Visual contrast refers to formal contrast of form, line, color or texture of the project against the existing landscape. Visual dominance refers to the degree to which this contrast would demand the attention of casual viewers and reflects various considerations including contrast, spatial and orientation factors, and visual magnitude. Scenic view obstruction refers to the degree to which the project would block or intrude upon scenic view corridors, particularly those identified in public policies. Overall visual change is rated on a scale of Negligible to Very Strong.

In addition, the project is evaluated for conformance with applicable local plans and policies. Adopted expressions of local public policy pertaining to visual resources are given great weight in determining both visual quality and viewer concern.

In the following analysis, impacts from Key Viewpoints were evaluated based in part on simulations of a preliminary substation design and site location prepared by PG&E in 2005. At the request of the City of Antioch, the project site and design were modified: the project site was moved slightly to the west to avoid conflicting with the planned extension of Hillcrest Avenue and bring the substation adjacent to the existing transmission right-of-way; the precise layout and berm design were modified; a lattice transmission tower previously proposed on the hillside above the substation was eliminated and replaced with one inside the existing transmission right-of-way. These changes eliminated the potential project visual effects of the stand-alone tower on the slope and allowed PG&E to collocate the substation and the existing line. For each Key Viewpoint, the project as proposed would appear of similar scale, and would be viewed at essentially the same distance. Visual contrast, dominance, and magnitude would thus remain essentially the same as depicted in the preliminary simulations. Consequently, the simulations of the preliminary project design have been used as a guide in conducting the impact analysis. Those original simulations are reproduced in Appendix 3, Preliminary Visual Simulations.

Cumulative Impacts

The relationship of the Proposed Project to existing sensitive receptors, who are few in number and relatively distant, is such that few impacts would be anticipated to these existing viewers as a result of the project. Rather, the principal anticipated impacts of the project would be more likely to occur in relation to other reasonably foreseeable future projects under build-out, as described in the City of Antioch General Plan. In this instance the discussion of such cumulative impacts is included here because they represent the principal impacts of concern. Furthermore, much of this anticipated future development is reasonably well understood and many key elements, such as the Hillcrest Avenue extension and some planned nearby residential development, are both known and imminent.

Project Visual Description

The Proposed Project includes a proposed electric substation site, a new loop segment of an existing 230 kV transmission line, and a new temporary asphalt road and bridge over Sand Creek. The proposed substation would be situated on 5.1 acres of flat to sloping rural land in the City of Antioch approximately 100 feet south of Sand Creek. Southwest of the site, a hill rises to an elevation of approximately 100 to

150 feet above the site. The proposed substation site is approximately one mile south of the intersection of Lone Tree Way and Hillcrest Avenue, and approximately 0.4 miles west of the intersection of the nearest paved roads, Heidorn Ranch Road and Sand Creek Road. As shown in Figure B.1-2 of the Project Description, the western boundary of the site would be shared with the right-of-way for the existing Contra Costa-Cayetano 230 kV transmission line, where the new substation would connect to the existing line.

The Proposed Project consists of:

- a new, three-bank 230/21 kV distribution substation;
- a new transmission tower in the existing ROW and adjacent to the substation with approximately 400 feet of loop circuits;
- approximately 400 feet of loop circuits from the new tower to the dead-end structures located in the substation;
- six to nine distribution circuits (at ultimate build-out) as a combination of overhead conductors and underground cable in conduit; and
- a temporary bridge and temporary asphalt access road to the substation from the ending of existing paved roads (Heidorn Ranch Road and Sand Creek Road).

Delta Distribution Substation. The proposed substation would occupy approximately 5.1 acres with a permanent substation footprint (fenced area) of approximately 3.5 acres. The 230/21 kV substation would have three 45 MVA transformers with low-profile bus bar equipment to reduce potential aesthetic effects. The substation would include steel bus support racks, high voltage breakers, power transformers, and switchgears. The major equipment would include the following:

The tallest element of the substation would be approximately 50-foot-tall dead-end structures supporting the 230 kV looped lines, and similar future dead-end structures that would support lines from the ring bus to the required 230 kV line and 230/21 kV power transformer. A steel pole digital microwave tower approximately 40 feet tall, with a microwave dish 6 feet in diameter set on top would also be visually prominent.

Three 21 kV switchgears would be located within outdoor enclosures for weather protection. The initial 21 kV switchgear enclosure would be approximately 67 feet by 18 feet and 12 feet high. The other two future 21 kV switchgear enclosures would be approximately 44 feet by 17 feet and 12 feet high. The switchgear enclosure would be covered in steel sheeting with a sloped roof. These structures and all the equipment in the substation would be neutral gray in color. All structures would be painted or finished with a non-reflective treatment that would minimize contrast and blend with the predominantly beige-colored hillside backdrop.

The substation would have three 45-MVA transformers with two to three distribution circuits per transformer. These would be 23 feet by 16 feet by 26 feet tall.

For visual screening purposes, an earthen berm 10 to ~~12~~¹⁵ feet in height would be constructed on the north, west, and east sides of the substation. This would be landscaped. PG&E expects to use landscaping appropriate for future adjacent land uses. For security purposes, a chain link fence would be constructed around the substation pad within the landscape berm. The proposed berm and landscaping plan are depicted in Figure B.1-9 of the Project Description.

PG&E proposes to design security and exterior lighting features to minimize visual impact. Lighting for the substation would consist of sodium vapor lamps, and exterior lighting would include the use of non-glare light bulbs. Task lighting will be a 10-foot-high, tapered pole mounted on steel posts. Lighting fixtures would be located and designed to avoid casting light or glare toward off-site locations. The light poles would be 10 feet tall, hot-dipped, galvanized steel posts. These poles would be erected at each corner of the substation. Substation outdoor lighting would be controlled by photocell that would automatically turn on the lights at night and turn them off during the day.

Transmission Tower and Loop Circuits. One new 120-foot-tall lattice tower with loop arms similar to those currently adjoining the Proposed Project site would be installed within the existing transmission line ROW, approximately 380 feet north of an existing tower on the slope of the hill south of the proposed substation site. The new tower would be approximately 200 feet west-southwest of the proposed substation, downslope of the existing towers.

Distribution Circuits. Initially, two distribution circuits would carry the 21 kV electric service from the proposed substation to end-users. Both of these would be primarily underground, preceded by a temporary 0.5-mile overhead line on 50-foot-tall wood poles with an average spacing of 225 feet. The distribution poles would be along public roads and rights-of-way, until they reach the existing surrounding distribution system. After the City of Antioch extends the four-lane Hillcrest Avenue past the east side of the substation, the temporary overhead distribution lines would be placed underground, and all new distribution line extensions would be constructed underground. At the present rate of growth in electric demand, one of seven subsequent distribution circuits would be installed roughly every other year.

Access Road and Bridge. The project would include a paved temporary access road, necessary for connecting the substation site to the southern end of Heidorn Ranch Road, at Sand Creek Road. PG&E would construct the access road with a paved surface width of 18 feet plus two 2-foot shoulders on either side. Disturbed area beyond the road could extend up to 10 feet further, and include drainage swales. The easement width would likely be 50 feet, and its total length would be about 3,050 feet. The first 1,000 feet of the proposed road from Heidorn Ranch Road would coincide with an existing dirt road that crosses Sand Creek. The access road would then diverge from the dirt road and turn west to the substation site. Directly east of the proposed substation site, PG&E would provide a temporary construction parking area (20 feet by 100 feet) for all construction personnel.

A temporary bridge would provide access across Sand Creek. The existing dirt road crosses Sand Creek approximately 300 feet from the end of Heidorn Ranch Road over a 72-inch galvanized-steel culvert.

Current plans of the City of Antioch indicate that Hillcrest Avenue will eventually be extended southward to connect with Balfour Road. This new road extension would run along the eastern boundary of the proposed substation site. After the extension is complete, PG&E proposes to connect the substation to Hillcrest Avenue via a curb cut entering the southbound lanes. After that time, access to the substation would occur via Hillcrest Avenue. With Hillcrest Avenue in place, PG&E would remove the temporary access road from Heidorn Ranch Road to the final Hillcrest Avenue alignment and the bridge unless the property owner requests to retain it. Figures B.1-6 and B.1-7 (in Section B.1.10.4 above) show the conceptual design for the bridge and its location.

Landscaping. PG&E's proposes to landscape the substation site to screen it from future motorists on the planned Hillcrest Avenue extension, and elsewhere around the site. The proposed landscape plan would include trees and shrubs lining the northwestern edge of the site on 10-foot berms on the northern edge and on 10- to ~~12~~15-foot berms on the eastern edge. The aesthetic landscaping would be outside the

chain link security fence that would be constructed around the substation's operational facilities. The landscaping plan would be developed by PG&E and submitted for review and approval by the City of Antioch. A conceptual landscape plan (Gates and Associates, 2006) is shown on Figure B.1-9 in the Project Description.

Construction Access. Construction access would be by way of the temporary access road described above. It would be reached by way of Heirdorn Ranch Road, which intersects with Lone Tree Way. Principal roads in the area include State Route Highway 4 (SR 4), Hillcrest Avenue, Deer Valley Road, Lone Tree Way, and Heidorn Ranch Road.

Areas for vehicle parking and laydown and staging of construction materials and equipment would be within the substation site and the existing adjacent 200-foot transmission line right-of-way. Additional staging may occur at the PG&E Antioch Service Center, on Hillcrest Avenue north of Highway 4. In addition to these areas, an area (~~100-200~~ feet by 200 feet) would be staked in the field to identify the construction work limits around the proposed tower site.

Project Impacts

a. Would the project have a substantial adverse effect on a scenic vista?

LESS THAN SIGNIFICANT. Scenic views of Mt. Diablo are in the general vicinity of the project. This view corridor could potentially be affected by foreground views of the project from viewpoints in the quadrant northeast of the project site, north of Sand Creek. However, where such views could potentially be affected by the project, the project would be seen against the backdrop of the adjoining low hill. Except for the proposed new transmission tower, no project features would approach the height of the existing hill. Thus, in most views that include both Mt. Diablo and the project, the project features would have no additional obstructing effect. For example, as depicted in Appendix 3 (Figures Ap.3-2a and Ap.3-2b), the proposed new transmission tower could intrude into views of Mt. Diablo. However, as seen in the simulation, in these cases the extent to which the new tower would affect these views would be very minor compared to the far more dominant existing transmission towers. The qualitative change in these view corridors would thus be minor. There are no other notable scenic view corridors in the project vicinity; impacts to scenic vistas would thus be minor and less than significant.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

NO IMPACT. The Proposed Project would not damage any existing scenic resources. There are no trees, rock formations, historic structures or other striking visual features on the proposed site or in its immediate vicinity. The site is not visible from any designated or eligible State scenic highway.

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. With recommended mitigation measures, the Proposed Project would not substantially degrade the existing visual character or quality of the site and its surroundings, as described in detail below.

Potential impacts of the Proposed Project on the existing visual character and quality of its setting are analyzed below from each identified KVP, representing the key sensitive viewing groups/locations potentially affected by the project.

Potential Impacts to Existing Residential Viewers North of the Site

KVP 1: Chaparral Park. Appendix 3 (Figures Ap.3-1a and Ap.3-1b) depicts a simulated view of the preliminary substation plan as seen from Chaparral Park (KVP 1), and represents views from both the park and the approximately 75 existing residences in the nearest residential subdivision at a similar distances of between roughly 0.5 and 0.75 miles north of the project site.

The visual simulation in Appendix 3 is of an earlier, preliminary project layout. However, the preliminary layout is similar in its overall visual effects as the proposed layout: the depicted layout is of the same overall size, with the same project components, and similar landscaped berm as the Proposed Project, viewed at essentially the same distance. The Proposed Project, however, would be located slightly to the west of this simulated view; and the Proposed Project would eliminate the lattice transmission tower on the open hillside by locating its new tower within the existing transmission right-of-way.

These view corridors to the site exist only at the south-facing edge of the development due to the open character of the intervening undeveloped, level terrain; other views from within the residential neighborhood would be screened by other homes and landscaping. Similarly, planned future development in the area south of these viewpoints would eventually screen existing views, and views to the project site from the north would then be visible only from those new locations nearest to the site.

As shown in Appendix 3, Figure Ap.3-1b, at these distances the project and its berm for screening would appear visually subordinate to the somewhat more prominent industrial character of the existing transmission towers. Existing, intervening oak trees on Sand Creek would combine with the proposed tree screening to obscure many of the substation components. The taller dead-end structures and microwave tower would remain visible above the tree canopies, at least in the near term and contrast in color and form with their background. Their contrast would be reduced somewhat by being seen against the backdrop of nearby hillsides rather than the sky. The 120-foot lattice tower connecting the project to the adjacent transmission line in the simulation would not be as shown. Instead, a new tower would be constructed within the existing transmission corridor, blending with the existing towers and appearing visually subordinate to them. In the context of the overall view, the new tower would be identical in character and visually very subordinate to the numerous existing, more prominent towers of the existing Contra Costa-Cayetano transmission line.

This subordinate level of contrast, in the context of moderate to high viewer concern and exposure of park visitors and residents, would be less than significant, and would decline further within a few years' time with sufficient growth of the screening tree canopy.

Potential Impacts to Viewers from Existing Roadways

KVP 3: Heidorn Ranch Road. KVP 3 represents the nearest view of the project site from an existing roadway, near the southern terminus of Heidorn Ranch Road at a foreground distance of roughly 0.5 miles. (Appendix 3, Figures Ap.3-2a and Ap.3-2b, show the site from KVP 3. Figures Ap.3-4a and Ap.3-4b depict a closer view of the existing conditions and a simulation of the preliminary substation layout. The future extension of Hillcrest Avenue is depicted in Figure Ap.3-4b.) Although the site has been shifted westward slightly, the Proposed Project would appear essentially similar to the preliminary simulated view, as discussed above. As seen in this figure, the view from this location is highly scenic, with Mt. Diablo appearing dominantly in the background. Highly intact slopes of the Black Diamond Mines Regional Preserve are visible in the middle distance, and tree canopies of the Sand Creek riparian corridor and open grassland and agricultural land enhance foreground views. With the proposed screen-

ing depicted in the simulation, taller substation components including the dead-end bus structures and microwave tower would appear above the tree screening canopies, at least in the near term. These features would appear against the background of slopes of the Black Diamond Regional Preserve. At this foreground distance, particularly under morning light conditions, these structures would appear visually co-dominant, presenting moderate contrast in form and color. Their angular industrial character would contrast with the undeveloped setting and scenic background. Uppermost portions of the new transmission tower would intrude to a minor degree into the view of Mt. Diablo, but to a lesser extent than existing towers in the view. The area from which the project would appear in the foreground of views of Mt. Diablo is limited to the quadrant northeast of the project site.

This moderate level of contrast in the context of low to moderate viewer sensitivity would be less than significant, due particularly to the very low numbers of viewers at this location.

KVP 4: Highway 4 Bypass. Views of the site from these viewpoints are from the same quadrant and approximately the same angles as discussed under KVP 3 (Heidorn Ranch Road), above, but at roughly twice the distance (approximately 1 mile). Taller project components would intrude into views of Mt. Diablo and Black Diamond Regional Preserve. However, at these distances, those features would appear visually very subordinate within the view.

This weak level of contrast in the context of moderate viewer sensitivity would be less than significant.

KVP 5: Deer Valley Road. KVP 5 depicts the view eastward to the project site from Deer Valley Road, the nearest road to the west, in the vicinity of the Kaiser Facility at a distance of roughly 0.75 miles. This viewpoint is approximately 0.25 miles more distant from the project site than KVPs 1 and 2. With the proposed berm for screening, the project would appear visually subordinate (weak contrast) within the view. With maturation of landscaping, the substation would become visually very subordinate and inconspicuous from Deer Valley Road.

Weak short-term contrast in the context of moderate viewer sensitivity would be less than significant. This level of impact would decline further with maturation of landscape screening.

Potential Impacts to Existing Residential Viewers South of the Site (City of Brentwood)

KVP 6: Astor Court. This view, representing nearest residential viewers in the City of Brentwood to the east and southeast, illustrates the fact that most of this area lies outside of the project viewshed due to intervening hills. Thus, no impacts would be anticipated from this portion of the viewshed.

Potential Impacts to Future Foreground Residential and Other Viewers

Under land uses described in the Sand Creek Focus Area of the Antioch General Plan, currently undeveloped portions of the project foreground viewshed would be developed as residential, business park, and open space/senior housing uses. Views of the project from these locations, though similar in viewing angle to existing views discussed previously, would have a greater potential for significant impact due to the much closer viewing distances involved.

KVP 7: View from Future Sand Creek Road (NW Quadrant). Figure B.3-4a is a view of the view of the project site from approximately 500 feet to the northwest of the site, just north of Sand Creek. Figure B.3-4b shows a simulation of the proposed substation with the landscaped berm and the new tower in the transmission line ROW. Trees depicted in the foreground of the simulation are suggestive of the view should others undertake additional landscaping associated with development north of Sand

Creek or a trail along Sand Creek. Future land use for this portion of the Sand Creek Focus Area of the City of Antioch General Plan is described as low density residential, similar to that currently existing to the north. The area immediately west of the project site is described as multi-family residential. The viewpoint shown in Figures B.3-4a and B.3-4b is also representative of the view from the vicinity of a possible future recreational trail along Sand Creek.

As depicted in Figure B.3-4b, taller elements of the substation including dead end bus structures and microwave tower, would remain visible above the screening tree canopy, at least in the near term. This would represent a moderate level of contrast at foreground viewing distances, declining to weak, visually subordinate levels in the long term with maturation of the tree plantings.

In the context of moderately high viewer sensitivity on the part of residents, creek trail users, and some motorists in the near foreground of the project, this could represent a significant impact in the short term, declining to less-than-significant levels with maturation of the proposed tree plantings.

KVP 8: View from Future Sand Creek Road (NE Quadrant). Appendix 3 (Figures Ap.3-4a and Ap.3-4b) shows the existing conditions and a simulation of the preliminary substation design from KVP 8, on the future Sand Creek Road looking southwest. It depicts the view from approximately 500 feet to the northeast of the site, just north of Sand Creek, and is essentially the same in visual impact as the final Proposed Project. Future land use for this portion of the Sand Creek Focus Area of the City of Antioch General Plan is described as Business Park north of the creek, and Open Space/Senior Housing south of the creek. Visual sensitivity of business park viewers would likely be lower than for residents. Open space uses and location of senior housing south of the creek cannot be known currently. However these uses, and users of the planned future Sand Creek trail, could potentially have moderately high visual sensitivity.

Potential visual contrast of the project from this viewpoint would be as described previously for KVP 7, i.e., moderate levels of contrast, declining to subordinate levels in the long term with maturation of tree plantings. Similarly, impacts would be potentially significant in the short term, declining to less than significant levels with maturation of the proposed trees. The project would appear in the foreground of views of Mt. Diablo View from most locations in the quadrant northeast of the project. It would not substantially obstruct those views from most locations due to the height of Mt. Diablo, which would remain visible above the project except in views from locations immediately adjacent to the substation.

KVPs 9 and 10: Views from Northbound Hillcrest Avenue Extension and Vicinity (SE Quadrant). Appendix 3 (Figures Ap.3-5a and Ap.3-5b) shows the existing conditions and a simulated view of the preliminary substation design as seen from future northbound Hillcrest Avenue (KVP 9). The final proposed substation site would similarly adjoin the proposed Hillcrest Avenue extension, and appear in the immediate visual foreground of the roadway in a manner essentially similar to this view. The southeast foreground viewshed, under land uses of the Sand Creek Focus Area of the City of Antioch General Plan, is described as Open Space/Senior Housing. Again, although open space uses and locations of senior housing cannot be predicted, these could potentially have moderately high visual sensitivity as recreation-oriented and residential receptors, respectively. Sensitivity of relatively high numbers of motorists on future Hillcrest Avenue extension would be moderate.

Contrast of taller substation elements to motorists in the immediate foreground of the Hillcrest Avenue extension would be strong in the short term, declining to weak levels over time with maturation of the screening tree canopy. This would represent a potentially significant impact in the short term, declining to less than significant with sufficient maturation of the tree screening. Depending on the actual timing

Figure B.3-4a. Existing View from Future Sand Creek Road, Looking Southeast
[CLICK HERE TO VIEW](#)

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Figure B.3-4b. View of Proposed Substation from Future Sand Creek Road, Looking Southeast
[CLICK HERE TO VIEW](#)

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of other construction in relation to construction of the Proposed Project, the period of potential impact could vary substantially. Scenic views to Mt. Diablo as seen by future motorists would be affected only to a very minor degree. Existing view corridors to Mt. Diablo in the southeast vicinity of the project site are currently largely obstructed by the hill west of the site. From most locations the additional increment of view blockage by the project would be insignificant.

Mitigation Measure for Preserving Visual Character

V-1 Landscape screening with sufficiently tall tree species to provide effective long-term screening. To ensure effective long term screening, trees shall include species with sufficient ultimate height with the proposed berm to substantially screen taller substation components, and tree plantings shall be of sufficient density to substantially screen these features consistent with safety, feasibility, and engineering requirements. Landscape screening shall be consistent with a landscaping and maintenance plan developed by PG&E and submitted for review and approval by the City of Antioch. Any dispute that cannot be resolved shall be referred to CPUC staff for timely determination.

With these measures, potential project impacts to anticipated future foreground viewers would be reduced to less than significant levels.

Construction-Phase Impacts

Temporary Access Road. A temporary access road would be constructed from Heidorn Ranch Road to the project site. ~~However, the~~ This road would not be visually prominent from any existing viewpoints. After construction of Hillcrest Avenue extension by the City of Antioch, viewers would have access to the vicinity of the site and to views of the access road. However at that time, the access road would either be removed or transferred to the property owner. If ground disturbances from road construction are restored and revegetated as described under Mitigation Measure V-~~23~~, below, no impact would be anticipated.

Temporary Construction Impacts. Some construction staging could take place within the existing transmission line right-of-way. Because of its elevated position on a hillside overlooking the project site, this right-of-way is visually prominent. If extensive ground disturbance were to take place in this area due to construction staging or other activities, it could result in adverse visual effects that could remain in the long term. Depending upon the extent of such disturbances, these could be potentially significant. If restored and revegetated as described under Mitigation Measure V-2, below, no long-term impact would be anticipated.

Mitigation Measure for Construction-Phase Aesthetics

V-2 Restore and revegetate ground disturbances due to construction staging. All ground disturbances caused by construction, staging, and temporary access road construction shall be restored to original, natural-appearing contours and revegetated at the earliest feasible time.

d. *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

LESS THAN SIGNIFICANT WITH MITIGATION. Lighting would include 10-foot-high tapered steel pole mounted task lighting. According to PG&E's conceptual landscape plan, the substation would be surrounded on three sides by a landscaped earthen berm 10 to 15 feet in height (PG&E, 2006). Consequently,

as long as all lighting is shielded, directed downward, and of minimum brightness necessary for safety, no direct or excessively bright reflective light would be anticipated off-site. To ensure that no light or glare impacts are likely, the following mitigation measure is recommended:

Mitigation Measure for Light and Glare

V-3 Shroud and minimize unnecessary sources of light. New permanent lighting shall be designed and installed such that light bulbs and reflectors are not visible from public viewing areas; lighting does not cause reflected glare; and illumination of the project, the vicinity, and the nighttime sky is minimized. To meet these requirements ~~the project owner~~ PG&E shall ensure that:

- Lighting shall be designed so exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of the lighting shall be such that the luminescence or light source is shielded to prevent light trespass outside the project boundary;
- All lighting shall be of minimum necessary brightness consistent with worker safety;
- Wherever feasible and safe, lighting shall be kept off when not in use.

With these features and the proposed landscape berms, no adverse glare or lighting impacts would be anticipated.

B.3.2 Agricultural Resources

AGRICULTURAL RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. **Would the project:**

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.2.1 Setting

The California Department of Conservation (DOC) established the Farmland Mapping and Monitoring Program (FMMP) in 1982 to assess the location, quantity, and quality of agricultural lands and conversion of these lands to other uses. Every even numbered year, FMMP issues a Farmland Conversion Report. FMMP data are used in elements of some county and city general plans, in environmental documents as a way of assessing project impacts on Prime Farmland and in regional studies on agricultural land conversion, and in assessing impacts of proposed projects.

The U.S. Department of Agriculture, Soils Conservation Service, classifies notable agricultural lands as follows:

- **Prime Farmland:** Land that has the best combination of physical and chemical properties for the production of crops
- **Farmland of Statewide Importance:** Similar to Prime Farmland, but with minor shortcomings (e.g., steeper slopes, inability to hold water)
- **Unique Farmland:** Land of lesser quality soils, but recently used for the production of specific high economic value crops.

Collectively, these valuable agricultural lands are referred to as “Farmland.” The City of Antioch is located in an area of Contra Costa County that has traditionally contained areas of land used for grazing, orchards, fields, and row crops. The 2003 City of Antioch General Plan shows that approximately 928 acres of land remained in agricultural use within city limits at that time. The project site is currently being used for dry-land (non-irrigated) wheat farming, and it currently has no zoning designation. The proposed site and the surrounding land that would be used for the proposed access road and bridge are not under a Williamson Act contract, nor is it classified as Prime or Unique Farmland, or Farmland of Statewide Importance.

B.3.2.2 Environmental Impacts and Mitigation Measures

- a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as Shown on the Maps Prepared Pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to Non-agricultural use?*

NO IMPACT. The proposed substation site would occupy 5.1 acres of land presently used for agriculture (approximately APN 057-050-006-6), and the proposed access road would disturb and use up to an additional two acres. No lands in the vicinity of the Proposed Project are classified Farmland as designated by the Farmland Mapping and Monitoring Program as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, no impact to Farmlands is expected.

- b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?*

NO IMPACT. The site of the Proposed Project does not contain or border lands zoned for agricultural use nor land that is under a Williamson Act. Therefore, the Proposed Project would not conflict with such lands and there would be no impacts to such lands.

- c. Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?*

LESS THAN SIGNIFICANT. The Proposed Project would convert a total of approximately seven acres of agricultural land to non-agricultural use. Approximately 5.1 acres would be for the permanent substation; the balance would be for the temporary road, which may be removed once Hillcrest Road is extended. This represents conversion of less than one percent of the total land in agricultural use within the City of Antioch. As described above, the Proposed Project would not be located on existing Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), and the Proposed Project would not have the potential to affect Farmland or result in its conversion to non-agricultural use. Additionally, as noted in Section B.3.12, Population and Housing, the project would not be growth inducing and would, therefore, not be expected induce or exacerbate offsite agricultural conversion. Therefore, the impact of possible conversion of Farmland would be less than significant.

B.3.3 Air Quality

AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.3.1 Setting

Criteria Pollutants. Air quality is determined by measuring ambient concentrations of criteria pollutants. Air pollutants are those pollutants for which acceptable levels of exposure can be determined and for which standards have been set. The degree of air quality degradation is then compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS). Unique meteorological conditions in California and differences of opinion by medical panels established by the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (U.S. EPA) cause considerable diversity between State and Federal standards currently in effect in California. In general, the CAAQS are more stringent than the corresponding NAAQS. The standards currently in effect in California are shown in Table B.3.3-1.

Table B.3.3-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone	1-hour	0.09 ppm	0.12 ppm
	8-hour	0.070 ppm	0.08 ppm
Respirable Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	150 µg/m ³
	Annual Mean	20 µg/m ³	50 µg/m ³
Fine Particulate Matter (PM _{2.5})	24-hour	—	65 µg/m ³
	Annual Mean	12 µg/m ³	15 µg/m ³
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO ₂)	1-hour	0.25 ppm	—
	Annual Mean	—	0.053 ppm
Sulfur Dioxide (SO ₂)	1-hour	0.25 ppm	—
	24-hour	0.04 ppm	0.14 ppm
	Annual Mean	—	0.03 ppm

Notes: ppm=parts per million; µg/m³= micrograms per cubic meter; "—" =no standard
Source: CARB, 2005.

Attainment Status and Air Quality Plans. The U.S. EPA, California Air Resource Board (CARB), and the local air district classify an area as attainment, unclassified, or nonattainment. The classification depends on whether the monitored ambient air quality data show compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. The Proposed Project site is located within Contra Costa County and comes under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). This portion of the Bay Area is directly up-wind of the relatively more polluted air basins in the Sacramento and San Joaquin Valleys. Table B.3.3-2 summarizes attainment status of the criteria pollutants in the Bay Area with both the federal and state standards.

Table B.3.3-2. Attainment Status for Bay Area Air Quality Management District

Pollutant	Federal Designation	State Designation
Ozone (1-hour)	Not Applicable	Serious Nonattainment
Ozone (8-hour)	Marginal Nonattainment	Not Available
PM ₁₀	Serious Nonattainment	Nonattainment
PM _{2.5}	Attainment	Nonattainment
CO	Attainment	Attainment
NO ₂	Unclassified/Attainment	Unclassified/Attainment
SO ₂	Attainment	Attainment

Source: CARB, 2005. U.S. EPA, 2005.

Rules and Regulations

Bay Area Air Quality Management District. Responsibility for developing regional air quality plans within the project area lies with the BAAQMD. BAAQMD exercises permit authority through its Rules and Regulations by requiring that new stationary sources of emissions secure a permit to construct and a permit to operate through the New Source Review (NSR) program (Regulation 2, Rule 2), which ensures that the new stationary sources would not interfere with progress in attainment of State and national ambient air quality standards. Mobile and portable sources and temporary activities that cause emissions of air contaminants are managed through a range of State and federal programs mentioned below.

- **U.S. EPA/CARB Off-Road Mobile Sources Emission Reduction Program.** The California Clean Air Act mandates that CARB achieve the maximum degree of emission reductions from all off-road mobile sources in order to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. Tier 1 standards for large compression-ignition engines used in off-road mobile sources went into affect in California in 1996.
- **CARB Portable Equipment Registration Program.** This program allows owners or operators of portable engines and associated equipment commonly used for construction or farming to register their units under a statewide portable program that allows them to operate their equipment throughout California without having to obtain individual permits from local air districts.
- **BAAQMD Regulation 2 Rule 1 – General Requirements.** Prohibits any source from causing a public nuisance and defines what equipment is subject to permitting/new source review requirements and exempts portable stationary equipment (e.g., drill rigs) from permitting if they comply with all applicable requirements of the Statewide Portable Equipment Registration Program.
- **BAAQMD Regulation 2 Rule 2 – New Source Review.** This rule requires that a proposed project’s stationary source equipment meet Best Available Control Technology requirements, and requires offsets if emissions are greater than specified offset thresholds.

Additionally, general rules such as **Regulation 6 – Particulate Matter and Visible Emissions** (for dust control) and **Regulation 8, Rule 3 – Architectural Coatings** (for painting of project facilities) would apply to the construction activities. The City of Antioch does not have any additional air pollution control requirements in its Code of Ordinances or General Plan that would be applicable to project activities.

B.3.3.2 Environmental Impacts and Mitigation Measures

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

NO IMPACT. The BAAQMD is the primary agency responsible for managing local air quality and administering other State or federal programs ensuring implementation of the air quality management plan. A project may be inconsistent with the applicable air quality management plan if it results in population and/or employment growth that exceeds the growth estimates included in the applicable air quality plan or if it causes a growth in vehicle-miles traveled that would exceed the rate of population growth (BAAQMD, 1999). The Proposed Project would not, however, create any new full-time or part-time positions of employment. Up to 24 workers would be needed for substation construction, but none of these positions would be permanent. Regional air quality plans anticipate and allow for population growth in the region, which involves construction of a certain amount of new infrastructure. Therefore, the project would not conflict with or obstruct implementation of the applicable air quality plan. No impacts would occur and no mitigation is required.

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

DURING CONSTRUCTION, LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Construction of the Proposed Project would involve activity for about eight months ~~over a 12-month period.~~ During construction, emissions generated at the proposed substation site and along the access road would consist principally of exhaust emissions [e.g., ozone precursors (reactive organic gases or ROG and NOx), CO, and PM₁₀] from heavy-duty diesel and gasoline-powered construction equipment and fugitive particulate matter (dust) from travel on unpaved surfaces and from site earthwork. At the work sites, heavy-duty diesel equipment exhaust would be from numerous rigging, lift, delivery, concrete, and water trucks, diggers, backhoes, cranes, dozers, and graders. Beyond the work sites, exhaust emissions would also be caused by workers commuting to and from the project, trucks hauling equipment, tower segments, and other materials and supplies to the construction sites, dump trucks delivering fill material or hauling away debris, and trucks or equipment used for placing concrete or paving material.

PG&E calculated emissions of NO_x, PM₁₀, CO, ROG, and SO_x from on-site (or off-road) construction equipment exhaust and on-highway crew trucks. Additional minor quantities of emissions would occur from worker commute trips and heavy-duty diesel trucks delivering major project components. Table B.3.3-3 presents the maximum daily emissions for the temporary construction activity.

Table B.3.3-3. Maximum Daily Construction Emissions (lb/day)

	NO _x	PM ₁₀	CO	ROG	SO _x
General Construction Support	1.3	< 0.5	10.9	0.7	< 0.5
Structure Foundation Excavation	89.0	8.1	95.6	9.6	11.3
Structure Delivery and Setup	14.6	1.8	553.2	18.5	0.7
Wire Installation	29.2	2.2	30.0	3.6	2.3
Cleanup and Landscaping	194.9	11.7	92.4	10.6	19.6
Fugitive Dust (Unpaved Surfaces)	---	309.6	---	---	---
Maximum Daily Construction Emissions	328.9	333.4	782.2	43.1	33.9

Source: PG&E, 2005, Deficiency Response #12.

To determine whether a significant impact would occur, the BAAQMD does not emphasize quantifying construction emissions. Instead of comparing construction emissions to quantified thresholds, the BAAQMD recommends implementing feasible control measures to reduce construction impacts from dust to less than significant levels. Feasible control measures would also be appropriate to reduce the impact of equipment exhaust on local and regional air quality and to minimize project effects on nearby downwind regions (i.e., the Sacramento and San Joaquin Valleys). With feasible control measures implemented, emissions during project construction would not have the potential to violate air quality standards or contribute substantially to existing violations.

There are many strategies that can be used to reduce emissions during project construction. Dust control strategies are normally needed to avoid nuisance conditions in areas with nearby sensitive receptors, and other strategies are usually appropriate for managing equipment operation to conserve fuel, avoid nuisance conditions, and reduce emissions. PG&E committed to implementing a range of Best Management Practices (BMPs) for dust control (APM Air-1) and control of vehicle and equipment exhaust (APM Air-2 to Air-4) as part of its APMs (see Project Description, Table B.1-2). The APMs would implement the recommendations set forth by the BAAQMD for feasible control of construction emissions of dust, which would reduce the impact of fugitive dust to a less than significant level. For control of construction equipment exhaust, the BAAQMD gives lead agencies flexibility to identify feasible measures. In other recent analyses conducted by the CPUC, the use of ultra low sulfur diesel and the use of off-road equipment (for equipment over 50 hp) that at a minimum meets U.S. EPA/CARB Tier 1 engine standards is considered to be feasible for mitigation of construction equipment exhaust. With the following mitigation measures, the impact of construction equipment exhaust would be reduced to a less than significant level:

Mitigation Measures for Construction-Phase Air Quality

AQ-1 Use ultra low sulfur fuel. All diesel fueled construction equipment shall be fueled with diesel fuel meeting CARB ultra low sulfur (15 ppm max) certification specifications.

AQ-2 Use Tier 1 engines. All diesel fueled off-road construction equipment with engines 50 hp or larger shall at a minimum meet U.S. EPA/CARB Tier 1 engine standards. Records of equipment compliance shall be kept by the general construction contractor. This measure does not apply to equipment permitted by the local air quality district or certified through the CARB's Statewide Portable Equipment Registration Program. This also does not apply to any single specialized equipment items that will be used for less than five days total during the project construction.

DURING OPERATION, LESS THAN SIGNIFICANT. During operation, no stationary sources would be associated with the project. The substation would be unmanned, therefore there would be no emissions associated with regular commuting to and from the substation. Emissions would result from the operation of vehicles used for periodic maintenance, repair, and inspection of the substation and project-related facilities. General system monitoring, control, and inspections would induce light and medium-heavy duty truck traffic, approximately 250 vehicle miles per month (PG&E, 2005; PEA Section 5.4.3). The air quality impact caused by emissions from project vehicular traffic for maintenance activities would be less than significant.

c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

DURING CONSTRUCTION, LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Concurrent construction of other projects in close proximity to the Proposed Project (e.g., residential and commercial developments and roadway improvement projects) could result in local air emissions at the same time as construction emissions caused by the Proposed Project. All of these projects would likely incorporate the BAAQMD recommendations for minimizing impacts, and all activities would need to comply with BAAQMD rules regarding nuisances and dust control. The pollutants generated by construction of these cumulative projects would, however, contribute to adverse impacts on ambient air quality, if the construction work occurs at the same time as the Proposed Project. The contribution to cumulative effects by project emissions would cease after the ~~128~~-month construction phase.

The BAAQMD recommends that cumulative significance of air quality impacts be characterized by determining the individual impacts of the project. Although the Proposed Project would contribute to regional emissions and adverse cumulative impacts, the contribution of the project with mitigation would be minor. Individually, the project would not cause a potentially significant air quality impact. With the mitigation measures identified above, because the project would not individually cause a significant impact, the impacts to air quality would not be cumulatively considerable.

DURING OPERATION, LESS THAN SIGNIFICANT. As noted above, after construction is complete, operational emissions would result only from vehicle use related to periodic maintenance, repair, and inspection of the project components. This light traffic would not result in a cumulatively considerable net increase of any criteria pollutant.

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

LESS THAN SIGNIFICANT. Certain residents, such as the very young, the elderly, and those suffering from certain illnesses or disabilities, are particularly sensitive to air pollution and are considered sensitive receptors. Examples of land uses where significant numbers of sensitive receptors are often found include schools, day care centers, parks, recreational areas, medical facilities, rest homes, and convalescent care facilities. Land use conflicts can arise when sensitive receptors are located next to major sources of air pollutant emissions.

Short-term emissions associated with project construction would not generate substantial pollutant concentrations at existing residences or the city park because the construction activity would primarily occur at least 0.4 miles away and it would be variable over the ~~128~~-month construction duration. Development anticipated to occur in the project area eventually could bring sensitive receptors closer to the Proposed Project site. However, this development would be at least 800 feet from the substation site, and it is not anticipated to become occupied until after construction of the substation project. Emissions during routine operation of the Proposed Project would be minimal, limited to only light and medium-heavy duty truck trips for maintenance. Therefore, the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations either during construction or during operation. Any potential impacts would be less than significant.

e. Would the project create objectionable odors affecting a substantial number of people?

NO IMPACT. The Proposed Project includes short-term construction activity that would involve combustion of diesel fuel and emissions of dust. Odors of construction equipment diesel exhaust would be reduced by the use of either low-sulfur or ultra-low-sulfur fuel. No substances used or activities involved with the project would have the capability to produce offensive odors.

B.3.4 Biological Resources

BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.4.1 Setting

The Proposed Project site is located in the Antioch South 7.5" U.S. Geological Survey (USGS) quadrangle in Section 9 of Township 1N, Range 2E. The proposed substation project site consists of an irregularly-shaped area totaling approximately 5.1 acres, and the proposed access road (approximately 3,050 linear feet with a road width of 22 feet plus shoulders within a 50-foot easement totaling approximately 3.5 acres). This acreage covers mainly level ground at 200 feet elevation, with a hillside to the west and south of the proposed footprint that climbs to 328 feet elevation. The proposed substation site is approximately one mile south of the intersection of Lone Tree Way and Hillcrest Avenue, and approximately 0.4 miles west of the intersection of the nearest paved roads, Heidorn Ranch Road and Sand Creek Road. The proposed footprint would be adjacent to the existing transmission line corridor for the Contra Costa-Cayetano 230 kV circuit. The surrounding area is presently being used for agriculture or open space at the outskirts of the City of Antioch (e.g., residential and commercial development along eastern Lone Tree Way).

Sand Creek is a seasonal creek that meanders from west to east along the northern portion of the substation site. The edge of the riparian corridor is approximately 100 feet north of the proposed footprint for the substation. The applicant would span the creek with a temporary bridge adjacent to an existing culvert to facilitate vehicular traffic during construction and for maintenance purposes.

Biotic Habitats

A reconnaissance survey was conducted on October 11, 2005 and a second, more focused survey was conducted May 8, 2006. Two biotic habitats were observed on the project site. For the purposes of this report, they have been identified as “non-native grassland” and “seasonal channels and wetlands.” These habitats are discussed in further detail below.

Non-Native Grassland. The substation footprint and nearly the entire footprint of the access road occurs in a non-native grassland that appears to have historically been dry-farmed and is periodically disced. Annual grasses and forbs, mostly of European origin, dominate this habitat. Grass species observed during the May 2006 survey include foxtail barley (*Hordeum murinum* ssp. *leporinum*), cultivated barley (*Hordeum* sp.), slender wild oats (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Italian ryegrass (*Lolium multiflorum*), and rattail fescue (*Vulpia myuros*). Non-native forbs include curly dock (*Rumex crispus*), milk thistle (*Silybum marianum*), prickly sowthistle (*Sonchus asper*), redstem filaree (*Erodium cicutarium*), black mustard (*Brassica nigra*), wild radish (*Raphanus sativus*), and shepherd’s purse (*Capsella bursa-pastoris*). Native forbs present include blow wives (*Achyrrachaena mollis*), doveweed (*Eremocarpus setigerus*), wild cucumber (*Marah fabaceus*), cocklebur (*Xanthium strumarium*), clarkia (*Clarkia* sp.), Thuriel’s spear (*Triteleia laxa*), and vinegarweed (*Trichostema lanceolatum*). In addition to the grasses and forbs mentioned above, an upland swale in the proposed substation footprint includes rose clover (*Trifolium hirtum*) and Mediterranean linseed (*Bellardia trixago*).

Reptilian species observed on-site during site surveys include the western fence lizard (*Sceloporus occidentalis*) and a Pacific gopher snake (*Pituophis catenifer catenifer*). Other reptiles that could or are likely to occur on-site include the western skink (*Eumeces skiltonianus*), southern alligator lizard (*Elgaria multicarinata*), racer (*Coluber constrictor*), common garter snake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalus viridis*).

Avian species that do or have the potential to occur on-site within the grassland include the turkey vulture (*Cathartes aura*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), Cooper’s hawk (*Accipiter cooperi*), red-shouldered hawk (*Buteo lineatus*), Swainson’s hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*) [observed on-site], golden eagle (*Aquila chrysaetos*) [two observed soaring over the site and immediately east of the site during site visit in May 2006], American kestrel (*Falco sparverius*), rock dove (*Columba livia*), mourning dove (*Zenaida macroura*), great horned owl (*Bubo virginianus*), burrowing owl (*Athene cunicularia*) [observed on-site during reconnaissance survey in October 2005], loggerhead shrike (*Lanius ludovicianus*), western king bird (*Tyrannus verticalis*) observed on-site, western scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*) [observed on-site], California horned lark (*Eremophila alperstris actia*), American robin (*Turdus migratorius*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), and western meadowlarks (*Sturnella neglecta*), western kingbird (*Tyrannus verticalis*), grasshopper sparrow (*Ammodramus savannarum*), savannah sparrow (*Passerculus sandwichensis*), white-crowned sparrow (*Zonotrichia leucophrys*), song sparrow (*Melospiza melodia*), western meadowlark (*Sturnella neglecta*), red-winged blackbird (*Agelaius phoeniceus*), and Brewer’s blackbird (*Euphagus cyanocephalus*).

Mammals that do or could occur on-site include the Virginia opossum (*Didelphis virginiana*), cottontail (*Sylvilagus* sp.), black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*) observed on-site, Botta’s pocket gopher (*Thomomys bottae*) evidence observed on-site, western harvest mouse (*Reithrodontomys megalotis*), California mouse (*Peromyscus californicus*), deer mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), gray fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), American badger (*Taxidea taxus*), striped skunk (*Mephitis mephitis*), feral cat (*Felis catus*), and bobcat (*Lynx rufus*).

Seasonal Channels and Wetland. Riparian habitat associated with Sand Creek occurs on the project site. The creek was conveying water at a depth of approximately one foot at the time of the May 2006 survey. The width of the creek within the impact area at the ordinary high water level is approximately 10 feet, while the width of the creek between the top of the banks is approximately 30 feet. The existing access road spans the creek over a culvert that is approximately 6 feet in diameter. The arboreal element of this habitat occurring on the west side of the road crossing Sand Creek primarily consists of cottonwoods (*Populus fremontii*), valley oaks (*Quercus lobata*), California buckeye (*Aesculus californicus*), blue elderberry (*Sambucus mexicana*), black walnut (*Juglans californica*), and eucalyptus (*Eucalyptus* sp.). The understory vegetation consists of willows (*Salix* sp.), tree tobacco (*Nicotiana glauca*), mugwort (*Artemisia douglasiana*), and, within the channel itself, cattails (*Typha angustifolia*). An emergent wetland dominated by cattails occurs in the creek, east of the culvert and proposed bridge location.

A seasonal channel connects to Sand Creek and occurs along the eastern boundary of the site. This channel was dry at the time of each survey. The same non-native grasses and forbs that occur in the surrounding grassland habitat dominated this channel and the upper banks of Sand Creek. The width of the channel at the ordinary high water level was approximately 5 feet, while the width of the channel between the top of the banks was approximately 20 feet.

A small seasonal wetland approximately 50 square feet in area was observed within the grassland habitat. This feature occurs in the north central portion of the footprint for the proposed substation, near where the foot of the proposed berm would occur. This feature was dry at the time of the May 2006 survey but supported sparsely distributed hydrophytic vegetation, including popcornflower (*Plagiobothrys bracteatus*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), farmer's foxtail (*H. murinum*), foxtail fescue (*Vulpia myuros*), and hyssop loosestrife (*Lythrum hyssopifolium*).

Wildlife species that do or may occur in these wetter areas are similar to those that occur within the grassland and also include the Pacific tree frog (*Hyla regilla*) dozens of larvae were observed in Sand Creek, California red-legged frog (*Rana draytonii*), western pond turtle (*Actinemys marmorata*), mallard (*Anas platyrhynchos*), common barn owl (*Tyto alba*) observed on-site, Anna's hummingbird (*Calypte anna*) observed on-site, black phoebe (*Sayornis nigricans*) observed on-site, lesser goldfinch (*Carduelis psaltria*), and American goldfinch (*Carduelis tristis*).

Special Status Plants and Animals

Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. State and federal laws have provided the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFG. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS, 2001). Collectively, these plants and animals are referred to as "special status species."

A number of special status plants and animals occur in the site's vicinity. These species, and their potential to occur in the study area, are listed in Tables B.3.4-1 and B.3.4-2. Sources of information for these tables included *California's Wildlife, Volumes I, II, and III* (Zeiner et al., 1988), *California Natural Diversity Data Base* (CDFG, 2005), *Endangered and Threatened Wildlife and Plants* (USFWS, 2006),

Table B.3.4-1. Special Status Plant Species that Could Occur in the Project Vicinity

Species	Status	Habitat	*Occurrence in the Study Area
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act			
Contra Costa goldfields (<i>Lasthenia conjugens</i>)	FE	Alkaline soils in mesic valley and foothill grasslands and vernal pools at elevations between 0 and 1540 feet. Blooms March-June.	Absent. Suitable habitat occurs within the grassland habitat of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.
Other Special Status Plants Listed by CNPS			
Alkali milk vetch (<i>Astragalus tener</i> var. <i>tener</i>)	CNPS 1B	Coastal bluff scrub, dunes, coastal prairies, and valley and foothill grasslands on adobe clay at elevations between 0 and 200 feet. Blooms March-June.	Absent. Clay soils are not present on the study area.
Heartscale (<i>Atriplex cordulata</i>)	CNPS 1B	Alkali grassland, alkali meadow, and chenopod scrub at elevations up to 1230 feet. Blooms April-October.	Absent. Marginal habitat occurs within the grassland habitat of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.
Brittlescale (<i>Atriplex depressa</i>)	CNPS 1B	Alkaline and clay soils of meadows and seeps, playas, valley and foothill grasslands, and vernal pools at elevations of up to 1050 feet. Blooms May-October.	Absent. Marginal habitat occurs within the grassland habitat of the site. This species was observed approximately 1 mile southwest of the site in 2004. However, this species was not found during rare plant surveys conducted on the site in 2002.
San Joaquin spearscale (<i>Atriplex joaquiniana</i>)	CNPS 1B	Chenopod scrub, meadows and seeps, playas, and valley and foothill grasslands on alkaline soils at elevations of up to 2740 feet. Blooms April-October.	Absent. Marginal habitat occurs within the grassland habitat of the site. This species was observed in 1989 within 1 miles of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.
Big-scale balsamroot (<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>)	CNPS 1B	Chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentine, at elevations between 300 and 4600 feet. Blooms April-October.	Absent. Suitable habitat occurs within the grassland habitat of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.
Big tarplant (<i>Diepharizonia plumosa</i> ssp. <i>plumosa</i>)	CNPS 1B	Valley and foothill grasslands at elevations between 100 and 1650 feet. Blooms July-October.	Absent. Suitable habitat occurs within the grassland habitat of the site. Six observances of this species in 1998 occur within three miles southeast of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.
Mt. Diablo fairy lantern (<i>Calochortus pulchellus</i>)	CNPS 1B	Chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland at elevations between 100 and 2750 feet. Blooms April-June.	Absent. Suitable habitat occurs within the grassland and riparian habitats of the site. However, this species was not found during rare plant surveys conducted on the site in 2002 or during the May 2006 field survey.
Congdon's tarplant (<i>Centromadia parryi</i> ssp. <i>congdonii</i>)	CNPS 1B	Valley and foothill grassland on alkaline soils at elevations of up to 750 feet. Blooms May-October.	Absent. Suitable habitat occurs within the grassland habitat of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.
Hoover's cryptantha (<i>Cryptantha hooveri</i>)	CNPS 1B	In sandy soils of valley and foothill grasslands at elevations between 30 and 500 feet. Blooms April-May.	Absent. Suitable habitat occurs within the grassland habitat of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.
Recurved larkspur (<i>Delphinium recurvatum</i>)	CNPS 1B	In alkaline soils of chaparral, cismontane woodland and valley and foothill grasslands at elevations between 10 and 2460 feet. Blooms March-June.	Absent. Suitable habitat occurs within the grassland habitat of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.

Table B.3.4-1. Special Status Plant Species that Could Occur in the Project Vicinity

Species	Status	Habitat	*Occurrence in the Study Area
Western leatherwood (<i>Dirca occidentalis</i>)	CNPS 1B	Broadleaved upland forest, closed-cone forest, cismontane woodland, North Coast coniferous forest, riparian scrub, riparian woodland at elevations between 160 and 1300 feet. Blooms January-March.	Absent. Suitable habitat occurs within the riparian habitat along Sand Creek. However, this species was not found during rare plant surveys conducted on the site in 2002 or during the May 2006 field survey.
Dwarf downingia (<i>Downingia pusillus</i>)	CNPS List 2	In moist soils of valley and foothill grasslands and in vernal pools at elevations up to 1460 feet. Blooms March-May.	Absent. Limited suitable habitat occurs on the site in the form of a small seasonal wetland within the grassland habitat. However, this species was not found during rare plant surveys conducted on the site in 2002 or at the time of the May 2006 field survey, during the species' blooming period.
Mt. Diablo buckwheat (<i>Eriogonum truncatum</i>)	CNPS 1A	In sandy soils of chaparral, coastal scrub, valley and foothill grassland at elevations between 10 and 1150 feet. Blooms April-September.	Absent. Suitable habitat occurs within the grassland habitat of the site. However, this species was not found during rare plant surveys conducted on the site in 2002. This species was last observed in the area in 1940.
Round-leaved filaree (<i>Erodium macrophyllum</i>)	CNPS List 2	Cismontane woodland and on clay soils of valley and foothill grasslands at elevations between 50 and 3940 feet. Blooms March-May.	Possible. Suitable habitat occurs within the grassland habitat of the site. This species was observed in 2005 within 500 west of the site (Monk & Associates 2005) and in 1996 within three miles of the site.
Diamond-petaled California poppy (<i>Eschscholzia rhombipetala</i>)	CNPS 1B	In alkaline and clay soils of valley and foothill grasslands at elevations up to 3200 feet. Blooms March-April.	Absent. Suitable habitat occurs within the grassland habitat of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.
Fragrant fritillary (<i>Fritillaria liliacea</i>)	CNPS 1B	Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, often on serpentine, at elevations between 10 and 1350 feet. Blooms February-April.	Absent. Suitable habitat occurs within the grassland habitat of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.
Diablo helianthella (<i>Helianthella castanea</i>)	CNPS 1B	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland at elevations between 200 and 4260 feet. Blooms March-June.	Absent. Suitable habitat occurs within the grassland and riparian habitats of the site. This species was observed in 1998 approximately three miles southwest of the site. However, this species was not found during rare plant surveys conducted on the site in 2002.
Brewer's western flax (<i>Hesperolinon breweri</i>)	CNPS 1B	Mainly occurs on serpentine soils of chaparral, cismontane woodland, and valley and foothill grassland at elevations between 100 and 2950 feet. Blooms May-July.	Absent. Marginal habitat occurs within the grassland habitat of the site. This species was observed in woodland habitat within three miles of the site during rare plant surveys conducted in 2002. However, this species was not observed on the site itself during the 2002 surveys.
Showy madia (<i>Madia radiata</i>)	CNPS 1B	Cismontane woodland and valley and foothill grassland at elevations between 80 and 2950 feet. Blooms March-May.	Possible. Suitable habitat occurs within the grassland habitat of the site. The last documented occurrence of this species within three miles of the site was in 1941.
Bearded popcornflower (<i>Plagiobothrys hystriculus</i>)	CNPS 1A	Vernal pools and mesic soils of valley and foothill grasslands at elevations between 30 and 160 feet. Blooms April-May.	Absent. Limited suitable habitat occurs on the site in the form of a small seasonal wetland within the grassland habitat. However, this species was not found during rare plant surveys conducted on the site in 2002 or at the time of the May 2006 field survey, during the species' blooming period.
Caper-fruit tropidocarpum (<i>Tropidocarpum capparideum</i>)	CNPS 1A	In alkaline soils of valley and foothill grasslands at elevations up to 1500 feet. Blooms March-April.	Absent. Suitable habitat occurs within the grassland habitat of the site. However, this species was not found during rare plant surveys conducted on the site in 2002. This species was last observed in the area in 1957.

Source: Adapted from CDFG, 2005 and CNPS, 2001

* Explanation of Occurrence Designations and Status Codes:

Present: Species observed on the sites at time of field surveys or during recent past.

Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.

Possible: Species not observed on the sites, but it could occur there from time to time.

Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.

Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

STATUS CODES:

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Protected
		CSC	California Species of Special Concern
		CNPS	California Native Plant Society Listing

- 1A Plants Presumed Extinct in California
- 1B Plants Rare, Threatened, or Endangered in California and elsewhere
- 2 Plants Rare, Threatened, or Endangered in California, but more common elsewhere
- 3 Plants about which we need more information – a review list
- 4 Plants of limited distribution – a watch list

Table B.3.4-2. Special Status Animal Species that Could Occur in the Project Vicinity

Species	Status	Habitat	*Occurrence in the Study Area
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act			
Vernal Pool Tadpole Shrimp <i>(Lepidurus packardii)</i>	FE	Clear to highly turbid vernal pools, either mud- or grass-bottomed.	Absent. Suitable habitat does not occur on-site for the Vernal Pool Tadpole Shrimp.
Vernal Pool Fairy Shrimp <i>(Branchinecta lynchi)</i>	FT	Grassland swales, slumps or basalt-flow depressions with grass or mud bottoms	Absent. Suitable habitat does not occur on-site for the Vernal Pool Fairy Shrimp.
California Tiger Salamander <i>(Ambystoma californiense)</i>	FT, CSC	Breeds in vernal pools and stock ponds of central California; adults aestivate in grassland habitats adjacent to the breeding sites.	Absent. Breeding habitat for the California tiger salamander is not present on-site. Furthermore, there are no known breeding ponds within one mile of the site.
California Red-legged Frog <i>(Rana draytonii)</i>	FT, CSC	Rivers, creeks and stock ponds of the Sierra foothills and coast range, preferring pools with overhanging vegetation.	Present. California red-legged frogs are presumed present in this reach of Sand Creek, and likely use this reach as a movement corridor to suitable breeding pools, which are not associated with the site. CRLF were observed in Sand Creek in 1998 within 1.5 miles to the southwest of the site.
Alameda Whipsnake <i>(Masticophis lateralis euryxanthus)</i>	FT, CT	Ranges from the inner coast range in western and central Contra Costa and Alameda counties. Found in rock outcroppings and talus pillings, scrub communities, grasslands, oak, and oak/bay woodlands.	Absent. Suitable habitat for the Alameda whipsnake does not occur on-site.
Swainson's Hawk <i>(Buteo swainsoni)</i>	CT	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields.	Possible. No Swainson's hawks were observed on-site. However, the site supports marginal breeding and good foraging habitat for this species.
American Peregrine Falcon <i>(Falco peregrinus anatum)</i>	CE	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large populations of other bird species.	Possible. No peregrine falcon were observed on-site and the site does not support nesting habitat. However, the site does support suitable foraging habitat and nesting habitat is present approximately 3 miles west of the site.
San Joaquin Kit Fox <i>(Vulpes macrotis mutica)</i>	FE, CT	Saltbush scrub, grassland, oak woodlands, savanna, and fresh-water marsh.	Unlikely. Suitable habitat is present on site; however, no San Joaquin kit fox or evidence (i.e., scat, dens, prey remains, prints) were observed during surveys. Furthermore, kit fox have not been observed in the general vicinity of the site since 1992.

Table B.3.4-2. Special Status Animal Species that Could Occur in the Project Vicinity

Species	Status	Habitat	*Occurrence in the Study Area
Federal Candidate Species and State Species of Special Concern			
Western Pond Turtle (<i>Actinemys marmorata</i>)	CSC	Open slow-moving water of rivers and creeks of central California with rocks and logs for basking.	Present. Western pond turtles are presumed present as they are known to occur in other reaches of Sand Creek and it is expected that they occur in the reach of the creek associated with the site.
Cooper's Hawk (<i>Accipiter cooperii</i>)	CSC	Breeds in oak woodlands, riparian forests and mixed conifer forest of the Sierra Nevada, but winters in a variety of lowland habitats.	Likely. Suitable nesting habitat is absent from the site; however, good foraging habitat exists on-site for the Cooper's hawk.
Sharp-shinned Hawk (<i>Accipiter striatus</i>)	CSC	Breeds in the mixed conifer forests of the northern Sierra Nevada. This species winters in a variety of habitats of the state.	Likely. Suitable nesting habitat is absent from the site; however, good foraging habitat exists on-site for the sharp-shinned hawk.
Golden Eagle (<i>Aquila chrysaetos</i>)	CSC	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert.	Present. Two golden eagles were observed foraging over the site and adjacent areas to the east. The site supports good foraging habitat for the species but only marginal nesting habitat.
Ferruginous Hawk (<i>Buteo regalis</i>)	CSC	Open terrain in plains and foothills where ground squirrels and other prey are available.	Possible. No ferruginous hawks were observed on-site; however, the project site supports both suitable foraging and nesting habitat.
Northern Harrier (<i>Circus cyaneus</i>)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	Likely. No northern harriers were observed on-site during surveys. However, the site supports both suitable foraging and nesting habitat for this species.
White-tailed Kite (<i>Elanus caeruleus</i>)	CSC	Open grasslands and agricultural areas throughout central California.	Likely. No white-tailed kites were observed on-site. However, the site supports both suitable foraging and nesting habitat for this species.
Merlin (<i>Falco columbarius</i>)	CSC	This falcon, which breeds in Canada, winters in a variety of California habitats, including grasslands, savannahs, wetlands, etc.	Possible. Winter migrant Merlins may pass through the site from time to time. Suitable foraging habitat exists.
Prairie Falcon (<i>Falco mexicanus</i>)	CSC	Distributed from annual grasslands to alpine meadows; requires cliffs or rock outcroppings for nesting.	Possible. Although the site does not support suitable nesting habitat for the prairie falcon, it does support suitable foraging habitat. Nesting habitat is present approximately 3 miles west of the site.
Burrowing Owl (<i>Athene cunicularia</i>)	CSC	Found in open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	Present. An individual owl was observed during the October 2005 reconnaissance survey.
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	CSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Likely. The site supports suitable foraging and marginal nesting habitat for the loggerhead shrike. It has been observed on other sites in the general vicinity of the subject site.
California Horned Lark (<i>Eremophila alpestris actia</i>)	CSC	Short-grass prairie, annual grasslands, coastal plains, open fields.	Possible. No California Horned Larks were observed foraging on site. The site provides suitable foraging and marginal breeding (short grass or barren areas are generally absent) habitat.
Purple Martin (<i>Progne subis</i>)	CSC	Abandoned woodpecker holes in valley oak and cottonwood forests for nesting; also nests in vertical drainage holes under elevated freeways and highway bridges; open areas required for feeding.	Unlikely. Foraging habitat exists on site for the Purple Martin; however, breeding habitat is absent.

Table B.3.4-2. Special Status Animal Species that Could Occur in the Project Vicinity

Species	Status	Habitat	*Occurrence in the Study Area
Tricolored Blackbird (<i>Agelaius tricolor</i>)	CSC	Breeds near fresh water in dense emergent vegetation.	Unlikely. Tricolored Blackbirds require dense emergent vegetation to breed, and this habitat is absent from the site. Only small patches of emergent vegetation occur on-site.
Townsend's Big-eared Bat (<i>Plecotus townsendii townsendii</i>)	CSC	Primarily a cave-dwelling bat that may also roost in buildings. Occurs in a variety of habitats of the state.	Unlikely. Suitable foraging habitat occurs on-site; however, the site does not support roosting habitat for the Townsend's Big-eared Bat.
Western Mastiff Bat (<i>Eumops perotis californicus</i>)	CSC	Forages over many habitats, requires tall cliffs or buildings for roosting.	Unlikely. Although potential foraging habitat exists on-site for the California Mastiff Bat, roosting habitat is absent.
Pallid Bat (<i>Antrozous pallidus</i>)	CSC	Grasslands, chaparral, woodlands, and forests of California; most common in dry rocky open areas providing roosting opportunities such as hollows in sycamores and crevices in mature trees.	Unlikely. Although the site provides suitable foraging habitat for the Pallid Bat, it provides only marginal roosting habitat.

Source: Adapted from CNDDDB, 2005 and USFWS, 2006

* Explanation of Occurrence Designations and Status Codes:

Present: Species observed on the sites at time of field surveys or during recent past.

Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.

Possible: Species not observed on the sites, but it could occur there from time to time.

Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.

Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

STATUS CODES:

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Protected
		CSC	California Species of Special Concern

State and Federally Listed Endangered and Threatened Animals of California (CDFG, 2006), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2001). This information was used to evaluate the potential for special status plant and animal species to occur on the site. The potential for occurrence is also based on the location of special status species found on the California Natural Diversity Data Base (CNDDDB). It is important to note that the CNDDDB is a volunteer database; therefore, it may not contain all known records or information found in literature (e.g., reports and research papers) that is not formally published.

Serpentine soils are absent from the site; as such, those species that are uniquely adapted to serpentine conditions, such as most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*), are considered absent from the site. Other plant species occur in habitats not present in the study area (e.g., chaparral, brackish and freshwater marshes, coastal scrub, etc.) and, therefore, are also considered absent from the site. These species include the Mt. Diablo manzanita (*Arctostaphylos auriculata*), Contra Costa manzanita (*Arctostaphylos manzanita* ssp. *laevigata*), Suisun Marsh aster (*Aster lentus*), Butte County morning-glory (*Calystegia atriplicifolia* ssp. *buttensis*), chaparral harebell (*Campanula exigua*), soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*), Mt. Diablo bird's-beak (*Cordylanthus nidularis*), Brandegee's eriastrum (*Eriastrum brandegeae*), Contra Costa wallflower (*Erysimum capitatum* ssp. *angustatum*), rose mallow (*Hibiscus lasiocarpus*), Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), Delta mudwort (*Limosella subulata*), Antioch Dunes evening-primrose (*Oenothera deltoids* ssp. *howellii*), Mt. Diablo phacelia (*Phacelia phacelioides*), eel-grass pondweed (*Potamogeton zosteriformis*), blue skullcap (*Scutellaria lateriflora*), rayless ragwort (*Senecio aphanactis*), coastal triquetrella (*Triquetrella californica*), and oval-leaved viburnum (*Viburnum ellipticum*). Species occurring at elevations well above or below that of the site would also be considered absent. These include the large-flowered fiddleneck (*grandiflora*),

Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), Carquinez goldenbush (*Isocoma arguta*), Mason's lilaeopsis (*Lilaeopsis masonii*), rock sanicle (*Sanicula saxatilis*), and Mt. Diablo jewel-flower (*Streptanthus hispidus*).

Jurisdictional Waters

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and that, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Game (CDFG), and the California Regional Water Quality Control Board (RWQCB).

Sand Creek would be considered a Water of the United States. This drainage is characterized as having a defined bed and bank and is hydrologically connected to other Waters of the U.S., as it flows into Marsh Creek, which empties into Suisun Bay. The seasonal channel tributary to Sand Creek would also be considered a jurisdictional Water of the U.S. The limit of USACE jurisdiction, as well as that of the RWQCB, for both of these features would be the ordinary high water (OHW) level. In addition, both drainages would likely be subject to the jurisdiction of the CDFG up to the top of bank or the edge of associated riparian vegetation whichever is greater.

Jurisdictional waters were otherwise absent from the site and its immediate vicinity. The seasonal wetland occurring within the grassland habitat south of Sand Creek is isolated from any jurisdictional waters in the region (i.e., Sand Creek). However, the USACE and RWQCB are the final arbiters and may claim jurisdiction over this feature.

B.3.4.2 Environmental Impacts and Mitigation Measures

- a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?***

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The Proposed Project site, including the site of the access road and bridge, provides suitable habitat for a number of special status plant and animal species. Species potentially affected by eventual site development or otherwise of concern to state and federal resource agencies are identified below.

Special Status Plant Species

Focused plant surveys were conducted on the project site and within its vicinity in 2002 by Live Oak Associates, Inc. for all but two of the plant species listed in Table B.3.4-1. At that time, it was determined that 20 of the 22 special status plants listed in Table B.3.4-1 were absent from the site.

The grassland habitat of the site provides marginal to suitable habitat for two plant species: round-leaved filaree (*Erodium macrophyllum*) and showy madia (*Madia radiata*). It was not possible to confirm their presence or absence based on the May 2006 reconnaissance-level survey. However, a small population of round-leaved filaree was observed under the existing transmission lines less than 500 feet west of the Proposed Project site during focused rare plant surveys conducted by Monk & Associates in the spring and summer of 2005 (Monk & Associates, 2005).

To avoid adverse effects on these plant species, focused surveys within the grassland habitat in the vicinity of the proposed construction footprint would need to be conducted prior to ground disturbance and during the appropriate blooming season for the round-leaved filaree and showy madia. Surveys conducted in April and June should be sufficient to confirm their presence on or absence from the site. The absence of the remaining species listed in Table B.3.4-1 could be reconfirmed at this time.

Round-leaved filaree (*Erodium macrophyllum*) has the status of being on the CNPS List 2 and showy madia (*Madia radiata*) is on CNPS List 1B. Impacts to CNPS 1A- and 1B-listed species may be considered significant under CEQA, while impacts to species on the CNPS 2 list would not be considered significant under CEQA. If either of these special status plant species discussed above were determined to be present on the site during the focused surveys (in the absence of surveys, these species must be presumed present), impacts to these species would be considered significant depending on the population's size and location. The following mitigation measure expands the Applicant-Proposed Measures (including APM Bio-12) to address this impact.

Mitigation Measure for Special Status Plant Species

B-1 Preserve and/or restore impacted plant populations. Should one or more populations of round-leaved filaree (*Erodium macrophyllum*) or showy madia (*Madia radiata*) be detected within the project footprint, then one of the following measures shall be implemented to offset permanent impacts to these plant populations.

- ***Avoid special status plants.*** In consultation with a botanist, and to the maximum extent practicable, the project shall be constructed and operated in such a way as to avoid substantial direct and indirect impacts (e.g., the establishment of an appropriate-sized buffer) to these species. Avoidance measures include, but are not limited to, establishment of an appropriate-size buffer (e.g., installation of exclusion fencing) to ensure that identified populations are not disturbed during construction (e.g., human intrusion by motorized vehicles).
- ***Implement a site restoration plan.*** A detailed Special Status Plant Species Restoration Plan shall be developed in consultation with a qualified restoration ecologist and shall identify measures allowing for the restoration of these plant populations at a minimum of a 1:1 replacement-to-loss ratio (i.e., one individual replanted for each individual lost). This plan shall be submitted to the CPUC for approval. The restoration plan shall:
 1. Designate location of onsite areas to restore lost plant populations. Sufficient habitat amongst the proposed development area should exist for onsite restoration. Appropriate habitat could be created on suitable soils.
 2. Describe the propagation and planting techniques to be employed in the restoration effort. Perennial plants to be impacted by site grading should be salvaged and raised in a greenhouse for eventual transplanting within the restoration areas. Annual plants can be established through direct seeding practices and/or transplanting container-grown plants into existing suitable habitat.
 3. Develop a timetable for implementation of the restoration plan
 4. Develop a monitoring plan and performance criteria.
 5. Describe remedial measures to be performed in the event that initial restoration measures are unsuccessful in meeting the performance criteria.
 6. Describe site maintenance activities to follow restoration activities. These may include weed control, irrigation, and control of herbivory by livestock and wildlife.

- *Provide offsite mitigation.* If a site restoration plan is not feasible, mitigation for these plant species shall be accommodated via offsite habitat creation or enhancement or through the purchase of credits from a mitigation bank.

Implementation of Mitigation Measure B-1 would reduce project impacts to any special status plant species that may occur on the site to a level that is less than significant.

Special Status Animal Species

Most of the special status animal species listed in Table B.3.4-2 are either absent or may occur rarely or occasionally on-site and sufficient information exists to evaluate the potential impacts the project may or may not have on them. Animal species warranting further discussion include the California tiger salamander, California red-legged frog, western pond turtle, burrowing owl, and San Joaquin kit fox.

California Tiger Salamander (*Ambystoma californiense*). **Federal Listing Status: Threatened; State Listing Status: Species of Special Concern.** The California tiger salamander (CTS) is not expected to occur within the project boundary or within its immediate vicinity due to a lack of suitable breeding ponds (mainly vernal pools) in the area. The May 2006 reconnaissance-level survey team, which included a noted expert on California herp species (Dr. Mark Jennings, Live Oak Associates), determined that the site does not support suitable habitat for CTS. Therefore, development of the project would have no direct or indirect effect on individual CTS or their habitat.

California Red-Legged Frog (*Rana draytonii*). **Federal listing status: Threatened; State listing status: Species of Concern.** The California red-legged frog (CRLF), California's largest native frog, is presumed present within the reach of Sand Creek associated with the project as CRLF are known to occur in other nearby reaches of Sand Creek. Although no suitable breeding pools are located within the reach of Sand Creek associated with the project, it is expected that CRLF use this reach as a movement corridor.

The project would involve building a temporary bridge over Sand Creek. To avoid adverse effects on CRLF, this bridge should be constructed during the summer and fall months (approximately between June 1 and October 15), when the water of Sand Creek is at low flow, and when it is unlikely that this species would occur in the upland habitat, as the warm weather this time of year is generally inhospitable for the species to spend much time away from water. The bridge crossing design has not been finalized, but it could be configured to have no impact on this species if all structures are placed above the line of USACE and RWQCB jurisdiction or ordinary high water (OHW) level. If the bridge can be installed between June 1 and October 15 above the OHW level, then the project would be able to avoid impacts to the California red-legged frog. However, if the ultimate configuration of the access road, bridge, and associated foundation would occur within the OHW, then mitigation would be needed to avoid significant impacts to CRLF.

The recommended approach to mitigate impacts to the California red-legged frog is based upon: (1) avoidance of impacts to Sand Creek and the associated woodland habitat to the extent possible; (2) implementation of minimization measures; and (3) maintenance of water quality in the watershed. Applicant-Proposed Measures identified in the Project Description, Table B.1-2 would provide education on protected species to crews (APMs Bio-1 and Bio-2), avoid impact to the woodland habitat near Sand Creek (APMs Bio-6, Bio-20, Bio-21, and Bio-24), and avoid degradation of surrounding water quality by implementing best management practices (BMPs) for erosion control (APMs Hydro-1 through Hydro-4). No additional steps would be needed to ensure that the ultimate design of the bridge and its construction do not significantly impact CRLF.

If a clear-span bridge can be installed without disrupting CRLF habitat, any potentially adverse effects due to implementation of the project would be temporary in nature. By following the Applicant-Proposed Measures, potentially adverse effects to CRLF caused by project implementation would be reduced to a less-than-significant level.

Western Pond Turtle (*Actinemys marmorata*). Federal listing status: None; State listing status: Species of Special Concern. The western pond turtle (WPT) is expected to occur in the reach of Sand Creek associated with the project, and is presumed present as it is known to occur in other nearby reaches of the creek. Implementation of measures identified above (APMs Bio-6, Bio-20, Bio-21, and Bio-24) for CRLF would reduce potentially adverse effects of the project on WPT habitat. By following those Applicant-Proposed Measures, potentially adverse effects of the project to the WPT would be reduced to a less than significant level.

Western Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern. An individual burrowing owl (BUOW) was observed on-site during the October 2005 reconnaissance site visit, and the species is therefore considered present on-site. The owl was observed within the proposed footprint of the proposed substation. Applicant-Proposed Measures (APMs Bio-26 and Bio-27) would address avoidance of the BUOW individuals. The following mitigation would ensure that loss of BUOW habitat would be offset to reduce impacts to a less than significant level.

Mitigation Measure for Special Status Animal Species

B-2 Offset for loss of burrowing owl habitat. Per the Resource Management Plan (RMP) adopted by the City of Antioch General Plan, loss of burrowing owl habitat (a grassland species located on lands east of Deer Valley Road) shall be mitigated at a loss to mitigation ratio of 0.5:1 to 1:1. The Resource Management Plan allows for mitigation ratios to be reduced or discounted between 25% and 50% if grassland habitat is preserved within the FUA1 Plan Area or in strategically important grassland areas identified in the RMP.

San Joaquin Kit Fox (*Vulpes macrotis mutica*). Federal Listing Status: Endangered; State Listing status: Threatened. The project site provides potentially suitable foraging and breeding habitat for the San Joaquin kit fox, a small canid species that occurs infrequently in Contra Costa County. San Joaquin kit fox have not been observed within 10 miles of the site since 1999 when a fox was sighted at the Black Diamond Mines Regional Preserve (approximately 4 miles west of the site). The U.S. Fish and Wildlife Service has shown considerable interest in the protection of identified kit fox habitat in the region during recent years, and has been taking a fairly conservative approach to habitat loss for this species throughout its current and historic range. The area surrounding the site has been extensively studied for kit fox presence. Focused kit fox surveys have been conducted over 10,000 acres between the Los Vaqueros watershed and the Black Diamond Mines since 1995.

Due to the rarity of kit fox in the region, should an errant fox occur on the site, the project would potentially result in a significant effect to both habitat and individuals. The probability of kit fox occurring on-site is extremely low. Nonetheless, protection of burrowing owl habitat recommended with Mitigation Measure B-2 above would accommodate any potential loss of kit fox habitat caused by project development. Mitigation Measure B-3 below would expand on APM Bio-43 and mitigate for potential harm to an individual.

Mitigation Measure for Special Status Animal Species

- B-3 Protect San Joaquin kit fox.** The applicant shall follow the *Standardized Recommendations for Protection of the Kit Fox Prior to or During Ground Disturbance* developed by the U.S. Fish and Wildlife Service (1999).

Other Special Status Species

Other special status species, such as the Swainson's hawk, sharp-shinned hawk, ferruginous hawk, northern harrier, white-tailed kite, merlin, prairie falcon, loggerhead shrike, and California horned lark, may occur on the site incidental to home range and migratory movements. Project development would deprive various raptor species of a minimal amount of foraging habitat that is otherwise currently abundant in the region. The limited extent of loss in foraging habitat is considered to be a less than significant impact.

An unidentified raptor nest was observed in a mature eucalyptus tree located on the northwest corner of intersection of Sand Creek and the crossing. No raptors were observed using the nest during the May 2006 site visit. Should the nesting habitat be impacted by removal of the tree or trimming to accommodate the construction of the new bridge, the Applicant-Proposed Measures (APMs Bio-31 through Bio-35) would ensure that no raptors are disturbed during the breeding season.

- b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Construction of the proposed bridge would likely require the removal or pruning of several mature riparian trees. Preliminary design of the bridge is for a clear-span structure, which would ensure that impacts to the riparian habitat associated with the site are minimal. However, final design of the bridge has not yet been attained. Permitting from the California Department of Fish and Game would be necessary to construct the bridge if construction activities would occur below the top of bank. Although the APMs for water quality (APMs Hydro-1 to Hydro-4) ensure that best management practices (such as using anti-siltation fencing, avoiding staging within or at top of bank, etc.) would be followed, additional mitigation would be necessary to ensure that impacts to riparian habitat would be less than significant.

Mitigation Measure for Loss of Riparian Habitat

- B-4 Restore lost riparian habitat.** Any woody vegetation removed to accommodate bridge construction (e.g., elderberry, willow) within the riparian corridor of Sand Creek shall be replaced at a minimum of a 1:1 replacement-to-loss ratio or as set forth by the California Department of Fish and Game. Plantings shall be native species that are contract grown from local stock (within 5 miles of the site), if feasible.

- c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?*

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. As noted previously, final design of the temporary bridge crossing Sand Creek, a jurisdictional waterway, has not been attained. It is the

goal of the applicant to design a clear-span bridge that would completely avoid having any part of the structure below the ordinary high water mark. Positioning supports above ordinary high water would be considered a less than significant impact. However, a potentially significant impact would occur should any portion of the bridge be placed within the bed of the creek. Due to the fact there is not a final bridge design, it is not possible to state definitively which permits would be necessary to construct the bridge. Permits that may be necessary include a Clean Water Act (Section 404) permit from the USACE, a Streambed Alteration Agreement from the CDFG, and a Section 401 Certification from the RWQCB.

Mitigation Measure for Jurisdictional Waters

B-5 Avoid jurisdictional waters. Construction of all project components shall avoid work below the ordinary high water level, to the extent feasible. For any construction below the ordinary high water level of the creek, a mitigation plan shall be developed that either results in the creation of new jurisdictional waters as replacement for those lost or enhances the quality of existing jurisdictional waters for native plants and wildlife. The mitigation plan for wetland impacts shall be submitted to the CPUC with supporting documentation indicating compliance with USACE, CDFG, and RWQCB requirements.

d. *Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?*

LESS THAN SIGNIFICANT. The area proposed for development consists of 5.1 acres and an access road (consisting of approximately 3.5 acres) that is currently comprised mainly of ruderal non-native grassland, which supports a diverse assemblage of native wildlife species. The proposed site of the substation is surrounded by many more acres of in-kind grasslands. Sand Creek and a small isolated wetland also occur on-site. The movements of various species on- and off-site vary depending on the species in question.

One must differentiate between animals' consistent use patterns in order to assess the importance of an area as a "movement corridor." Wildlife movements generally can be divided into three major behavioral categories:

- Movements within a home range or territory;
- Movements during migration; and
- Movements during dispersal.

While no detailed study of animal movements has been conducted for the study area, knowledge of the site, its habitats, and the ecology of the species occurring on-site permit sufficient predictions about the types of movements occurring in the region and whether or not proposed development would constitute a significant impact to animal movements.

Conversion of approximately 8.6 acres from grassland to support an electrical substation would have a minimal impact to faunal species in the area. Wildlife species presently using the site would continue to move through the project area. Therefore, the project is expected to have a less than significant impact on corridor-type movements of native wildlife, and no mitigation measures are warranted.

- e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The City of Antioch has a Tree Preservation Policy as well as a Creek Development Policy. With mitigation measures recommended above, the project would be expected to adhere to the requirements of local policies and ordinances and therefore would not be in conflict with any such policies or ordinances. Therefore, no additional mitigation measures are warranted.

- f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

NO IMPACT. The City of Antioch is not currently participating in a Habitat Conservation Plan (HCP), Natural Communities Conservation Plan or other such plan. However, the mitigation measures recommended here have been developed with the intent of being consistent with the Eastern Contra Costa County HCP.

B.3.5 Cultural Resources

CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.5.1 Setting

Approach to Analysis of Cultural Resources

A prehistoric and historic site records and literature search of the California Historical Resources Information System, Northwest Information Center, California State University Sonoma, Rohnert Park (CHRIS/NWIC File No. 04-283) was completed by PG&E on October 21, 2004. Reference material at Basin Research Associates was also consulted for the Brentwood and Antioch areas. Specialized listings that were consulted include the *Historic Properties Directory* for Contra Costa County, which includes the most recent updates of the National Register of Historic Places (NRHP), California Historical Landmarks, and California Points of Historical Interest, as well as evaluations of properties reviewed by the State of California Office of Historic Preservation. Additional sources consulted included: *California History Plan*, *California Inventory of Historic Resources*, *Five Views: An Ethnic Sites Survey for California*, and *Historic Civil Engineering Landmarks of San Francisco and Northern California*, as well as local inventories, lists, and historic maps. Several local planning documents were also consulted for information, including the Sand Creek Specific Plan, and the general plans for the cities of Antioch and Brentwood.

Previous Cultural Resources Studies

One previous cultural resources study (S-16916 by William Self Associates, 1994) included the Delta Substation project area. As a result of that study, one historical resource (CA-CCO-682H) was recorded adjacent to the access gate leading to the project area at the intersection of Heidorn Ranch Road and Sand Creek Road. This historical resource site is bordered on the south by Sand Creek, on the east by a gravel road, and on the north by a pumping station. Described as a possible homestead site, there are no structures or identifiable foundations visible at the site, making it difficult to confirm the site as a homestead. It may have served a more utilitarian purpose related to cattle ranching. Features include a circular mortar-covered cistern, a depression filled with shattered brick fragments and mortar, a pile of wood debris, an earthen and log loading ramp, rusted water tank and flatbed trailer, and various imported trees such as walnut, almond, and eucalyptus.

Native American Consultation

PG&E initiated consultation with the Native American Heritage Commission (NAHC) via a letter describing the project and asking for information on cultural resources in the Sacred Lands Inventory for the project area. Debbie Pilas-Treadway of the NAHC responded, noting, that no known Native American

cultural resources are in the immediate project area and provided a list of three Native American contacts for the county of Contra Costa. Contact with the three Native American individuals who may have knowledge of cultural resources in the project area was undertaken prior to CPUC involvement on this project. No responses were received by PG&E before August 2005 (PEA Section 7.2.1, PG&E, 2005).

Paleoenvironment

The Proposed Project area is situated on the western margin of California's Central Valley, one of two principal grassland communities that exist in California (the second being the coastal grassland that covers middle-elevation hillsides from San Francisco to southern Oregon). The combination of climate and arable soils have proven irresistible to farmers, and the extensive agricultural use of the region has resulted in the disappearance of much of the original grassland community (Brown, 1985).

Climatic fluctuations over the past several millennia affected the continent and the central interior valley portion of California. Warm/dry episodes were followed by intermittent cool/moist periods (Moratto et al., 1978). The Holocene or Recent Epoch has seen six cool periods followed by five warm periods. The Altithermal period, ending about 2,900 years ago, was a warm/dry episode that apparently had wide-ranging implications throughout the west, leading to changes in animal migrations and plant productivity and distribution. A cooler period followed for the next 1,400 years, followed by yet another warm/dry climate starting about 600 years ago, which remains to the present day.

Prehistory

The intensive use of shellfish in the Bay Area — a subsistence strategy reflected in both coastal and bay shore middens — indicated a general economic unity in the region during prehistoric times (Moratto, 1984:227). More than 100 shellmounds along the bay shore are documented in Alameda and Contra Costa Counties (Nelson, 1909:322ff.).

The chronological sequence for central California begins with the “Windmill Pattern,” where a “pattern” is a term for a population “characterized by particular technological skills and devices, particular economic modes, including participation in trade networks and practices surrounding wealth, and by particular mortuary and ceremonial practices” (Fredrickson, 1973:7-8). Windmill Pattern sites date from about 6,950 to 3,950 B.P.¹ Earlier occupations from the PaleoIndian Period, dating from about 11,950 to 7,950 B.P., are thought to be buried beneath Holocene alluvial deposits and are not well documented in this part of California (Ragir, 1972). Some scholars have suggested that Windmill Pattern sites are associated with an influx of people from outside of California, who introduced subsistence patterns adapted for a riverine-wetlands environment (Moratto, 1984:207).

Windmill Pattern sites are often situated in riverine, marshland, or valley floor settings, as well as atop small knolls above prehistoric seasonal floodplains. Such an area provided a wide variety of plant and animal resources. Most Windmill Pattern sites have contained burials with remains that are extended ventrally, oriented to the west, and that contain copious amounts of mortuary artifacts. These artifacts often include large projectile points and a variety of fishing paraphernalia — net weights, bone hooks, and spear points. Stone mortars and grindstones for seed and nut processing are also common finds. Other artifacts — such as charmstones, ochre, quartz crystals, and both *Olivella* and *Haliotis* shell beads — suggest a practice of ceremonialism and trade.

¹ Years before present (B.P.); all B.P. dates are calculated from 1950 AD.

The subsequent Berkeley Pattern covers a period from about 3,500 to 1,500 B.P. in the San Francisco Bay region. This pattern shares some attributes with the Windmill Pattern, but Berkeley Pattern sites are much more common and well documented, and therefore better understood, than Windmill Pattern sites. These sites are scattered in more diverse environmental settings, but riverine settings are prevalent.

Deeply stratified midden deposits, which developed over generations of occupation, are common to Berkeley Pattern sites. These middens contain numerous milling and grinding stones for food preparation. Projectile points in this pattern become progressively smaller and lighter over time, culminating in the introduction of the bow-and-arrow during the Late Horizon period. Slate pendants, steatite beads, stone tubes, ear ornaments, and burial techniques that utilize variable directional orientation, flexed body positioning, and a general reduction of mortuary goods are unique to Berkeley Pattern sites (Fredrickson, 1973:125-126; Moratto, 1984:278-279).

The Late Prehistoric Period (formerly the Late Horizon) coincides with the Augustine Pattern and ranges from about 950 to 150 B.P. This period is typified by intensive fishing, hunting, and gathering (especially acorns), a large population increase, expanded trade and exchange networks, increased ceremonial and social attributes, and the practice of cremation in addition to flexed burials. Certain artifacts are also distinctive in this pattern: bone awls used in basketry, small notched and serrated projectile points that are indicative of bow-and-arrow usage, occasional pottery, clay effigies, bone whistles, and stone pipes. The Augustine Pattern and the Late Prehistoric period are recognized as the apex of Native American cultural development in this part of California. It was this emerging pattern that was destroyed by the Spanish mission system and subsequent historical developments (Moratto, 1984:283).

Ethnography

At the time of historic contact with the Spanish missionaries and explorers, the project area was occupied by the Bay Miwok group of Native Americans. The Bay Miwok spoke a language now considered one of the major subdivisions of the Miwok-Costanoan. The Bay Miwok territory extended from the Suisun Bay to just south of Mount Diablo and from there eastward to the Sacramento-San Joaquin Delta (Levy, 1978:399). The tribal group associated with the Antioch area was known as the Chupcan (Levy, 1978:401).

The Miwok were people united by language but broken into tribal groups (independent political entities such as the Chupcan and Wolwon), each occupying defined territories over which they controlled access to natural resources. Extended families lived in domed, conical structures built of thatched grass. Semi-subterranean men's houses were built at the larger village sites, also using thatched grass and earth cover (Kroeber, 1970). Tule or balsa canoes were used to navigate to and from islands and for hunting and gathering forays into the delta.

Given an abundant and continuous subsistence base, ceremony in Miwok life was fairly extensive, and scholars have written much about it based on early ethnographic accounts (Bennyhoff, 1977:11; Kroeber, 1970; Levy, 1978). Rituals associated with death were of great importance. Two forms of interment were practiced and mortuary goods were often placed into the grave at the time of burial. Cremation was also occasionally practiced.

The arrival of the Spanish in the San Francisco Bay Area in 1775 led to the rapid demise of native populations, including the Bay Miwok. Diseases introduced by early expeditions and missionaries killed a large number of local peoples, exemplified by a mass burial of 18 individuals adjacent to the Hotchkiss Mound site near Oakley (Heizer, 1954). Many Chupcans who went to Mission San Francisco and Mission San Jose were baptized in 1810 and 1811 (Milliken, 1995:241).

With abandonment of the mission system and Mexican takeover in the 1840s, the few remaining native people were then forced, by necessity, to work for the ranchos. The native lifestyle in much of northern California ceased to exist by the mid-19th century, and most of the native population vanished with it.

Regional History

Spanish Period (1775-1822). The Spanish period in Alta California began in 1775 when Captain Juan Manuel Ayala's expedition explored the San Francisco Bay and ventured up the Sacramento and San Joaquin rivers in search of a suitable mission site. The first mission in the region was established the following year with the completion of Mission San Francisco de Asis (Mission Dolores) in San Francisco. The mission era ensued, lasting over the next 46 years, leading to the establishment of numerous missions and outposts, and the subsequent "missionization" of native groups, which contributed to their decimation due to disease and subjugation.

The earliest historical accounts of the project area come from the Spanish explorers who ventured to Mount Diablo in the late 18th century. Although it is not known if they came into the project area, the Anza-Font expedition of 1776 traveled along the southern shore of Suisun Bay until reaching Antioch where they noticed numerous rancherias (Cook, 1957:135).

Mexican Period (1822-1848). Under the Spanish, the missions controlled the land. After Mexico seceded from Spain in 1822, land was granted to private citizens, a practice that increased significantly after the 1833 act of the Mexican legislature that established the secularization of the missions. By 1845, the last of the mission land holdings were relinquished, opening the way for the large ranchos common to California in the mid-1800s. Predominant land-use on the ranchos was the raising of livestock and ranching. Jose Noriega took possession of the Rancho de Los Meganos (sand dunes ranch) in 1834, covering about 17,000 acres of land from the foot of Mount Diablo to the mouth of the San Joaquin River. No standing architectural remains from this period are known to exist in the area.

American explorers, mostly traders and beaver trappers, were also flocking to the west during this time to settle. Deterioration of relations between the United States and Mexico resulted in the Mexican War, which ended with Mexico relinquishing California to the United States under the Treaty of Guadalupe Hidalgo of 1848.

American Period (1838-present). John Marsh acquired from Jose Noriega the Rancho de Los Meganos and became the first Anglo-American to settle in Contra Costa County (Emanuel, 1993:204). From 1838 until he built what became known as the "Stone House" in 1856, Marsh lived on the rancho in a small adobe structure. Marsh reportedly moved a village of natives across Marsh Creek to the northwest in order to build the Stone House (site record for CA-CCO-548 by Farris, 1987). Remnants of Marsh's stone house are located approximately 4.5 miles southeast of the project study area.

The discovery of gold in the Sierra Nevada in 1848 produced a major population increase in the northern half of California as emigrants sought gold or various jobs producing goods or services for miners. Land use changes resulted as livestock grazed some native grasses to extinction, woodlands were cut for lumber, railroad ties, and mine timbers, and agricultural development occurred on nearly all arable land. The discovery of coal on the northern slopes of Mt. Diablo in 1848 also drew settlers to the region. However, by the mid-1880s when the coal boom was over, the mining "boom towns" were abandoned. The coal mining industry dominated the local economy for a period of 30 years; in the case of Somersville mine, limited activity continued as late as 1905. High quality sand was also mined between 1920 and 1949 (Kyle, 1990). After the mines closed, the population centers of Antioch and Brentwood survived due to their reliance on agriculture, including olive and almond orchards.

Earlier and ongoing oil and gas operations, including an underground gas pipeline that traverses Sand Creek near Heidorn Ranch Road, is evident. The project area is near the western edge of the Brentwood Oil Field, and to the east of that is the South Oakley Gas Field and East Brentwood Gas Field. The Brentwood Oil Field is one of the few active oil fields in Northern California, but it generally produces gas. Eleven wells were in production in the South Oakley Gas Field during the peak year of 1984. At peak production in 1981, East Brentwood Gas Field consisted of 16 wells (10 producers and 6 dry holes) with a total of 15.1 billion cubic feet of gas (Adams, 1995:23).

The region is currently a mix of small farms, cattle ranches, and rapidly expanding urban development.

B.3.5.2 Environmental Impacts and Mitigation Measures

a. Would the project cause a substantial adverse change in the significance of an historical resource as defined in §15064.5 [§15064.5 generally defines historical resource under CEQA]?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. There are no known historical resources within the project site. There is one recorded historical resource (CA-CCO-682H) adjacent to the access gate at the intersection of Heidorn Ranch Road and Sand Creek Road. It is described as a possible homestead site, although there are no structures or identifiable foundations visible at the site, making it difficult to confirm the site as a homestead. Features include a circular mortar-covered cistern, a depression filled with shattered brick fragments and mortar, a pile of wood debris, an earthen and log loading ramp, rusted water tank and flatbed trailer, and various imported trees such as walnut, almond, and eucalyptus.

Disruption of the this historical resources would result in a potentially significant impact. Mitigation is recommended for avoiding this impact. With the following recommended mitigation measure (CR-1), temporary fencing would be installed around the site boundaries to protect the site from any construction-related impacts, and a program of recovery would be implemented if disruption of the site cannot be avoided. This mitigation would reduce the potential impact to a less than significant level.

Mitigation Measure for Cultural Resources

CR-1 Install pre-construction fence to protect historical resource. Prior to the initiation of construction or ground-breaking activities, archaeologists shall install temporary fencing along the southeast boundary of historic resource site CA-CCO-682H. The fence shall be situated at least 10 to 15 feet from the actual boundary of the site~~from the northwest side of the existing access road, beginning at the Sand Creek crossing and continuing north for approximately 200 feet.~~ The fence shall be erected to form a protective buffer around the general site boundaries so the actual site boundaries are not revealed. If relocation of the creek crossing disturbs the area circumscribed by the fence, then project archaeologists shall establish a research and data recovery program to test the site and determine the significance of the resource. The data recovery program shall include procedures to properly report and curate the resource in a manner consistent with standards mandated by the California Office of Historic Preservation (OHP). The research and data recovery program shall be submitted to the CPUC for review and approval at least 30 days before disruption of the pre-construction fence.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

LESS THAN SIGNIFICANT. There are no archaeological resources recorded within the project area. No evidence of prehistoric or historic archaeological resources was observed during the survey of the project area.

Research suggests a low to moderate regional archaeological sensitivity based on the few locations of recorded prehistoric and historic archaeological sites within two miles of the project area and archaeological compliance studies conducted in the project area. A study entitled *Geoarchaeological Implications of Holocene Landscape Evolution in the Los Vaqueros Area* suggests that the Sand Creek area has a potential for buried archaeological sites (Meyer, 1996). The project area is on the south side of Sand Creek.

Previously unknown subsurface intact prehistoric deposits could be inadvertently unearthed during ground-disturbing activities associated with project construction. To minimize the effects of this potential impact, PG&E has committed to implement the Applicant-Proposed Measure (APM) Cult-1, as identified in the Project Description, Table B.1-2. This measure would reduce this impact to a less than significant level because impact to previously unrecorded or unknown archaeological resource discovered during the course of construction would be avoided or provided proper treatment.

c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

LESS THAN SIGNIFICANT. A review of geologic and soil maps for Contra Costa County from the U.S. Department of Agriculture Soil Conservation Service and U.S. Geological Survey indicates that soil types present in this area are of a type unlikely to contain paleontological resources, sites, or unique geologic features within the project area. An examination of soil data for the project vicinity shows that the project area is comprised of Altamont-Fontana and Capay-Rincon clay associations (USDA, 1977). These soils are formed in alluvium from sedimentary rock. The soils have been a relatively dry, stable land surface for hundreds of years and are unlikely to contain paleontological resources.

d. Would the project disturb any human remains, including those interred outside of formal cemeteries?

LESS THAN SIGNIFICANT. There appears to be a low potential for inadvertent discoveries of buried archaeological deposits during construction within the project area, including the access road. No human remains are known to be located in the project area. However, there is always the possibility that unmarked burials may be unearthed during construction. To minimize the effects of this potential impact, PG&E has committed to implement the APM Cult-2, as identified in the Project Description, Table B.1-2. This measure would reduce this impact to a less than significant level.

According to the California Health and Safety Code, disturbance of Native American human remains is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC as specified by the APM.

B.3.6 Geology and Soils

GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic groundshaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.6.1 Setting

The project is located on the south bank of the San Joaquin River, in the eastern San Francisco Bay region on the boundary between the Coast Range and the Great Valley Geomorphic Province of California. Geologically, the Great Valley Geomorphic Province consists of a deep, northwest-trending sedimentary basin that borders the east side of the Coast Range and the west side of the Sierra Nevada Mountains. The Great Valley Geomorphic Province is referred to north of the site as the Sacramento Valley and as the San Joaquin valley south of the site. The Sacramento and San Joaquin Valleys drain into San Francisco Bay and then the Pacific Ocean through gaps in the Coast Ranges.

The Coast Ranges consist of a sequence of northwest-trending mountains and valleys, aligned to and adjacent to the California coast line. Geologically, the Coast Ranges are comprised of a series of fault-bounded tectonic blocks. All of the boundary faults between the blocks are part of the overall San Andreas Fault system (Wagner, 1990). The San Andreas Fault system, the major fault system in California, is the boundary between two major parts of the earth's crust, the North American plate and the Pacific plate. The relative movement between these two plates causes the earthquakes that occur along the San Andreas and related fault systems. The San Andreas Fault Zone occurs approximately 72 kilometers (44 miles) west of the proposed substation site at its closest point. Other faults associated with the San Andreas Fault system plate boundary, including the Hayward Fault Zone, the Concord Fault, the Greenville Fault, and others, occur much closer to the site and could have an impact on the proposed facilities. The relative location of the faults to the proposed facility and the fault features are described in Table B.3.6-1, which shows the known active faults that could have some effect on the site.

Table B.3.6-1. Known Active Faults within 70 Kilometers of Proposed Delta Substation Site

Name of Fault	Approximate Distance and Direction to Closest Surface Trace (km)	Length (km)	Slip Rate (millimeters per year)	Maximum Earthquake Magnitude **
Greenville Fault (north segment)	12 W	27	2	6.6
Concord Fault	22 WSW	17	4	6.2
Calaveras Fault (northern segment)	27 WSW	45	6	6.8
Greenville Fault (south segment)	29 S	24	2	6.6
Green Valley Fault (south segment)	31 WNW	25	5	6.2
Hayward Fault Zone (southern segment)	42 WSW	52	9	6.7
Hayward Fault Zone (northern segment)	44 W	35	9	6.4
Green Valley Fault (north segment)	50 NNW	14	5	6.2
West Napa Fault	50 NW	30	1	6.5
Calaveras Fault (central segment)	58 SSW	59	15	6.2
Rodgers Creek Fault Zone	64 WNW	62	9	7.0
San Andreas Fault Zone (peninsula segment)	72 WSW	85	17	7.1
Mount Diablo Blind Thrust	— *	25	2	6.6
Great Valley 5 Blind Thrust	— *	28	1.5	6.5
Great Valley 7 Blind Thrust	— *	45	1.5	6.7

Source: Jennings, 1994. PG&E, 2005.

km = kilometers

W = west

WSW = west-southwest

S = south

WNW = west-northwest

NNW = north-northwest

NW = northwest

SSW = south-southwest

* Not applicable. Blind thrust faults do not have a surface trace. The distance from the site to the fault plane was not determined for this study, but these faults were considered in the probabilistic ground-shaking seismic hazard analysis described above.

** Maximum moment magnitude with a 90 percent probability of not being exceeded in 50 years.

The project area occurs in the lowermost portion of the foothills east of Mount Diablo at the northern end of the Diablo Range (part of the larger Coast Ranges). The project site will be located in a small Quaternary alluvium filled valley (Lone Tree Valley) that drains from west to east through the low foothills toward the north end of the San Joaquin Valley. The Quaternary alluvium exposed at the surface at the site vicinity has been mapped as Holocene (11,000 years to present). Based on the 1:75,000-scale mapping of bedrock exposures near the southern end of the substation parcel and on the 1:24,000-scale USGS topographic mapping, it is estimated that the thickness of alluvium beneath the substation parcel, ranges from practically non-existent at the south property line to about 100 feet thick at the north property line. Design-level engineering studies will provide more specific information on the thickness of and nature of the alluvium in the project area (PG&E, 2005). The alluvium beneath the proposed substation site is underlain by the lower member of the Eocene (55 to 38 million years ago) Markley Formation, with bedding dipping generally northward at about 12 degrees. This bedrock member is described in literature as a thin-bedded to massive sandstone with minor siltstone and mudstone. Beneath this member is a thick sequence of marine and non marine sedimentary bedrock units of Tertiary (0.63 to 2 million years ago) to Jurassic age (205 to 138 million years ago). These bedrock units are exposed in the higher

foothills and on the eastern flank of the Diablo Range east of the site, and are underlain by basement consisting of the Jurassic Coast Range Ophiolite, presumably in fault contact with underlying Franciscan Complex (PG&E, 2005).

The soil profile in the vicinity of the proposed substation site typically consists of:

- approximately 12 inches surface layer of dark grayish-brown neutral clay loam,
- approximately 17 inches upper subsoil of brown neutral or mildly alkaline clay,
- approximately 9 inches of lower subsoil of yellowish-brown, moderately alkaline silty clay loam, and
- the substrata of light yellowish-brown, moderately alkaline, silty clay loam and heavy loam that extend to a depth of more than 60 inches.

The Rincon soil series is montmorillonitic. The upper subsoil horizon (1- to 29-inch depth) has a high shrink-swell potential. The surface horizon and lower subsoil horizons have a moderate shrink-swell potential.

B.3.6.2 Environmental Impacts and Mitigation Measures

a. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

LESS THAN SIGNIFICANT. There are no known active faults in the immediate vicinity of the proposed substation site (California Geological Survey, 2004). As such, the hazard of direct surface displacement by faulting of any portion of the proposed facility would be very low to non-existent.

ii) Strong seismic ground shaking?

LESS THAN SIGNIFICANT. Ground motion due to earthquakes on faults located distant from the site is a potential hazard since the overall site region is seismically active. Earthquakes have occurred in historic time with surface displacement on the San Andreas Fault Zone, the Hayward Fault Zone, the Concord Fault, the Greenville Fault, the Calaveras Fault, and other minor faults in the region (Jennings, 1994). In addition, there have been earthquakes in historic time associated with movement along other faults at depth without surface displacement. Table B.3.6-1 summarizes the key characteristics of the major active faults that occur within approximately 70 kilometers of the project site. The approximate 70-kilometer search radius was selected specifically to include the main San Andreas Fault Zone. Active faults are those that show evidence of movement within Holocene time (last 11,000 years).

Considering active faults throughout the region, the California Geological Survey has published maps of estimated probabilistic ground acceleration for the region. At the project site, 0.4 g (where “g” is the acceleration due to gravity) is the estimated peak horizontal ground acceleration with a 90 percent probability of not being exceeded in 50 years (California Geological Survey, 2004). This probabilistic horizontal ground acceleration has an approximate 1 in 475 probability of occurrence each year. A properly designed facility would reduce the threat of damage to the proposed facilities as a result of the potential maximum ground acceleration to less than significant levels.

iii) Seismic-related ground failure, including liquefaction?

NO IMPACT. There are no liquefiable soils or unstable geologic units in the Proposed Project area. There has not historically been substantial subsidence in the project area (PG&E, 2005). The site is relatively flat ground in an area of soils belonging to the Rincon Series of the Capay-Rincon Soil Association as mapped by the U.S. Department of Agriculture Soil Conservation Service. They are well-drained soils that formed as alluvial fill derived from the surrounding sedimentary rocks. There are no known saturated sandy soils in the area of the proposed facilities and thus no soils subject to liquefaction during a seismic event. Bedrock crops out near the southern boundary of the site. The geologic units in the project area are not highly susceptible to liquefaction (Knudsen, et al., 2000), and the likelihood of liquefaction or ground failure occurring in the project area due to large earthquakes on the major regional fault systems are moderately low to very low (ABAG, 2004).

iv) Landslides?

NO IMPACT. The Proposed Project would be in an area of soils belonging to the Rincon Series of the Capay-Rincon soil association as mapped by the U.S. Department of Agriculture Soil Conservation Service. The soil series consists of well-drained relatively flat lying soils and are not subject to landslide or subsidence. The proposed access road would be on relatively flat ground and not close to any hillside or other slope that would be potentially unstable. Development of the proposed substation site, including the associated excavation of 8,000 cubic yards of the hillside and placement of 50,000 cubic yards to make berms around the site, would not result in unstable slopes or landslides with proper design and implementation of best engineering management practices during construction and landscaping. No impact is expected.

b. Would the project result in substantial soil erosion or the loss of topsoil?

LESS THAN SIGNIFICANT. The soil type at the proposed substation, interconnection, and access road alignment is a Rincon clay loam, which occurs in nearly level areas. Runoff and permeability are slow, and the hazard of erosion is none to slight where the soil is disturbed. Construction would occur in relatively flat terrain. Surface disturbance would be minimized to the extent consistent with safe and efficient completion of the project scope of work. Erosion control best management practices (BMPs) would be used where excavation and grading occurs. Topsoil would be salvaged from areas where grading would otherwise result in loss of topsoil, and the salvaged soil would be used to reclaim areas of temporary construction disturbance. Once temporary surface disturbances are complete, areas that would not be subject to additional disturbance would be stabilized by landscaping or, as in the case with agricultural lands owned by others, returned to agricultural land use. With proper construction practices there should be no problems with erosion and transport of sediment from the site. Engineering-level geotechnical studies would be completed to assure that the project design adequately accounts for site-specific soil conditions. Considering these factors, there should be little or no impact due to erosion or loss of topsoil. Potential impacts would be less than significant.

c. Would the project be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

NO IMPACT. The Proposed Project would be in an area of soils belonging to the Rincon Series of the Capay-Rincon soil association as mapped by the U.S. Department of Agriculture Soil Conservation Service. The soil series consists of well-drained relatively flat lying soils and are not subject to off-site

landslide, liquefaction, subsidence, lateral spreading, or collapse. The proposed access road would be on relatively flat ground and not close to any hillside or other slope that would be potentially unstable. The proposed substation site would involve excavation of a hillside slope and placement of material for berms that would occur with implementation of best engineering management practices that would avoid creating potentially unstable slopes. No impact is expected.

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

LESS THAN SIGNIFICANT. The expansive soil properties of the Rincon soil series (montmorillonitic) present at the Proposed Project site would need to be taken into consideration during design for foundation construction. Engineering-level geotechnical studies would be completed to assure that the project design adequately accounts for these soil types. There should be no impact or risk to life or property under these conditions. Impacts would be less than significant.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

NO IMPACT. Stormwater runoff from the paved portion of the substation would pass through the substation's Spill Prevention, Countermeasure, and Control (SPCC) retention pond. There would not be any other wastewater, on site sewage, or other liquid waste disposal systems on site. There would not be any impact.

B.3.7 Hazards and Hazardous Materials

HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. For a project located 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, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.7.1 Setting

This section addresses the baseline issues related to environmental hazards and hazardous materials. Environmental hazards include existing subsurface contamination, the risk of wildfire, and aircraft safety. Hazardous materials include fuel, oil, and lubricants. If encountered, contaminated soil can pose a health and safety threat to workers or the public.

The project area has a history of use for agriculture and for oil and gas production that may have exposed area soils or groundwater to contamination. Plugged and abandoned oil wells and gas wells are present in the area and buried pipelines from wells to oil/water separators, storage tanks, and/or main pipelines may remain in place. The Sand Creek Specific Plan identifies a pipeline easement crossing Sand Creek on a north-south alignment in the vicinity of the proposed substation site, and abandoned wells are mapped in the vicinity of the proposed access road and bridge over Sand Creek (Antioch, 2003b). Historic use of agricultural herbicides to control star thistle is expected to have been minimal (Antioch, 2003b).

The role of various State-level hazardous materials oversight agencies is outlined as follows (PG&E, 2005):

- **Department of Toxic Substances Control (DTSC).** California Environmental Protection Agency's DTSC regulates hazardous waste, oversees the cleanup of existing contamination, and looks for ways to reduce the hazardous waste produced in California. The DTSC regulates hazardous waste in California under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code.
- **Regional Water Quality Control Board (RWQCB).** The Central Valley RWQCB is responsible for protecting the beneficial uses of water resources in the project vicinity. The RWQCB's Water Quality Control Plan (Basin Plan) sets forth implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. The Basin Plan establishes both numerical and narrative objectives and standards for water quality specific to the Central Valley aimed at protecting aquatic resources. Discharges to surface waters in the region are subject to regulatory standards set forth in the Basin Plan.
- **Certified Unified Program Agency (CUPA).** The Contra Costa Hazardous Materials Program is the local CUPA for Contra Costa County that oversees hazardous waste release incident responses and inventories, accidental release plans (i.e., business plans), storage tanks, and stormwater conveyance system contamination.

To identify existing sites of hazardous materials, PG&E sponsored a review of environmental databases by Environmental Data Resources, Inc. (EDR, 2004). The database searches covered locations about one-half mile from the existing Contra Costa-Cayetano 230 kV transmission line and additional areas to the north. The searches did not cover all areas within one-half mile south and east of the proposed access road and bridge. The federal and State databases listed below were reviewed:

- **Federal ASTM Standard and Supplemental Databases.** National Priority List (NPL), Proposed NPL, Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), CERCLIS No Further Remedial Action Planned, Corrective Action Report, Resource Conservation and Recovery Information System (RCRIS), Emergency Response Notification System, U.S. Brownfields, Toxic Chemical Release Inventory System, Toxic Substances Control Act, and others.
- **State and Local Databases.** Annual Workplan Sites, Calsites, Toxic Pits Cleanup Act Sites, Solid Waste Information System, Waste Management Unit Database, Bond Expenditure Plan, Voluntary Cleanup Program Properties, Leaking Underground Storage Tanks (LUST), Aboveground Petroleum Storage Tank Facilities (AST), Cleaner Facilities, Waste Discharge System, Hazardous Waste Manifests (HAZNET), and others.

The environmental databases indicate that two sites occur in the vicinity of the Proposed Project. The Sand Creek Station at the corner of Heidorn Ranch Road and Sand Creek Road is an active site listed by Contra Costa County requiring registration of its hazardous material inventory via a Hazardous Materials Management Plan (HMMP), although the site is not included on any other database as a site of possible contamination. The Sand Creek Station site is in the vicinity of the Proposed Project, on the north side of the intersection of the proposed access road and Heidorn Ranch Road. The second site is a former Brentwood Oil and Gas Field site (Oxy USA Inc., Prewett 4-5) that is undergoing remediation for petroleum spills at 5400 Mojave Way, approximately one mile northwest of the proposed substation site. This site is listed by the Regional Water Quality Control Board (RWQCB) as part of the California Spills, Leaks, Investigations and Cleanup Program (CA SLIC) that identifies active toxic site investigations. No other sites of known contamination or sites of underground storage tanks or leaking underground storage tanks are near Proposed Project activities.

B.3.7.2 Environmental Impacts and Mitigation Measures

a. *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

LESS THAN SIGNIFICANT. Operation and maintenance of the proposed substation would involve periodic and routine transport, use, and disposal of minor amounts of hazardous materials, primarily petroleum products (lubricating and insulating oils). Batteries would be within containment to prevent release of battery acid in the case of a leak or rupture. Proper handling of these materials would avoid any significant hazards to the public or the environment, which would minimize the impact of use of these materials.

Hazardous or flammable materials used during construction would consist primarily of vehicle fuels (gasoline and diesel), oil, grease, and other fluids (hydraulic fluid, antifreeze, transmission fluid) for construction equipment. Liquid concrete would also be used during foundation construction. To avoid inadvertent release of these materials and proper response actions, PG&E has committed to implementing a Spill Prevention, Countermeasure, and Control (SPCC) Plan (APM Hydro-2), a Hazardous Substance Control and Emergency Response Plan (APM Haz-1), and environmental training for its field personnel (APM Haz-2) through its APMs (see Project Description, Table B.1-2). Best Management Practices would also be included as part of the Stormwater Pollution Prevention Plan (SWPPP) (APM Hydro-1). With these measures in place, transport, use, and disposal of hazardous materials would not pose a significant hazard, and the impact would be less than significant.

b. *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

LESS THAN SIGNIFICANT. Implementation of PG&E's proposed measures for spill prevention and hazardous substance control (in APMs identified above) would reduce the potential impact from upset or accidental spills of hazardous materials to a less than significant level.

c. *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

NO IMPACT. No schools are currently located within one-quarter mile of the proposed Delta Substation. Preliminary land use plans for development north of Sand Creek presently specify allocating approximately 10 acres of the nearby Pulte brand Del Webb Senior Housing Project for a medically focused magnet school (PG&E, 2005, Deficiency Responses #26 and 34). This future school site would be approximately 2,000 feet west-northwest of the proposed substation site. Because no school is within one-quarter mile of the site there would be no impact.

d. *Would the project 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 it create a significant hazard to the public or the environment?*

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. A review of environmental databases for the location of the Proposed Project was sponsored by PG&E using Environmental Data Resources, Inc. (EDR, 2004). Two sites were identified within one mile of the proposed substation site and its proposed access road, although the searches did not cover all areas within one mile of all project components. The Sand Creek Station and Brentwood Oil and Gas sites are both up-gradient of the pro-

posed access road and bridge, on the north side of Sand Creek. Because the proposed Delta Substation would be south of Sand Creek, and it would not be located on a site that is included on a list of hazardous materials sites, no impact would occur at the proposed substation site. Because of the proximity of the Sand Creek Station to the proposed access road and bridge, the lack of a complete database search for areas south and east of the proposed access road and bridge, and the history of oil and gas activities in the area, there is a possibility, albeit limited, that access road grading or excavation for the bridge could reveal previously unknown subsurface contamination. With implementation of the mitigation measure described below and PG&E's APMs (see Project Description Table B.1-2), the potential hazard of encountering previously unknown subsurface contamination would be reduced to a less than significant level.

Mitigation Measure for Hazards and Hazardous Materials

H-1 Stop work upon encountering contamination. If evidence of soil and/or groundwater contamination is encountered during grading or excavation, work shall stop until the material is properly characterized and appropriate measures are taken to protect human health and the environment immediately. The construction superintendent, designated PG&E and CPUC personnel, and applicable regulatory agencies shall be notified immediately. Contingency planning for such an event shall be conducted prior to start of work. The nature and extent of contamination shall be identified through soil and/or water testing. Prior to disturbing additional contamination, PG&E shall prepare and submit a work plan detailing proposed remedial action for approval by the appropriate jurisdictional agency (i.e., the Department of Toxic Substances Control, the Regional Water Quality Control Board, and/or the City of Antioch, depending on the type of contamination). PG&E shall submit to the CPUC copies of correspondence with regulatory agencies, the work plan, and any permits or approvals obtained, and appropriate remedial action proposed and approved by the CPUC prior to disturbing additional material.

e. For a project located 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, would the project result in a safety hazard for people residing or working in the project area?

NO IMPACT. No airports lie within two miles of any part of the Proposed Project; therefore, there is no impact to public safety associated with aircraft operations.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

NO IMPACT. No private airstrips intersect with of any part of the Proposed Project area; therefore there is no impact to public safety associated with aircraft operations.

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

NO IMPACT. Construction of the proposed substation would occur in an undeveloped area, and access would be provided via a new dedicated access road and bridge across Sand Creek. Construction would not involve obstruction of existing roadways, and work would not impair or interfere with adopted emergency response plans or emergency evacuation plans. Operation and maintenance of the proposed substation would also have no impact to adopted emergency response plans or emergency evacuation plans. Additional information on project impacts to emergency vehicle access is provided in Section B.3.15, Transportation/Traffic.

- h. Would the project 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?*

LESS THAN SIGNIFICANT. There is a significant brush fire hazard in the undeveloped lands surrounding the Proposed Project throughout much of the year. Portions of the project would be built across open areas susceptible to wildland fires. Heat or sparks from vehicles or equipment can ignite dry vegetation and cause a fire. Vehicles and equipment would primarily remain on existing paved roads and the proposed paved access road and parking areas. PG&E proposes to clear work areas of brush to reduce the fire potential and to direct project personnel to park away from dry vegetation and require personnel vehicles to carry water and shovels or fire extinguishers in times of high fire hazard. PG&E would also prohibit trash burning and restrict smoking to cleared areas. By following these preventative measures, the project would not expose people or structures to a significant risk of fire, and the impact of wildland fires would be less than significant.

B.3.8 Hydrology and Water Quality

HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate Regional Water Quality Control Board water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially deplete groundwater supplies or interfere substantially with groundwater discharge such that there would be a net deficit in the aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. 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 substantial erosion or siltation on or off site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. 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 site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Place within 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j. Cause inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.8.1 Setting

The proposed Delta DPA Capacity Increase Substation Project would occur on 5.1 acres of flat and hilly rural grass land in the City of Antioch. The project site is approximately 100 feet south of Sand Creek. Sand Creek drains a watershed of approximately 14 square miles. Aside from a seasonal channel tributary in the vicinity of the access road, there are no other drainage features within the project area.

The 100-year flood hazard zone for Sand Creek is shown in the Project Description, Figure B.1-8. The proposed substation site would be outside of the Sand Creek 100-year floodplain. The temporary access road for the project site will cross Sand Creek with a 50-foot by 24-foot bridge and its approaches would be within the 100-year floodplain, which is approximately 200 feet wide at this location.

B.3.8.2 Environmental Impacts and Mitigation Measures

a. Would the project violate any water quality standards or waste discharge requirements?

LESS THAN SIGNIFICANT. The Proposed Project would not involve the discharge of waste into a watercourse.

b. Would the project 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 (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

LESS THAN SIGNIFICANT. Water for landscaping would be obtained during the initial years of substation operation from a water well that would need to be permitted and built by PG&E as part of the substation. If the proposed well fails, municipal water would be trucked to the site and kept in a holding tank for landscaping purposes during the dry season. Eventually, a connection to the municipal water system would be made as the municipal system would likely be a part of future adjacent development. The extraction of ground water for on-site landscaping would not deplete groundwater supplies because relatively small quantities of water would be used, and the water would be used only on-site, which would provide recharge to the local groundwater of any water not taken up by plants or lost to evaporation. No substantial disturbance of ground water is expected from this project.

c. Would the project 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, which would result in substantial erosion or siltation on or off site?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The proposed bridge would potentially obstruct the floodplain of Sand Creek. The hydraulic effect of this obstruction is unknown. The obstruction could divert flows to the extent that erosion could occur in the vicinity of the bridge. To address the potentially significant impact of altering the flood flow course of Sand Creek, Mitigation Measure W-1, below, is recommended for reducing this impact to less than a significant level.

Mitigation Measure for Hydrology and Water Quality

W-1 Prepare a hydraulic and erosion study of the proposed bridge, and design to ensure no adverse hydraulic or erosion impact. Prior to issuance of a grading permit, a hydraulic/erosion analysis shall be conducted by a registered civil engineer demonstrating the effect of the proposed bridge on the Sand Creek floodplain, and documenting any increased erosion hazard. The bridge design shall include features to ensure no adverse impact. If needed, modifications could include, but not be limited to, removal of the existing culvert, channel widening, and/or erosion-control measures.

d. Would the project 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 site?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The proposed bridge would potentially obstruct the floodplain of Sand Creek. The hydraulic effect of this obstruction is unknown. The obstruction could divert flows to the extent that the floodplain limits could be altered. Mitigation Measure W-1 (identified above) would reduce this impact to less than a significant level.

- e. Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems to provide substantial additional sources of polluted runoff?*

LESS THAN SIGNIFICANT IMPACT. The project site would incrementally increase runoff locally through creation of impervious area of less than the substation footprint of 3.5 acres. Drainage swales would be provided on the sides of the temporary road to allow infiltration of runoff from the road. Within the context of the 14-square-mile watershed of Sand Creek, this impact would not be substantial, and no existing or planned stormwater drainage system would be affected.

- f. Would the project otherwise substantially degrade water quality?*

LESS THAN SIGNIFICANT. The Proposed Project would include PG&E's implementation of Applicant-Proposed Measures identified in the Project Description, Table B.1-2. The APMs related to water quality include preparation of a Stormwater Pollution Prevention Plan (SWPPP) that would address best management practices and prevent substantial degradation of water quality.

- g. Would the project place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

NO IMPACT. The Proposed Project would not place housing within a 100-year floodplain.

- h. Would the project place within a 100-year floodplain structures that would impede or redirect flood flows?*

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The discussion above regarding Item (d) addresses the potential effects of placing the proposed temporary bridge within the 100-year floodplain. Mitigation Measure W-1 would reduce this impact to less than a significant level.

- i. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*

NO IMPACT. The project site is not protected by a levee nor is it downstream of a dam.

- j. Would the project cause inundation by seiche, tsunami, or mudflow?*

NO IMPACT. The project area is not subject to inundation by seiche, tsunami, or mudflow.

B.3.9 Land Use and Planning

LAND USE PLANNING

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.9.1 Setting

The Delta DPA Capacity Increase Substation Project would be located within the City of Antioch, Contra Costa County (see Project Description, Figure B.1-1). The proposed substation site and surrounding parcels are presently being used for agriculture or open space. The substation site would be adjacent to and east of the existing transmission line corridor for the Contra Costa-Cayetano 230 kV circuit, and the site would be about 100 feet south of Sand Creek. Surrounding land uses are described in more detail in Section B.1.6 of the Project Description.

The site of the proposed Delta Substation site and its proposed access road and bridge would be within the Sand Creek Focus Area identified in the 2003 City of Antioch General Plan, adopted in November 2003. The Sand Creek Focus Area is approximately 2,712 acres entirely within the southern city limits, bordering the City of Brentwood.

The adopted General Plan includes policy direction for the Sand Creek Focus Area that is intended for future development and environmental management of the area. The policies established a need for a specific plan, or alternative planning process to be determined by the City Council, to provide for land uses that are not “employment-generating,” and financing public services, open space preservation, community design, recreational amenities, and other community improvements (Antioch, 2003). The Antioch City Council stopped work on the specific plan. Therefore, the land use designations and zoning classifications included in the drafts of the Sand Creek Specific Plan have not been approved and adopted by the City of Antioch. Nevertheless, there is planning guidance with regard to the area. The adopted 2003 General Plan designations were reflected in the proposed Sand Creek Specific Plan, and the designation for the parcel presently owned by PG&E is “Public/Quasi Public.” The proposed access road and transmission tower modifications would occur on lands proposed to be “Open Space/Senior Housing” and “Open Space/Estate,” respectively. More detail on the General Plan designation and zoning of the Proposed Project site is provided in Sections B.1.7 and B.1.8 of the Project Description, respectively.

The adopted policies of the 2003 General Plan for the Sand Creek Focus Area include those shown in Table B.3.9-1.

Table B.3.9-1. Land Use Policies for Sand Creek Focus Area

Policy Paragraph	Text of Selected Policies
(b.)	Sand Creek Focus Area development shall make a substantial commitment to employment-generating uses. Up to 280 acres are to be devoted to employment-generating uses within the areas shown for Business Park and Commercial/Open Space, in addition to the area shown as Mixed Use Medical Facility. Appropriate primary land uses within employment-generating areas include: <ul style="list-style-type: none"> - Administrative and Professional Offices - Research and Development - Light Manufacturing and Assembly - Hospital and related medical uses
(c.)	Secondary, support and ancillary uses within employment-generating areas include: <ul style="list-style-type: none"> - Banks and Financial Services - Business Support Services - Eating and Drinking Establishments - Health Clubs and Spas - Lodging and Visitor Services - Storage and Distribution – Light - Civic Administration - Cultural Facilities - Day Care Centers
(q.)	Areas identified as Public/Quasi Public and School in Figure 4.8 are intended to identify locations for new public and institutional uses to serve the future development of the Sand Creek Focus Area. Development within these areas is to be consistent with the provisions of the Public/Institutional land use category [. . .] of the Land Use Element.
(r.)	Sand Creek, ridgelines, hilltops, stands of oak trees, and significant landforms shall be preserved in their natural condition. Overall, a minimum of 25 percent of the Sand Creek Focus Area shall be preserved in open space, exclusive of lands developed for golf course use.
(s.)	Adequate buffer areas adjacent to the top of banks along Sand Creek to protect sensitive plant and amphibian habitats and water quality shall be provided. Adequate buffer areas shall also be provided along the edge of existing areas of permanently preserved open space adjacent to the Sand Creek Focus Area, including but not limited to the Black Diamond Mines Regional Park. Buffers established adjacent to existing open space areas shall be of an adequate width to minimize light/glare, noise, fire safety, public safety, habitat, public access impacts within the existing open space areas, consistent with the [. . .] Open Space Transitions and Buffers Policies of the General Plan.
(w.)	To mitigate the impacts of habitat that will be lost to future development within the Focus Area, an appropriate amount of habitat shall be preserved on- or off-site per the compensatory provisions of the Framework Resource Management Plan prepared for the Sand Creek Focus Area (attached as Appendix A of the General Plan).
(y.)	Chaparral, scrub, and rock outcrop community within the western portion of the Focus Area (west of Empire Mine Road), as well as adjacent grassland community that is suitable habitat for the Alameda whipsnake (<i>masticophis lateralis euryxanthus</i>) shall be retained in natural open space. Within other portions of the Focus Area, the chaparral, scrub, and rock outcrop shall be retained in natural open space contiguous to the required grassland linkage to function as a buffer and protect the grassland linkage south of the chaparral, scrub, and outcrop community.
(bb.)	Mass grading within the steeper portions of the Focus Area (generally exceeding 25 percent slopes) is to be avoided.
(dd.)	Project entry, streetscape, and landscape design elements are to be designed to create and maintain a strong identification of the Sand Creek Focus Area as an identifiable “community” distinct from Southeast Antioch.

Source: City of Antioch General Plan, Section 4.4.6.7(b) (Antioch, 2003).

The site of the Delta DPA Capacity Increase Substation Project is within the Eastern Contra Costa County Habitat Conservation Plan (HCP). The City of Antioch is not currently participating in a Habitat Conservation Plan (HCP), Natural Communities Conservation Plan or other such plan. The mitigation measures recommended in Section B.3.4, Biological Resources, were developed with the intent of being consistent with the Eastern Contra Costa County HCP.

B.3.9.2 Environmental Impacts and Mitigation Measures

a. Would the project physically divide an established community?

NO IMPACT. The proposed Delta Substation and access road are located within existing agriculture and open space in the City of Antioch. Currently, the nearest urban development is a residential neighborhood and city park located approximately 2,700 feet to the north, where Hillcrest Avenue presently terminates. Therefore, the proposed Delta Substation would not physically divide an established community.

b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

NO IMPACT. All project components would occur adjacent to an existing utility corridor on vacant land and would change current land use from agriculture to a utility substation. The proposed Delta Substation is consistent with the site’s proposed land use designation, Public/Quasi Public (Antioch, 2003). The project site is unzoned.

The proposed Delta DPA Capacity Increase Substation Project would be consistent with the City of Antioch’s existing General Plans and associated zoning, specific plans, the applicable land use plans, policies, and regulations (see Table B.3.9-2). Therefore, no impacts are expected from project conflicts with any applicable land use plan, policy, or regulation.

Table B.3.9-2. Regulations, Plans, and Standards Consistency – Land Use

Plan, Policy, or Regulation	Project Consistent?
Proposed City of Antioch – Sand Creek Focus Area Specific Plan (Zoning)	Yes
City of Antioch General Plan	Yes

c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

NO IMPACT. The project area is not subject to the Eastern Contra Costa County Habitat Conservation Plan (HCP). The proposed substation and associated structures do not conflict with the HCP, as noted above and in Section B.3.4, Biological Resources.

PG&E’s implementation of mitigation measures BIO-1 to BIO-9 would reduce potential impacts to species and habitats identified by the HCP to less than significant levels (see Section B.3.4, Biological Resources). Therefore, no impacts to the HCP are expected from the Proposed Project.

B.3.10 Mineral Resources

MINERAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.10.1 Setting

The Proposed Project area is currently used for open space and agriculture. There are no known important mineral resources in the immediate vicinity, nor are there any active mining operations. The California Surface Mining and Reclamation Act of 1997 require that the State Geologists classify land into mineral resource zones (MRZ) according to known or inferred mineral potential of the land. This site location is classified as MRZ-1 (Kohler-Antablin, 1996), which means that either there is adequate information on mineral resources in the area to indicate that there are no significant mineral deposits present or it is judged by the State Geologist that little likelihood exists for their presence.

B.3.10.2 Environmental Impacts and Mitigation Measures

a. *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?*

NO IMPACT. Based on the classification of the area by the State of California Geologists there are no mineral resources. There would be no impact to known mineral resources.

b. *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?*

NO IMPACT. Based on the mineral classification of the area by the State of California Geologists there are no mineral resources. There would be no impact to locally important mineral resources.

B.3.11 Noise

NOISE

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. For a project located 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, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.11.1 Setting

Existing Conditions

Community Noise. To describe environmental noise and to assess project impacts on areas that are sensitive to community noise, a measurement scale that simulates human perception is used. The A-weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that can be used to conveniently compare wide ranges of sound intensities.

Community noise levels can be highly variable from day to day as well as between day and night. For simplicity, sound levels are usually best represented by an equivalent level over a given time period (Leq) or by an average level occurring over a 24-hour day-night period (Ldn). The Leq, or equivalent sound level, is a single value (in dBA) for any desired duration, which includes all of the time-varying sound energy in the measurement period, usually one hour. The Ldn, or day-night average sound level, is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m. The Community Noise Equivalent Level (CNEL) is another metric that is the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.

Community noise levels are usually closely related to the intensity of human activity. Noise levels are generally considered low when below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, the Ldn noise levels can be below 35 dBA. In small towns or wooded and lightly used residential areas, the Ldn is more likely to be around 50 or 60 dBA. Levels around 75 dBA

are more common in busy urban areas, and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse to public health.

Surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation and residency are often considered incompatible with substantial nighttime noise because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference. At 70 dBA, sleep interference effects become considerable (U.S. EPA, 1974).

Noise Environment in the Project Area. Noise levels in the project area depend on the proximity of occupied and developed uses. The Proposed Project site is surrounded by agricultural and open space uses. These provide low ambient noise levels of the area because the site is approximately 0.4 miles away from roads and occupied uses. Noise levels observed at an unspecified location in the project area are reported by PG&E to be about 57 dBA Leq in the daytime and on a day-night basis 61 Ldn (PG&E, 2005).

Noise Sensitive Areas. Noise sensitive receptors are residences, schools, religious facilities, hospitals, and parks. Open space is only considered noise sensitive if it is used for recreation. One ~~possible~~ single-family dwelling being used for commercial purposes is located adjacent to the primary site access on Heidorn Ranch Road, approximately 0.4 miles northeast of the proposed substation site. Currently, the only other sensitive area near the site is a residential area and city park located approximately 0.5 miles to the north, where Hillcrest Avenue presently terminates. In the future, new homes along Hillcrest Avenue will bring residences to the north side of Sand Creek, but current plans indicate that they would be at least 800 feet from the proposed substation site. Plans also indicate that a future school site would be about 2,000 feet west-northwest of the proposed substation.

Applicable Regulations

Regulating environmental noise is generally the responsibility of local governments. The U.S. EPA once published guidelines on recommended maximum noise levels to protect public health and welfare (U.S. EPA, 1974), and the State of California maintains recommendations for local jurisdictions in the General Plan Guidelines published by the Governor's Office of Planning and Research (OPR, 2003). The following summarizes the local requirements.

City of Antioch General Plan. The objectives for controlling community noise outlined in the General Plan include maintaining noise below 60 CNEL at the outdoor spaces of residences and below 65 CNEL at school classrooms (Antioch, 2003, Section 11.6). The policies specify use of site design and architectural design features to minimize the effects of noise sources on residential neighborhoods, including setbacks, appropriate site orientation, and appropriately landscaped noise barriers. For construction noise, the policies specify that all construction equipment use noise reduction features as effective as those originally installed by the manufacturer. The policies also recommend implementation of a construction noise mitigation plan for any development adjacent to occupied noise-sensitive land uses.

City of Antioch Code of Ordinances. The City of Antioch Code of Ordinances restricts construction noise so that construction equipment cannot be used within 300 feet of occupied dwellings prior to 8:00 a.m. or after 5:00 p.m. (Sections 5-17.04 and 5-17.05). Regardless of nearby residences, construction

activity is also not allowed before 7:00 a.m. or after 6:00 p.m. Monday through Friday or before 9:00 a.m. and after 5:00 p.m. on weekends or holidays. Stationary noise sources are also limited by the ordinance to a maximum of 60 CNEL, measured at outdoor living areas (Section 9-5.1901). The City of Antioch does not regulate groundborne vibration, except in that it may create a nuisance.

B.3.11.2 Environmental Impacts and Mitigation Measures

- a. *Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

LESS THAN SIGNIFICANT DURING CONSTRUCTION. Construction of the project would involve short-term use of numerous trucks, bulldozers, graders, compactors, pavers, booms, cranes, augers, compressors, generators, and other equipment primarily at or around the proposed substation site. Road-making equipment and equipment to install the bridge would be used near Heidorn Ranch Road within a few hundred feet of the nearest home on Heidorn Ranch Road. During the anticipated 128-month construction schedule, installation of the road and bridge would occur first, to allow traffic to access the site. All substation construction traffic, including deliveries of transformers and tower components would occur along the access road, passing by the nearest home. Construction at the proposed Delta Substation site would not occur near any adjacent sensitive receptors. PG&E does not currently propose to use helicopters for line stringing. Noise levels for typical pieces of construction equipment (at 50 feet) that would be used are listed in Table B.3.11-1.

Table B.3.11-1. Typical Noise Levels for Construction Equipment

Equipment	Typical Noise Levels (dBA, at 50 feet)
Front loaders	85
Backhoes, excavators	80-85
Tractors, dozers	83-89
Graders, scrapers	85-89
Trucks	88
Concrete pumps, mixers	82-85
Cranes (movable)	83
Cranes (derrick)	88
Forklifts	76-82
Pumps	76
Generators	81
Compressors	83
Pneumatic tools	85
Jack hammers, rock drills	98
Pavers	89
Compactors	82
Drill rigs	70-85

Sources: Adapted from U.S. EPA, 1972 / U.S. DOT, 1995.

All construction activities, including those for the proposed access road and bridge, the substation site, the existing transmission line right-of-way, and any staging areas, would create both intermittent and continuous noises. Intermittent noise would result from periodic, short-term equipment operation, such as drill rig (auger) use during foundation work. Continuous noise would result from equipment operation over longer periods, such as steady generator use. The maximum intermittent construction noise levels would range from 85 to 92 dBA at 50 feet for foundation development activities and could range up to 98 dBA in the unlikely event of rock drilling. Continuous noise levels from construction would be lower because most equipment would not be operated steadily. At 50 feet, continuous noise levels could range from 70 to 82 dBA. At 100 feet, the levels could be between 64 to 76 dBA, and at 200 feet, between 58 to 70 dBA. Because sound fades over distance, these levels would diminish further with increased distance and could be reduced further by intervening structures. At the existing home nearest the proposed substation site (approximately 0.4 miles away), maximum intermittent noise would be less than 68 dBA and steady construction noise would be less than 52 dBA. As required by the City of Antioch noise ordinance, construction activity would be restricted to specific daylight hours.

Construction would also cause noise off site, primarily from commuting workers and from trucks needed to bring materials to the substation site. The peak noise levels associated with passing trucks and com-

muting worker vehicles would be approximately 70 to 75 dBA at 50 feet, and would be concentrated along the major arterial streets, especially Deer Valley Road and Lone Tree Way, smaller streets (Heidorn Ranch Road), and the proposed temporary access road leading to the substation site.

The majority of construction activity would not occur in close proximity to any residential or other sensitive receptors. Although the homes along haul routes would be exposed to construction traffic noise and the home on Heidorn Ranch Road would also be exposed to additional noise due to access road construction, PG&E proposes to limit the hours of all construction in a manner consistent with the Antioch noise ordinance (APM Noise-2). PG&E also proposes to use construction equipment with noise reduction features as effective as those originally installed by the manufacturer (APM Noise-1). These measures would be consistent with local policies, which would minimize the likelihood of construction noise complaints. Construction activities that would occur during the daytime would not cause a violation of the local standards; therefore, noise impacts during construction would be less than significant.

LESS THAN SIGNIFICANT DURING OPERATION. For long-term noise impacts associated with operations of the Proposed Project, refer to Section B.3.11.2 (c), below.

b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

LESS THAN SIGNIFICANT. Vibration from construction equipment and activities might be perceptible to receptors in the immediate vicinity of construction activities. Tamping of ground surfaces, the passing of heavy trucks on uneven surfaces, and rock drilling would each create perceptible vibration in the immediate vicinity of the activity. PG&E would not perform any blasting to grade the substation site. The level of groundborne vibration that could reach sensitive receptors depends on the distance to the receptor, what equipment is creating vibration, and the soil conditions surrounding the construction site. The impact from construction-related groundborne vibration would be short-term and confined to only the immediate area around the activity (within about 25 feet). As all proposed construction activities would be more than 25 feet from any occupied structure, the impact would be less than significant.

c. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

LESS THAN SIGNIFICANT. The permanent noise sources that would occur with the project are limited to transformer operation at the substation and noise from crews conducting routine inspection and maintenance of the substation.

Substations usually generate steady noise from the process of power conversion and the operation of transformers and auxiliary equipment needed to cool the transformer. Transformer noise contains pure-tone or “hum” components. This tonal quality is typically the most offensive characteristic of transformer noise. Auxiliary equipment includes cooling fans and oil pumps that operate depending on the internal temperature of the transformer oil. With all auxiliary cooling fans operating, the worst-case noise levels from the transformers at full load is predicted to be no more than 45 dBA for any location within 500 feet of the center of the proposed substation (PG&E, 2005). These levels do not take into account the attenuating effects of the proposed landscaped berm. Given that no existing residences or other noise-sensitive land uses near the site and planned development would not occur within 800 feet of the proposed substation, the equipment at the proposed substation site would not substantially affect noise levels at any off-site receiver. The equipment noise (especially hum) could be noticeable during the quietest hours of the night at the nearest future receptors, but this noise would not have the potential to cause a violation of local noise standards.

Routine inspection and maintenance of the Proposed Project would be accomplished through periodic visits to the substation site. Visits to the substations would not normally involve a large crew. Additional noise produced at the substation may occur during activation of circuit breakers. Because each of these noise sources would be infrequent and isolated, no substantial noise increase would occur.

d. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

LESS THAN SIGNIFICANT. Noise impacts associated with construction would mainly affect those receptors closest to construction access routes along arterial streets and Heidorn Ranch Road. These homes and the more distant residences north of the proposed substation site would experience a temporary increase in noise above levels now existing without the project, but the increase would not be substantial because of the distance involved and the intermittent nature construction noise. Short-term construction noise impacts would be less than significant with implementation of PG&E's proposed APMs, described in Section B.3.11.2 (a), above.

e. For a project located 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, would the project expose people residing or working in the project area to excessive noise levels?

NO IMPACT. The Proposed Project would not be located within two miles of a public airport or within an airport land use plan. No feature of the project would expose people in the project area to excessive noise from aircraft.

f. For a project within the vicinity of a private air strip, would the project expose people residing or working in the project area to excessive noise levels?

NO IMPACT. The Proposed Project is not located within the vicinity of a private airstrip.

B.3.12 Population and Housing

POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.12.1 Setting

The Delta DPA Capacity Increase Substation Project study area consists of a proposed substation site adjacent to an existing transmission corridor. The proposed substation site is located in the City of Antioch, and it is vacant. Containing existing electrical transmission lines, the transmission corridor traverses portions of the City of Brentwood and Contra Costa County. U.S. Census Year 2000 data for population, housing, and employment for the Cities of Antioch and Brentwood, as well as Contra Costa County is presented in Table B.3.12-1.

Table B.3.12-1. Year 2000 Existing Conditions – Population, Housing, and Employment: Cities of Antioch and Brentwood, and Contra Costa County

Location	Population	Housing Units		Employment	
		Total Units	Vacancy Rate	Total Employed ¹	In Construction Trades
City of Antioch	90,532	30,116	0.9% Owner 3.4% Rental	43,940	4,082
City of Brentwood	23,302	7,788	1.6% Owner 2.9% Rental	9,868	1,242
Contra Costa County	948,816	354,577	0.8% Owner 2.7% Rental	474,669	34,403

¹ Accounts for population greater than 16 years of age and in Labor Force
Source: U.S. Census, 2000.

B.3.12.2 Environmental Impacts and Mitigation Measures

a. *Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

NO IMPACT. Construction activities resulting from project implementation would be considered short-term and temporary. As shown in Table B.3.12-1, Contra Costa County contains a considerable construction workforce (34,403 persons in Construction Trades). The Proposed Project would require a up to about 24 construction workers. It is assumed that these construction personnel would come from within Contra Costa County or adjacent areas and would generate neither a permanent increase to population levels nor a decrease in available housing. No construction impacts to existing or future population growth levels would occur as a result of the Proposed Project.

The proposed substation would be an automated substation, requiring no additional employees for operation. Furthermore, the Proposed Project does not involve the construction of any new residential housing units. As such, implementation of the project would generate no direct increase in the permanent population of the area and cumulatively affect no official regional or local population projections. The purpose of the Delta DPA Capacity Increase Substation Project is to improve reliability and meet projected electrical load requirements in the rapidly urbanizing eastern Contra Costa County area. While the project is intended to meet existing and future electrical demand generated by residential and business uses, the Proposed Project itself would not induce population growth either directly or indirectly. Thus, no impacts associated with induced population growth would occur.

b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

NO IMPACT. No residential properties currently exist within the proposed substation site or within the existing transmission line corridor. No housing or persons would be displaced by the project. Therefore, implementation of the Proposed Project would not result in the displacement of any housing, including affordable housing, nor would it necessitate the construction of replacement housing. No impacts would occur.

c. Would the project displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

NO IMPACT. As stated in B.3.12.2 (b) above, there is no existing housing within the project site, including the proposed substation site or within the existing transmission line corridor. Therefore, the project would not result in the displacement of people, nor would it necessitate the construction of replacement housing elsewhere. No impacts would occur.

B.3.13 Public Services

PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.13.1 Setting

Table B.3.13-1 lists applicable public service providers by jurisdiction.

Table B.3.13-1. Service Providers

Fire protection – Contra Costa County Fire Authority; Stations Serving the City of Antioch - Station 81 (315 W 10th), Station 82 (196 Bluerock Dr), Station 83 (2717 Gentrytown Dr)
Police protection – Contra Costa County Sheriff's Department
Hospitals – Contra Costa Regional Medical Center, Sutter Delta Medical Center, John Muir Health
Schools – Antioch Unified School District

Sources: Contra Costa County Fire Authority, 2006 / Contra Costa County Office of Education / Contra Costa County Sheriff's Department, 2006 / Joint Commission on Accreditation of Healthcare Organizations

B.3.13.2 Environmental Impacts and Mitigation Measures

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

a) Fire protection?

LESS THAN SIGNIFICANT. The Contra Costa County Fire Authority provides fire protection to the project area. A number of fire stations can serve the project area and are identified in Table B.3.13-1.

Construction activities are not anticipated to increase the demand for fire protection services in the area that would result in the need for new or altered facilities. Fire risk would be not greater than at any other construction site. Following construction, operation of the substation could result in instances requiring fire protection services. However, these would not create the need for new or physically altered facilities. The substation would not affect the ability of fire personnel to respond to fires, nor affect response time or other service measurements. The Proposed Project would have less than significant impacts with regard to fire protection facilities.

b) Police Protection?

LESS THAN SIGNIFICANT. The Contra Costa County Sheriff's Department provides police protection to the project site and the surrounding area. Construction activities are not anticipated to increase the demand for police protection services in the area. The Proposed Project would include security features such as fencing and nighttime security lighting, which would help reduce the demand for police protection. As with fire services, the construction and operation of the substation would not result in a need for additional police facilities nor would it affect response times or other service measurements. The result would be a less than significant impact with regard to police protection.

c) Schools?

NO IMPACT. The Proposed Project would require a total of no more than about 24 construction workers during peak construction. These construction personnel would commute to the site from within Contra Costa County or nearby counties and would not create a permanent change in local population. Upon completion, the proposed substation would be automated and require no additional PG&E employees for operation. Since the Proposed Project would not increase the local population, no increase in demand for school facilities would occur, and no new school facilities would be required.

d) Parks?

NO IMPACT. As described in B.3.13.2 (c) above regarding schools, the Proposed Project would not increase the region's population. Consequently, the project would not increase any long-term demands on existing parks in the project area, and no new or expanded park facilities would be required because of the Proposed Project. See Section B.3.14, Recreation, for a complete discussion the Proposed Project's potential impacts to parks and other recreational facilities.

e) Other Public Facilities?

NO IMPACT. The Proposed Project would not increase population and would not affect other governmental services or public facilities so as to require new or expanded facilities be developed. Therefore, no impact on other public facilities is expected.

B.3.14 Recreation

RECREATION

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.14.1 Setting

The Proposed Project would occur within the City of Antioch on property that is presently being used for agriculture or open space. The nearest existing city park is located approximately 2,700 feet to the north, where Hillcrest Avenue presently terminates. The City of Antioch's Chaparral Park is approximately 3,000 feet north of the project site along the existing Contra Costa-Cayetano 230 kV 230 kV line, near Candlewood Way and Stagecoach Way. No other recreational facility exists within one-half mile of the Proposed Project.

The City of Antioch has indicated a desire to bring additional recreational facilities to the Sand Creek corridor as development occurs in this area. The 2003 General Plan and the Sand Creek Specific Plan express an intention for recreation along Sand Creek, identifying a 250-foot open space corridor (125 feet on either side of the creek). Although these facilities are outlined in the adopted 2003 General Plan, the Sand Creek Specific Plan was not adopted by the City of Antioch. There is no formal plan for development of future recreational facilities along Sand Creek at this time.

B.3.14.2 Environmental Impacts and Mitigation Measures

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

NO IMPACT. In general, an increase in use of existing recreational facilities could be spurred by population growth, which increases demand on existing recreational resources. Such a demand on these resources could result in the physical deterioration of the facilities. However, as demonstrated in Section B.3.12, Population and Housing, the Proposed Project is not expected to induce either short-term or long-term population growth, either during project construction or operation. As such, there would be no impact to recreational facilities because there would not be an increased need for recreational resources.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

NO IMPACT. The Proposed Project does not include recreational facilities, nor does it require the construction of new facilities or the expansion of existing facilities recreational facilities. As such, no adverse physical effects on the environment would be generated by recreational facilities resulting from the Proposed Project.

B.3.15 Transportation/Traffic

TRANSPORTATION AND TRAFFIC

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.15.1 Setting

The Proposed Project would be located away from the existing roadway network, and it would require building a new paved access road and bridge to create a new crossing over Sand Creek. A small private dirt road provides the only vehicle access within about 2,000 feet of the proposed substation site from the intersection of Heidorn Ranch Road and Sand Creek Road. This road crosses Sand Creek over a steel pipe culvert that was washed out and replaced by the farmer in early 2006. Figure B.1-1 of the Project Description depicts the existing streets and roadways in the project vicinity.

Highways

Regional access to the project area is provided by State Route 4 (SR 4) and the State Route 4 Bypass. The major east-west access is provided by SR 4, as it extends from the Interstate 80 near the San Pablo Bay to Interstate 5 in Stockton. The nearest access points are a western exit for Lone Tree Way and one exit for Hillcrest Avenue and Deer Valley Road roughly four miles north of the project area. The SR 4 Bypass is being built to connect southern portions of Brentwood to SR 4 north of the project area. Eventually, plans call for the SR 4 Bypass to provide highway access to Lone Tree Way, just east of Heidorn Ranch Road and to a new four-lane Sand Creek Road that is planned to connect with Dallas Ranch Road (Antioch, 2003b). State Route 4, which is under the jurisdiction of the California Department of Transportation (Caltrans), carries average daily traffic volumes of over 80,000 vehicles west of Antioch (Caltrans, 2006).

Arterials and Local Streets

There are a number of arterial roadways that provide access to the project area. The primary function of arterial roadways is to move large volumes of traffic through one section of a city to other sections

and beyond. Lone Tree Way connects to SR 4 west of the project area and then travels north of the project area. Hillcrest Avenue and Deer Valley Road also connect to SR 4 north of the project area. Deer Valley Road continues to the west of the project area, but Hillcrest Avenue presently terminates about 0.5 miles north of the proposed substation. Planned 4-lane arterials include: the extension of Hillcrest Avenue, past the proposed substation site, to Balfour Road; the new Sand Creek Road between Dallas Ranch Road and the SR 4 Bypass, north of the proposed substation site, eventually with an interchange at the SR 4 Bypass; and the improvement of Heidorn Ranch Road as an arterial between Lone Tree Way and Sand Creek Road.

Table B.3.15-1 lists daily average traffic volumes for arterials and collector roads that could be affected by the Proposed Project.

Table B.3.15-1. Average Daily Traffic Volumes

Roadway	Lanes	Jurisdiction	Classification	Average Daily Traffic
SR 4: west of Hillcrest Avenue	4 to 6	Caltrans	Highway	81,000
SR 4: east of Hillcrest Avenue	4 to 6	Caltrans	Highway	42,500
SR 4 Bypass: north of Laurel Road	6	Contra Costa	Highway	Not Available
SR 4 Bypass: north of Lone Tree Way	4	Contra Costa	Highway	Not Available
Lone Tree Way: east of Hillcrest Ave (Canada Valley Rd)	2 to 5	Antioch	Arterial	42,000
Deer Valley Road: north of Lone Tree Way (Rocky Point Dr)	2 to 4	Antioch	Arterial	18,600
Hillcrest Avenue: north of Lone Tree Way (Deerfield Dr)	4	Antioch	Arterial	25,100
Hillcrest Avenue: south of Lone Tree Way	2 to 4	Antioch	Arterial	500 est.
Heidorn Ranch Road: south of Lone Tree Way	2 to 4	Antioch/ Brentwood	Minor	700 est.

Source: PG&E, 2005; Caltrans, 2006; City of Antioch, 2006.

Mass Transit

The Eastern Contra Costa Transit Authority (Tri Delta Transit) provides bus service to residents within eastern Contra Costa County. Near the project area, there are numerous bus stops along Lone Tree Way, Deer Valley Road, and Hillcrest Avenue (north of Lone Tree Way) (Tri Delta, 2006). Tri Delta Transit bus routes that occur on Lone Tree Way, Deer Valley Road, and Hillcrest Avenue include:

- Routes 380 and 388, servicing Bay Area Rapid Transit (BART) from the Pittsburg/Bay Point station and the Antioch (Hillcrest) Park and Ride (north of Highway 4 on Hillcrest Avenue), both of which run weekdays along Lone Tree Way;
- Route 384, servicing the Antioch (Hillcrest) Park and Ride and Brentwood via Deer Valley Road;
- Routes 383 and 385, servicing the Antioch (Hillcrest) Park and Ride, Brentwood, and Oakley via Lone Tree Way; and
- Route 392, servicing the Pittsburg/Bay Point BART, the Antioch (Hillcrest) Park and Ride, and the Brentwood Park and Ride, via Hillcrest Avenue and Lone Tree Way, running Saturday, Sunday, and holidays only.

Rail

There is no commuter rail service in the City of Antioch; however, Tri Delta Transit provides connections to and from the Pittsburg/Bay Point BART station, as described above. Amtrak provides passenger rail service to the City of Antioch via the Burlington Northern Santa Fe Railroad (BNSF) track,

which services the Oakland-Bakersfield corridor. Amtrak has four round-trip, San Joaquin Service passenger trains running on the BNSF tracks daily from the Antioch train station, located approximately seven miles northwest of the project site (PG&E, 2005).

Bicycle

Bicycle paths, bicycle lanes, and sidewalks provide safe routes for non-motorized transport. There are several existing Class I (separate, multi-use trails or paths) and Class II (striped bicycle lanes on roadways) bicycle facilities that occur near the project area. Class I bicycle paths occur along Lone Tree Way and the Mokelumne Trail (as part of a East Bay Municipal Utility District right-of-way), and Class II bicycle lanes occur on Deer Valley Road and Hillcrest Avenue.

In addition, there is one proposed Class II bike path extension within the project area. The Mokelumne Trail within the East Bay Municipal Utility District's right-of-way would be extended from Hillcrest Avenue to the City of Brentwood, crossing the SR 4 Bypass (PG&E, 2005). Long-range planned improvements for the project area also include non-motorized connections as part of a possible east-west pedestrian and bicycle facility that would parallel Sand Creek and the new Sand Creek Road between Dallas Ranch Road and the SR 4 Bypass in the project area (Antioch, 2003b).

Air Transportation

There are two airports in Contra Costa County, Byron Airport and Buchanan Field, both approximately 15 to 20 miles from the project site. The Caltrans Division of Aeronautics reports that five heliports are currently located in Contra Costa County. One of these heliports, located within the City of Antioch, is located approximately seven miles north of the project site (Caltrans, 2005). The Kaiser Medical Center under construction nearby includes a heliport that is expected to open in 2007.

Permits and Approvals Necessary

California Department of Transportation. PG&E would need to apply for and obtain a Caltrans Transportation Permit for movement of vehicles that may qualify as an oversized or excessive load or for transportation of oversized or excessive loads. This permit would determine a specific route for the shipper to follow from origin to destination.

Local Agencies. PG&E would need to apply to the City of Antioch, the City of Brentwood, and/or Contra Costa County for a transportation permit allowing movement of oversized or excessive loads, depending on the route. An encroachment permit for temporary positioning of oversized vehicles that may obstruct traffic on through roads may also be needed in order to deliver equipment or materials to the project site.

B.3.15.2 Environmental Impacts and Mitigation Measures

- a. Would the project cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?*

LESS THAN SIGNIFICANT. The Proposed Project would contribute to traffic congestion by adding truck trips and worker commute trips during construction. Construction vehicles and workers would reach the proposed site access road from Heidorn Ranch Road, which connects to Lone Tree Way. Lone Tree Way provides access to SR 4 via Deer Valley Road. PG&E intends to base much of the work out of its

Antioch Service Center on Hillcrest Avenue, north of SR 4 in the City of Antioch. Traffic from the PG&E Antioch Service Center would likely travel across SR 4 via Hillcrest Avenue, then follow Deer Valley Road, Lone Tree Way, and Heidorn Ranch Road to access the site.

The peak level of estimated truck trips would occur during import of approximately 50,000 cubic yards of material for creating the landscaped berm around the substation site. Import of this quantity of fill would require between 2,500 and 2,800 trips of heavy-duty trucks (18 cubic yard capacity). In order to complete this landscaping work within approximately three months, up to 50 truck trips per day would need to import soil. PG&E has not specified the origin of the soil. Additional trucks would be needed to bring equipment, hardware, and other building materials (such as concrete) to the work site. Up to 15 trips per day would occur during an approximate one-week period when cement trucks would be pouring foundations at the substation site. In addition to the project truck trips, construction workers would generate about 30 to 48 trips per day by commuting to the work site each workday.

This construction-related traffic would result in about a 10 percent increase in the existing daily traffic along Heidorn Ranch Road during the eight months of activity. The project-related traffic would result in a lower percent increase in the existing daily traffic on other roadways, because they have higher average daily traffic volumes. Construction related traffic would add less than a one percent increase to Lone Tree Way. Project-related traffic would not use Hillcrest Avenue south of Lone Tree Way because it currently does not connect with the project site.

Temporary traffic slowdowns may occur while large slow moving equipment is moved over public roadways to the site access road. PG&E anticipates that the majority of such traffic would avoid peak hours. Heavy transport vehicles (60-ton capacity) would be used to deliver transformers to the substation site, and a traffic control service would be required for transformer delivery. By law, the heavy loads would require PG&E to obtain transportation permits from the local jurisdictions and Caltrans. Some of the stipulations of each transportation permit would designate the haul routes to be taken and require PG&E to repair any damage caused to any restricted load limit streets. With these procedures in place, congestion caused by project-related truck traffic would cause temporarily adverse, but less than significant impacts.

Congestion caused by construction worker vehicles accessing the work site would be minimal. These effects would be limited to the short-term duration of construction. As such, the increase in traffic would not be substantial, and this impact would be less than significant.

b. Would the project cause, either individually or cumulatively, a level-of-service standard established by the county congestion management agency for designated roads or highways to be exceeded?

LESS THAN SIGNIFICANT. Level of Service (LOS) defines a roadways performance based on traffic volumes compared to the roadways capacity. Level of service for uninterrupted flow (flow unrestrained by the existence of traffic control devices) is measured by letter designations from A (free flow) to F (forced or breakdown flow). As stated in Section B.3.15.2(a) above, project-related traffic would result in a negligible increase when added to the existing daily traffic on freeways and arterial roadways presented above in Table B.3.15-1, and the Proposed Project would not increase traffic to a level that is substantial in relation to the existing traffic load and capacity of the street system for roads in the project area. Therefore, it is not anticipated that the temporary construction traffic generated by the Proposed Project would alter the project area roadway's existing level of service designations. Construction of the Proposed Project would cause a minor short-term increase in the local traffic throughout the proj-

ect study area (see discussion above). Therefore, level of service standards would not be exceeded. Operation of the Proposed Project would only require routine inspection and periodic maintenance visits, which would not cause level of service standards to be exceeded. The result would be less than significant impacts on level of service.

c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

NO IMPACT. No operating airports or heliports are within two miles of the Proposed Project. Helicopters would not be used during project construction. Therefore, the Proposed Project would not include any features that would disrupt or affect air traffic. The proposed transmission tower would not exceed the height of the existing towers in the transmission corridor. As such, there would be no impacts to air traffic patterns.

d. Would the project substantially increase hazards because of a design feature or incompatible uses?

NO IMPACT. The project would not involve any transportation-related design hazards or incompatible uses. Therefore, the Proposed Project would not increase hazards on area roadways due to a design feature or incompatible uses.

e. Would the project result in inadequate emergency access?

LESS THAN SIGNIFICANT. Construction of the Proposed Project would not result in closures of any the local roads, except for occasional transport of heavy or oversized equipment to the site under the terms of transportation permits. These brief closures would not adversely affect emergency access because PG&E would need to coordinate any such activity with Contra Costa County and the City of Antioch. Coordination with local officials would ensure that impacts to emergency access are less than significant. Impacts on emergency access would be less than significant.

f. Would the project result in inadequate parking capacity?

NO IMPACT. The Proposed Project would not occur within any parking lots, and it would not affect street parking on roadways. Construction workers would park in a designated area at the proposed substation site, away from public parking. Operation of the Proposed Project would not create a need for parking outside of the substation site. Therefore, there would be no impact to parking.

g. Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

NO IMPACT. Construction traffic would occur on roadways that support bus routes and bicycle facilities along with other traffic. However, because the Proposed Project would not physically alter or change any alternative transportation facilities, the Proposed Project would not conflict with adopted policies, plans, or programs that support alternative transportation in the project area.

B.3.16 Utilities and Service Systems

UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

B.3.16.1 Setting

Utility and service system facilities associated with electricity, domestic (potable) water, stormwater, solid waste, communications, and natural gas are provided and maintained by a variety of local purveyors, including cities, counties, special districts, water agencies, and private companies. Utilities such as domestic water, wastewater and stormwater sewers, and natural gas are usually transmitted via underground pipelines or conduits. Electricity and telecommunication services can also be installed underground or overhead on utility poles. The vast majority of the urban utility and public service infrastructure exists within public rights of way.

The new substation would be located within the City of Antioch. Table B.3.16-1 lists applicable utility providers in that jurisdiction.

Table B.3.16-1. Utility Providers

Natural gas – Pacific Gas and Electric
Electricity – Pacific Gas and Electric
Water – Contra Costa Water District
Wastewater – Delta Diablo Water District
Telephone – AT&T
Solid Waste – Delta Diablo Sanitation District
Landfills Used: Delta Household Hazardous Waste (HHW) Collection Facility, Keller Canyon Landfill, Pittsburgh; Acme Landfill, Martinez; West Contra Costa Landfill

Sources: California Integrated Waste Management Board, 2003 / Pacific Gas and Electric, 2006 / Contra Costa County Health Services Department/ Industrial Association of Contra Costa County

Table B.3.16-2 lists the total and remaining capacities of solid waste processors serving the City of Antioch.

Table B.3.16-2. Landfill Capacities

Landfill Name	Total Capacity (cu.yd.)	Remaining Capacity (cu.yd.)	Remaining Capacity (percent)	Maximum Throughput (tons/day)
Keller Canyon Landfill (Pittsburg Unincorporated)	75,018,280	68,279,670	91	3,500
West Contra Costa Landfill (Richmond)	22,068,000	1,300,000	6	2,500

Source: California Integrated Waste Management Board, 2006.

B.3.16.2 Environmental Impacts and Mitigation Measures

a. *Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

LESS THAN SIGNIFICANT. The project area is within the Central Valley Regional Water Quality Control Boards (RWQCB) jurisdiction. Currently, the site is undeveloped and generates no wastewater. The contractor would provide portable toilets on-site during construction, which would then be removed from the site on a regular basis for servicing off-site. This would be the only wastewater source associated with the Proposed Project. The amount of wastewater generated by workers during project construction would be minimal and temporary in nature and would not adversely affect the treatment plant that would receive the wastewater. The construction-related increase in wastewater would be temporary and represent a small fraction of the permitted flow for the wastewater treatment capability within the Delta Diablo Water District. Upon completion of construction, the Proposed Project would not generate wastewater because the proposed substation would be an automated facility. Because wastewater generated during project construction would result in a negligible and temporary increase, the Proposed Project would not exceed the wastewater treatment requirements of the RWQCB, and this impact would be less than significant.

b. *Would the project require, or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

LESS THAN SIGNIFICANT. The Proposed Project would generate minimal water demand or wastewater. Existing wastewater and water treatment facilities are adequate to accommodate the demand generated by the Proposed Project. (See item a above and d below.) Upon completion of construction, the Proposed Project would not generate a significant demand for water or wastewater treatment, as the proposed substation would be an unmanned, automated facility. Thus, the project would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. Because the Proposed Project would not to exceed the existing water supplies or wastewater treatment capacity, this impact would be less than significant.

c. *Would the project require, or result in the construction of, new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

LESS THAN SIGNIFICANT. The Proposed Project could temporarily accelerate sedimentation and reduced surface water quality could occur during project construction by disturbing the immediate area of the substation, the tower site, and the access road. Stormwater drainage features of the proposed substation

and access road, along with the construction best management practices (BMPs) implemented as part of APMs Hydro-1 to Hydro-4, would manage project-related stormwater without using off-site facilities. Drainage along the proposed access road would percolate from adjacent earthen ditches constructed alongside the roadway, allowing infiltration of the runoff, and a surface discharge system would be provided with the substation that would minimize the potential for erosion or enhanced sedimentation. Because no new or expanded drainage facilities would be required for the project, this impact would be less than significant.

d. Would the project have sufficient water supplies available to serve the Proposed Project from existing entitlements and resources, or would new or expanded entitlements be needed?

LESS THAN SIGNIFICANT. The Proposed Project area is not currently served by any water main or permanent water line. Landscape water for the initial years of substation operation would be provided by a new well permitted and constructed by PG&E. It is expected that eventually a connection to the municipal water system would be established, assuming it is extended as part of a future adjacent development. During construction, water would also be required for dust suppression and cleaning of construction equipment. Water for construction uses would come from a truck filled from the municipal water system (Contra Costa or City of Brentwood Water District). The magnitude of the demand for water for dust control is not known. However, the amount of water for dust suppression during construction is considered to be minimal in comparison to available municipal water supplies. The increased water use would be temporary and limited to construction activities. Upon completion of construction, the Proposed Project would generate minimal daily water demand, resulting only from landscaping irrigation needs at the proposed substation. PG&E would need to obtain a permit from Contra Costa County for a well to tap groundwater for the landscaping. Therefore, the Proposed Project would not be expected to exceed the existing water supplies available to serve the Proposed Project. Impacts would be less than significant.

e. Would the project result in a determination by the wastewater treatment provider that serves or may serve the Proposed Project that it has adequate capacity to serve the Proposed Project's projected demand in addition to the provider's existing commitments?

LESS THAN SIGNIFICANT. The Proposed Project would result in minimal wastewater generation during construction. As discussed in Item (a) above, existing wastewater facilities would adequately accommodate the projected minor demand generated by the Proposed Project while serving existing commitments. Therefore, this impact would be less than significant.

f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the Proposed Project's solid waste disposal needs?

LESS THAN SIGNIFICANT. A private contractor would collect and transport any solid waste generated on-site during construction. During construction of the Proposed Project, small amounts of debris from site clearing and small amounts of debris related to use of construction materials (such as concrete and metal) would be disposed of at one of the local landfills identified in Table B.3.16-1. Construction debris is disposed of at Unclassified Landfills, which typically do not have daily waste limits. Therefore, landfills serving the site would have sufficient capacity to accommodate project construction solid waste disposal needs. Total solid waste generated by construction of the Proposed Project is anticipated to be minor and within the capacity of existing landfills serving the project area. Therefore, the impact of solid waste disposal would be less than significant.

g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

NO IMPACT. The California Integrated Waste Management Act of 1989, which emphasizes resource conservation through reduction, recycling, and reuse of solid waste guide solid waste management requires that localities conduct a Solid Waste Generation Study (SWGS) and develop a Source Reduction Recycling Element (SRRE). The Proposed Project would operate in accordance with these applicable Solid Waste Management Policy Plans by including recycling activities as part of the Proposed Project. As identified in Section B.3.16 (f) above, landfills serving the site would have sufficient capacity to accommodate project construction solid waste disposal needs, and project solid waste disposal would not require the need for new or expanded landfill facilities. Therefore, the Proposed Project would comply with federal, State, and local statutes and regulations related to solid waste disposal limits and landfill capacities. No impact would occur.

B.3.17 Mandatory Findings of Significance

MANDATORY FINDING OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or 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 a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts that are individually limited, but cumulatively considerable? (<i>Cumulatively considerable</i> means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

- a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or 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 a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?**

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. As described in Section B.3.4, Biological Resources, the project could result in impacts to habitats that support sensitive species. However, implementation of the Applicant-Proposed Measures and the mitigation measures described in Section B.3.4 would reduce these potential impacts to less than significant levels. Similarly, while some potential exists to impact an archaeological resource, mitigation described in Section B.3.5, Cultural Resources, would reduce this potential impact to a less than significant level.

With the suggested mitigation, the Proposed Project would not have a significant adverse effect on natural resources, either by itself or cumulatively with other projects. No significant impacts would occur that could not be mitigated to a less than significant level.

- b. Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects, and the effects of probable future projects.)**

LESS THAN SIGNIFICANT IMPACT. CEQA defines a cumulative impact as an effect that is created as a result of the combination of the Proposed Project together with other projects (past, present, or future) causing related impacts. Cumulative impacts of a project need to be evaluated when the project’s incremental effect is cumulatively considerable and, therefore, potentially significant.

As discussed in preceding sections B.3.1 through B.3.16, many of the potential impacts of the Proposed Project would occur during construction, with few lasting operational effects. The construction impacts of the Proposed Project (primarily related to biological resources, noise, air pollutant emissions, and traffic) have little potential to combine with similar effects of other projects in the general vicinity, particularly

considering that the implementation of appropriate mitigation measures (see Sections B.3.1 through B.3.16, and the Mitigation Monitoring Plan in Section C) would reduce the construction-related effects of the Proposed Project to less than significant levels. Because the construction-related impacts of the Proposed Project are temporary and localized, they would only have the potential to combine with similar impacts of other projects if they occur at the same time and in close proximity. Therefore, the potential for construction impacts that are cumulatively considerable is limited.

After the project has been constructed, the only continuing effect of the Proposed Project evaluated in this Initial Study is the incremental visual change it would represent compared to current conditions. From a cumulative perspective, the incremental visual effects of the Proposed Project are considered in combination with past visual changes in the area and anticipated changes from future projects. Over time, visual conditions in the project vicinity have changed substantially as a result of land development. The incremental change in visual conditions associated with the Proposed Project contributes to this cumulative change in visual conditions, but represents only a relatively minor incremental change in cumulative conditions. Therefore, the project's visual effects are adverse, but not considerable enough to represent a significant cumulative impact. Similarly, with regard to the remaining areas of analysis (Sections B.3.2 through B.3.16), individually and cumulatively, the Proposed Project would not result in any significant long-term impacts that would substantially combine with impacts of other current and probable future impacts. Consequently, the Proposed Project would not create impacts that are cumulatively considerable.

c. Does the project have environmental effects, which would cause substantial adverse effects on human beings, either directly or indirectly?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The preceding sections of this Initial Study discuss various types of impacts that could have adverse effects on human beings, including:

- Changing the visual character of the open space in the vicinity of the existing transmission line (see Section B.3.1, Aesthetics),
- Dust and air pollutant emissions associated with project construction activities (see Section B.3.3, Air Quality),
- Hazards, such as seismic hazards, exposure to hazardous substances, flooding, or wildland fires (see Section B.3.6, Geology and Soils; Section B.3.7, Hazards and Hazardous Materials; and Section B.3.8, Hydrology and Water Resources), and
- Noise generated by project construction and operation (see Section B.3.11, Noise).

These are primarily temporary impacts associated with project construction activities. Each type of impact with the potential to cause substantial adverse effects on human beings has been evaluated, and this Initial Study concludes that all of these potential impacts are either less than significant or can be mitigated to a less than significant level with the implementation of measures presented herein (see also Section C, Mitigation Monitoring Plan, for a complete listing of the mitigation measures including Applicant-Proposed Measures). Therefore, the Proposed Project does not involve any activities, either during construction or operation, which would cause significant adverse effects on human beings that cannot be readily mitigated to a less than significant level.