

5.13 Visual Resources

Visual resources are the natural and cultural features of the environment that can be seen and that contribute to the public's enjoyment of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility, and the extent that the project's presence would change the visual character and quality of the environment in which it would be located.

This section was prepared following California Energy Commission (CEC) guidelines for preparing visual impact assessments for Applications for Certification (AFC). Section 5.13.1 documents the visual conditions that currently exist in the Contra Costa Generating Station (CCGS) area. Section 5.13.2 discusses the potential environmental effects as they relate to visual resources. Section 5.13.3 discusses the potential cumulative impacts of this and other projects in the area. Section 5.13.4 summarizes the mitigation measures proposed to reduce project impacts on visual resources. Section 5.13.5 describes the laws, ordinances, regulations, and standards (LORS) relevant to visual resources. Section 5.13.6 lists agencies involved and agency contacts, and Section 5.13.7 discusses permits. Section 5.13.8 lists the references used in preparation of this section.

Figure 5.13-1 shows the location of the CCGS site, and the locations of the key observation points (KOPs) referenced in this section. The existing views and simulated views of the project from the KOPs follow as Figures 5.13-2 through 5.13-8.

5.13.1 Affected Environment

5.13.1.1 Regional Setting

The project site is located in Contra Costa County near the junction of State Route (SR) 4 and SR 160 in Oakley, CA (see Figure 5.13-1). The project site occupies 21.95 acres in the southwest corner of the DuPont property which is bordered by the San Joaquin River to the north and east, vineyards and the Burlington Northern Santa Fe (BNSF) railroad corridor to the south, and industrial facilities and the SR 160 corridor to the west. Beyond SR 160 is the City of Antioch; along its eastern edge, industrial and commercial uses are generally clustered in the north, closer to the San Joaquin River, while residential uses are in the south. Central Oakley is southeast of the project site, and the City of Brentwood borders Oakley to the south.

The land in the area is mostly flat and is characterized by a variety of agricultural, industrial, residential, commercial, and recreational/maritime uses. In the area immediately surrounding the project site, buildings and structures are industrial in appearance, and vegetation consists mainly of agriculture and landscaping. Mount Diablo, the peak of which is located approximately 13 miles southwest of the project site, is the region's dominant geologic feature, and it is visible in views from throughout the area, including from within and near the project site.

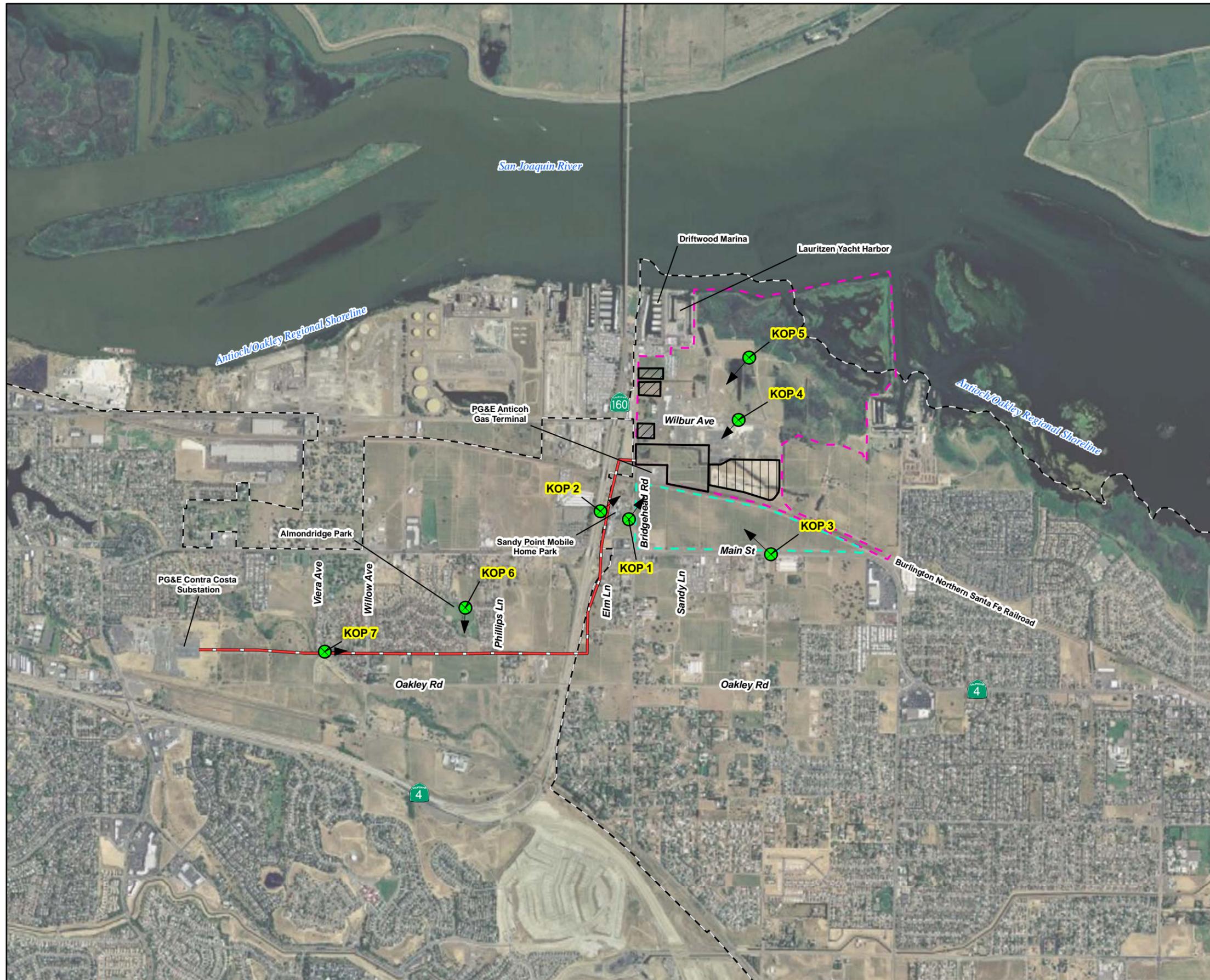
Beyond the DuPont facility to the north is the waterfront, which includes the Antioch/Oakley Regional Shoreline (managed by East Bay Regional Parks), and the Lauritzen Yacht Harbor. East of the project site, beyond the DuPont property, is a residential neighborhood within the City of Oakley.

To the south of the project site, across the BNSF tracks, is another vineyard, which extends from the tracks to Main Street (SR 4). This 76-acre site is proposed for commercial development as a shopping center as described in the River Oaks Crossing Specific Plan Environmental Impact Report (EIR) (City of Oakley, 2007a).

Immediately adjacent to the west of the CCGS is the Pacific Gas and Electric Company (PG&E) Antioch Gas Terminal, a nexus of PG&E's high-pressure gas pipeline network. CCGS would obtain natural gas from this facility. Beyond the terminal to the west and beyond and adjacent to SR 160 are various industrial uses. South of these areas and southwest of the project site are a hotel, fast food restaurants, and the Sandy Point Mobile Home Park, which is where the residences closest to the project site are located. A few dozen homes are clustered in this area, the entrance of which is across Bridgehead Road from the proposed River Oaks Crossing project site. The transmission corridor proposed for the connection from the power plant to the PG&E Contra Costa Substation extends along the eastern side of SR 160, adjacent or near to three residential areas: Sandy Point Mobile Home Park, southwest of the project site; a neighborhood along Elm Lane, south of Main Street and east of SR 160; and a subdivision of single family homes located around and to the west of Almondridge Park in Antioch.

There are no officially designated state scenic highways near the project site. The segment of SR 160 between SR 4 and the Sacramento County line, just over 1 mile away from the project site, is listed as eligible for designation as a scenic highway. The California Scenic Highway Program protects and enhances the natural scenic beauty of California highways and adjacent corridors through special conservation treatment (California Department of Transportation [Caltrans], 2009). A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The status of a proposed state scenic highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway. No Corridor Protection Program has been adopted for SR 160 in Contra Costa County. The segment of SR 160 that begins at the Sacramento County line is an officially designated scenic highway. However, the project site is not clearly visible in views from southbound SR 160 until viewers are within Contra Costa County (approximately 1 mile away).

The project site is currently designated for a "Utility Energy" land use in the City of Oakley 2020 General Plan. As described in the General Plan and City of Oakley zoning ordinance, the Utility Energy designation allows for power plant uses. Structures associated with this land use designation "shall be aesthetically designed, including landscape buffers, and produce no significant adverse effects, including excess noise, dust, and glare on surrounding land uses" (City of Oakley, 2002). The General Plan includes policies pertaining to scenic resources. Specific policies that would apply to the CCGS project include those related to preservation of the scenic qualities of the Delta waterway, Marsh Creek, and views of Mount Diablo. Policies and policy consistency are discussed in Section 5.13.5.



- LEGEND**
- KEY OBSERVATION POINT (KOP) LOCATIONS
 - VIEW DIRECTION
 - EXISTING 60KV TRANSMISSION LINE
 - DIRT STOCKPILE AREAS
 - LAYDOWN AREA
 - PROJECT SITE
 - DUPONT BRIDGEHEAD ROAD SPECIFIC PLAN AREA
 - RIVER OAKS CROSSING SPECIFIC PLAN

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

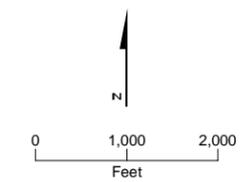


FIGURE 5.13-1
KEY OBSERVATION POINT
LOCATIONS
 CONTRA COSTA GENERATING STATION
 OAKLEY, CALIFORNIA



A. View to the northeast toward the project site from the driveway that exits from the Sandy Point Mobile Home Park (KOP-1). PG&E's Antioch Gas Terminal is visible in the left portion of the view, beyond the BNSF tracks that extend across the view.



B. View from KOP-1 with simulated project and landscaping five years after installation.



A. View to the northeast toward the project site from the northbound lane of SR 160 (KOP-2). The project site is visible in the center of the view beyond the mobile home park, industrial storage area, and PG&E Antioch Gas Terminal.



B. View from KOP-2 with simulated project and landscaping five years after installation.



A. View to the northwest from SR 4/Main Street at Live Oak Avenue (KOP-3). Live Oak Community Christian Church is located across Live Oak Avenue from this location.



B. View from KOP-3 with simulated project and landscaping five years after installation.

FIGURE 5.13-4
KEY OBSERVATION POINT 3
 CONTRA COSTA GENERATING STATION
 OAKLEY, CALIFORNIA



A. View to the southwest from Wilbur Avenue, within the DuPont property (KOP-4). The project site is beyond the row of mature eucalyptus trees that extends across the view. The peak of Mount Diablo is visible in the distance.



B. View from KOP-4 with simulated project and landscaping five years after installation.



A. View to the southwest from wetlands within the DuPont property (KOP-5). Mount Diablo is visible in the right side of the view, beyond structures on the DuPont property.



B. View from KOP-5 with simulated project and landscaping five years after installation.



A. View to the south from Almondridge Park, in Antioch (KOP-6). The transmission corridor that includes towers to be replaced extends across this view, from east to west.



B. View from KOP-6 with transmission corridor replacement simulated.



A. View to the east from intersection of Viera Avenue and Oakley Road, in Antioch (KOP-7). This segment of the transmission corridor includes a pedestrian path, the entrance to which is visible in the center of this view.



B. View from KOP-7 with transmission corridor replacement simulated.

FIGURE 5.13-8
KEY OBSERVATION POINT 7
 CONTRA COSTA GENERATING STATION
 OAKLEY, CALIFORNIA

5.13.1.2 Project Site and Linear Routes

The project site is currently a vineyard, separated from the rest of the DuPont site by rows of mature eucalyptus trees. The area to the north and east of the project site is the former DuPont Antioch Plant, which manufactured Freon, tetraethyl lead, and titanium dioxide before ceasing operations in 1998. The former plant site is largely vacant, though warehouses, concrete pads, roads, and other buildings and infrastructure remain. The former plant site, which is separated from the CCGS project site by the rows of eucalyptus trees, is proposed for redevelopment as part of the DuPont Bridgehead Road Specific Plan (City of Oakley, 2007b). Research and development, light industrial uses, and a public trail system are among the uses envisioned for the area to the north and east of the CCGS project site.

Power generated by CCGS will be transmitted to PG&E's Contra Costa Substation, approximately 2.4 miles away, via an existing transmission corridor. The corridor currently accommodates a 60-kilovolt (kV), single-circuit line, which will be replaced by a 230-kV, double-circuit line. A portion of the transmission corridor extends through the City of Antioch. See Section 3 for additional information on the transmission line and supporting infrastructure.

All other linear appurtenances (natural gas, potable water, process and sanitary wastewater) will be underground and not visible.

5.13.1.3 Construction Laydown Area

Temporary construction facilities will include a 20-acre worker parking and laydown area immediately east of the project site, within the DuPont property (see Figure 1.1-2).

5.13.1.4 Sensitive Viewing Areas and Key Observation Points

To structure the analysis of CCGS effects on visual resources, the view areas that would be the most sensitive to the project's potential visual impacts and the sensitive receptors in those areas were identified.¹ Representative viewpoints from these sensitive receptor locations are referred to as KOPs. The seven KOPs chosen for this analysis represent the best viewing conditions from the five major areas of viewer sensitivity: the closest residential area (Sandy Point Mobile Home Park); the nearest scenic roadway (SR 160, which has been designated as eligible for the state scenic highway system); within the DuPont Oakley Specific Plan area (proposed for future development as a research and business park); south of the project site, along Main Street (SR 4) and south of the site of the proposed River Oaks Crossing shopping center; and in the Antioch neighborhood through which the transmission corridor extends.

Based on field work conducted in April 2009 by CH2M HILL staff, the existing visual conditions of the views from each of the seven KOPs were documented and evaluated. Assessments of existing visual conditions were made based on professional judgment that took into consideration the following conditions: visual quality, viewer concern, visibility, number of viewers, and duration of view. These conditions were then factored into an overall rating of viewer exposure and viewer sensitivity. This is the approach used by CEC

¹ Typically, residents and recreationists are considered to be sensitive receptors to changes in the landscape. This is because of the potential for effects to their long-term views or their enjoyment of a particular landscape or activity.

staff in making a determination of impact in the visual resource analysis for the Avenal Energy project (CEC, 2009). CEC uses the following definitions in this approach:

- **Visual Quality** – An expression of the visual impression or appeal of a given landscape and the associated public value attributed to the resource. Visual quality is rated from high to low. A high rating is generally reserved for landscapes viewers might describe as picture-perfect. Landscapes rated high generally are memorable because of the way the components combine in a visual pattern. In addition, those landscapes are free from encroaching elements, thus retaining their visual integrity. Finally, landscapes with high visual quality are visually coherent and harmonious when each element is considered as part of the whole. Conversely, landscapes rated low are often dominated by visually discordant human alterations.
- **Viewer Concern** – Viewer concern represents the reaction of a viewer to visible changes in the viewshed, an area of land visible from a fixed vantage point. For example, viewers have a high expectation of viewshed quality for views formally designated as scenic areas or travel corridors and for recreational and residential areas. Viewers generally expect that the quality of such views will be preserved. Travelers on highways and roads, including those in agricultural areas, are generally considered to have moderate viewer concerns and expectations. Viewers tend to have low-to-moderate viewer concern when viewing commercial buildings, and industrial uses typically have the lowest viewer concern. For any viewshed type, the level of concern could be lower if the existing landscape contains discordant elements. Conversely, some areas of lower visual quality and degraded visual character may contain particular views of substantially higher visual quality or interest to the public.
- **Visibility** – Visibility is a measure of how well an object can be seen. Visibility depends on the angle or direction of views; extent of visual screening; and topographical relationships between the object and existing homes, streets, or parks. In that sense, visibility is determined by considering any and all obstructions that may be in the sightline – trees and other vegetation; buildings; transmission poles or towers; general air quality conditions such as haze; and general weather conditions such as fog.
- **Number of Viewers** – Number of viewers is a count or estimate of the number of persons per day who would have a view of the proposed project. Number of viewers is organized into the following categories: residential according to the number of residences; motorist according to the number of vehicles; and recreationists.
- **Duration of View** – Duration of view is the amount of time to view the site. For example, a high or extended view of a project site is one reached across a distance in 2 minutes or longer. In contrast, a low or brief duration of view is reached in a short amount of time – generally less than 10 seconds.
- **Viewer Exposure** – Viewer exposure is a function of three elements previously listed: visibility, number of viewers, and duration of view. Viewer exposure can range from a low to high. A partially obscured and brief background view for a few motorists represents a low value; and unobstructed foreground view from a large number of residences represents a high value.

- **Visual Sensitivity** – Visual sensitivity is comprised of three elements previously listed, visual quality, viewer concern, and viewer exposure. Viewer sensitivity tends to be higher for homeowners or people driving for pleasure or engaged in recreational activities and lower for people driving to and from work or as part of their work.

Existing conditions in views from each of the seven KOPs are described below. Figure 5.13-1 shows the location of each KOP relative to the project site. Figures 5.13-2 through 5.13-8 show the views from each KOP.

5.13.1.4.1 KOP-1 – View from Sandy Point Mobile Home Park

Figure 5.13-2a depicts the view from KOP-1, which is located along the driveway that exits from the Sandy Point Mobile Home Park, approximately 0.2 mile south-southwest of the project site off Bridgehead Road. This area is zoned for light industry, and has a General Plan land use designation of commercial. This viewpoint was selected because it approximates the view from the residential area closest to the project site. This view is seen by residents and visitors to the mobile home park. The viewpoint is set back approximately 60 feet from Bridgehead Road. Because this viewpoint shows the closest and least obstructed view of the project site, it provides the basis for developing a “worst case” assessment of the CCGS’s visual effects on this area.

The approximately three dozen residences within the mobile home park at KOP-1 form a small residential pocket set within an area that is otherwise industrial, commercial, and agricultural in character. The visual quality of views from KOP-1 toward the project site is moderately low. The vineyards that occupy the center of this view, along with the mature trees that serve as backdrop to the vineyards, are the most vivid features visible in the visible landscape. Their orderly appearance across the middleground of the view also contributes a degree of unity and intactness to the view. However, the most visibly prominent features in the view from KOP-1 are the signs, poles, and other structures in the immediate foreground, between the viewpoint and Bridgehead Road. This array of structures adds an element of visual clutter to the view, and several of these structures encroach upon the view of the vineyards and trees. The effect is an overall lack of coherence in the view and a moderately low visual quality. Despite the level of discord in the foreground, this is a view from a residential area and viewer concern is therefore assumed to be high.

Visibility of the project site is also high from this location because the objects in the foreground do not obstruct direct views of the project site. The number of viewers at this location is limited to residents and guests at the mobile home park which, as noted above, has approximately three dozen residences. Because this view is intended to approximate the view from a residential area, duration of the view is assumed to be high. Taking into account the high visibility, moderate number of viewers, and high duration of view, viewer exposure is moderately high for KOP-1.

Visual sensitivity is moderately high. While the visual quality of this view is moderately low, viewer concern is high and viewer exposure is moderately high. A moderately high degree of sensitivity is typically expected from viewpoints located near or within residential areas.

5.13.1.4.2 KOP-2 – View from SR 160

Figure 5.13-3a depicts the view from KOP-2, which is located within the northbound lane of SR 160, approximately 0.3 mile southwest of the project site. This viewpoint was selected because SR 160 is an elevated roadway in the project vicinity that affords a mostly unobstructed view toward the project site. This segment of SR 160 is also eligible for designation as a State Scenic Highway. This view is seen by motorists traveling northbound on SR 160, toward the Antioch Bridge and into Sacramento County. At the Sacramento County boundary, SR 160 becomes an officially designated State Scenic Highway.

The visual quality of the view from KOP-2 is moderately low. A number of seemingly discordant uses and features are visible from this location, including the mobile home park in the foreground; an industrial-appearing storage yard north of the mobile home park; structures and tanks associated with both the PG&E and DuPont facilities beyond the BNSF tracks; and the vineyards within and adjacent to the project site. These areas and uses appear to encroach on one another only slightly, and therefore create a mosaic landscape in which there is some coherence. The trees and San Joaquin River visible in the distance frame the view and add an element of natural-appearing vividness to a view of an area that is industrial in character. Viewer concern is assumed to be moderately low; though the overall visual character of the area is industrial in nature, there are prominent elements of agriculture in this view from the highway. Viewer concern is therefore slightly higher than it would be for an area that included solely industrial uses.

Visibility of the project site from KOP-2 is moderately high. The project site extends across the view, beyond the mobile home park, storage yard, BNSF tracks, and PG&E facility. The view of the project site is mostly unobstructed, except for portions that are blocked by trees located within the mobile home park. The number of viewers is moderately high, given the traffic volume on SR 160 relative to other nearby roadways (see Section 5.12, Traffic and Transportation). Duration of views toward the site is moderate. Extended views are not available, given that vehicles are traveling at highway speeds on SR 160. However, the site is large enough to allow more than just fleeting views. The overall viewer exposure for this viewpoint is moderately high, given the moderately high visibility, moderately high number of viewers, and moderate duration of views.

Visual sensitivity for KOP-2 is moderate. Views toward the site from KOP-2 are not exceptional, and viewers in this area are not assumed to have high expectations regarding the quality of views. However, enough viewers are able to see the project site for a long enough time to assume a relatively high degree of viewer exposure, and therefore an overall moderate level of visual sensitivity.

5.13.1.4.3 KOP-3 – View from SR 4 / Main Street and Live Oak Avenue

Figure 5.13-4a depicts the view from KOP-3, which is located approximately 0.4 mile southeast of the project site, along SR 4 near the intersection with Live Oak Avenue. This viewpoint was selected because SR 4, which is also called Main Street in this part of Oakley, is among the most heavily traveled roadways in the project vicinity. Live Oak Community Christian Church is located across Live Oak Avenue from the KOP. This view is seen by motorists traveling westbound on SR 4/Main Street, toward the intersection with SR 160 and Antioch. The view also approximates the view from the Live Oak Community Christian

Church, which, of all nearby churches, schools, or other community facilities, is the closest to the project site.

The visual quality of the view from KOP-3 is moderately low. The roadside vegetation on the opposite side of the highway and the trees visible in the distance provide vividness and a degree of unity to the view. However, existing transmission facilities along the roadway and a tall exhaust stack visible in the distance are discordant features that reduce the view's overall intactness. Further, the most visually dominant element in the view is the road, itself. Including its supporting infrastructure (traffic signals), the roadway occupies a substantial portion of the view. The visual character is mostly inconsistent in this view, defined less by any one dominant land use, but more by the elements present in the view, which are dedicated to vehicular transportation and the production and transmission of electricity. Viewer concern is assumed to be moderate. The majority of viewers from this location are motorists traveling westbound on SR 4/Main Street, but the KOP is also intended to approximate views from the nearby church, the parking lot of which is adjacent to the south side of the roadway.

Visibility of the project site from KOP-3 is moderate. The project site is directly visible from the viewpoint, but views are partially screened by the roadside vegetation. The transmission pole in the center of the view would also appear between viewers and the project site. The number of viewers would be moderately high, since traffic volumes on SR 4/Main Street are higher than other nearby surface streets (see Section 5.12, Traffic and Transportation). Because the view is from a stop-lighted intersection, duration of views would be moderately high. This also takes into account views toward the project site from the Live Oak Church parking lot. Viewer exposure would therefore be moderately high from KOP-3.

Given the moderately low visual quality in this view, moderate viewer concern, and moderately high viewer exposure, visual sensitivity for KOP-3 is moderate. A relatively large number of viewers would have somewhat sustained views of the project site from this area, though the views are not high-quality views, and the project site is partially screened by existing vegetation and other human alterations.

5.13.1.4.4 KOP-4 – View from Wilbur Avenue and Road A

Figure 5.13-5a depicts the view from KOP-4, which is located within the DuPont property, approximately 0.2 mile northeast of the project site. This viewpoint was selected to provide a view from within an area proposed for future development. Specifically, according to the DuPont Bridgehead Road Specific Plan, this viewpoint is at the location of a proposed traffic circle at the intersection of Wilbur Avenue and Road A. The uses proposed for the area surrounding this intersection are "Research and Development (R&D) and/or Business Park/Light Industrial/Flex." At present, access to the entire DuPont site is restricted and there are currently no uses or viewers stationed at or near this KOP.

The visual quality of the existing view toward the project site from KOP-4 is low. The mature eucalyptus trees in front of the project site, along with the mostly obstructed view of Mount Diablo in the center of the view provide a degree of vividness to the view, but the dominant features are those that account for the industrial visual character. In the foreground, the paved road and rail lines are evidence of an internal transportation and transport system that no longer serves its original purpose. Concrete pads, loading ramps, blocks, and other infrastructure are visible, along with a storage shed. Piles of dirt and

debris are also visible. The unity in this view is derived from the general disturbance visible throughout the area, rather than any sort of intactness. The visible disturbance is typical of former industrial sites that are no longer in use. While there are no viewers to consider at present, aside from DuPont employees who may be temporarily working in the area in order to maintain the property, viewer concern from this location would be moderately low. The foreground and middleground do not include any elements of exceptional visual interest, but a small portion of Mount Diablo is visible in the distance, in the center of the view.

Visibility of the project site is moderate. The row of mature trees that form the project site's northeastern side screen most of the project site. However, the viewpoint is close enough to the project site that the area where CCGS will be constructed will occupy nearly the entire horizon of the view. There are currently no viewers at this location, aside from occasional DuPont employees. Because this portion of the DuPont site is mostly flat and relatively expansive, and because it is assumed that most views will be from moving vehicles, the duration of views is moderate. Given the visibility of the site from this location, viewer exposure is moderate.

Overall, visual sensitivity from KOP-4 is moderately low. While there are no specific viewers occupying the area or who can even be assumed to travel through the area more than occasionally, the assumed level of viewer exposure for this location is moderate. The level of visual sensitivity factors this in with the low visual quality and moderately low level of assumed viewer concern.

5.13.1.4.5 KOP-5 – View from DuPont Wetlands

Figure 5.13-6a depicts the view from KOP-5, which is located within the DuPont property, approximately 0.4 mile north-northeast of the project site. This viewpoint was selected to provide a second view from within the area proposed for future development, one that incorporates a more naturalistic setting. In the DuPont Bridgehead Road Specific Plan, this viewpoint is identified as an "Open Space-Wetland Buffer." From this location, a retention pond is in the view's immediate foreground. Behind the viewpoint is land identified for future open space and "Delta Recreation." As with KOP-4, access to this location is restricted and there are no uses or viewers stationed at or near this KOP.

The visual quality of the existing view toward the project site from KOP-4 is moderate. The retention pond and wetlands in the immediate foreground, along with the direct view of Mount Diablo in the distance, are highly vivid features that frame the view. Visible in the view's middleground, however, are structures on the DuPont property that undermine the view's overall coherence. Specifically, tanks, structures, and other apparatus are visible in the right half of the view, and utility poles encroach upon the direct view of Mount Diablo, reducing the view's integrity. As such, the visual quality of this view is moderate. Similar to KOP-4, there are no viewers to consider at present, aside from occasional DuPont employees. However, unlike the view from KOP-4, this view includes a higher degree of natural-appearing, open space features, including a mostly unobstructed view of Mount Diablo. As such, viewer concern from this location would be moderate.

The conditions under which overall viewer exposure is considered are similar to those for KOP-4. Visibility of the project site is moderate, as the eucalyptus trees at the edge of the project site screen the majority, but not all, of that area from this location. The duration of

views from this location is also considered to moderate; it is again assumed that any current views are from moving vehicles, and there are very few visitors other than occasional DuPont employees. Viewer exposure from KOP-4 is moderate.

Given the moderate degrees of visual quality, viewer concern, and viewer exposure, visual sensitivity from KOP-5 is moderate. This is essentially a view of a disturbed, former industrial site that includes a long-distance view toward Mount Diablo and a short-distance view of wetlands.

5.13.1.4.6 KOP-6 – View from Almondridge Park

Figure 5.13-7a depicts the view from KOP-6, which is located in Almondridge Park within a residential subdivision in the City of Antioch. This viewpoint is nearly 1 mile southwest of the project site, but approximately 0.2 mile north of the transmission corridor, which will include new towers to accommodate the project's connection to the PG&E Contra Costa Substation. This corridor extends from east to west. Existing steel-lattice towers, which carry a 60-kV transmission line, will be replaced by monopole towers, which will carry the existing line and the project's 230-kV line. The view from KOP-6 includes the point where the connection and new towers intersect with an existing 230-kV transmission line oriented north-south. This viewpoint was selected to show the replacement transmission line's intersection with the north-south transmission line from the nearest public park.

The visual quality of the existing view toward the transmission corridor is from KOP-6 is moderate. The trees and open area associated with the park provide a high degree of vividness and spatial unity in the foreground. The transmission towers are dominant features in the larger view, however, and their vertical presence across the view (in addition to the conductors that extend north from the center of the view toward the viewpoint) result in low level of overall integrity in the view. Because this view along the transmission corridor is from within a public park, which itself is located within a residential subdivision, viewer concern is assumed to be high.

The view is unobstructed, and the transmission corridor is therefore highly visible. Because the view is from within a park, the duration of views is high. The number of viewers is also assumed to be high because Almondridge Park is the one open space recreation area in a relatively dense residential subdivision. As such, viewer exposure from KOP-6 is high.

Visual sensitivity from KOP-6 is moderately high. While the visual quality of the view is moderate, the location and primary uses of the area within which the viewpoint are located result in high levels of viewer concern and viewer exposure.

5.13.1.4.7 KOP-7 – View from Viera Avenue at Oakley Road

Figure 5.13-8a depicts the view from KOP-7, which is located at the intersection of Viera Avenue and Oakley Road in Antioch, at the western edge of the subdivision through which the transmission corridor extends. The view from this location is from within the transmission corridor, looking to the east. Encompassed in the view are two of the steel-lattice towers in the existing corridor, as well as one of the towers that is part of the north-south 230-kV line intersected by the transmission corridor (as seen from KOP-7). This viewpoint was selected to show the replacement transmission line as it would appear within the neighborhood. A footpath through the neighborhood is located within the transmission corridor and is visible from this viewpoint.

The visual quality of the existing view along the transmission corridor is from KOP-7 is moderate. Trees and vegetation associated with the footpath, residences, and other landscaping appear across the entirety of the view and contribute to a high degree of vividness. The placement of the footpath within the transmission corridor produces an inherent integration of uses and results in a moderate degree of integrity. The other facets of the view, namely Oakley Road and the residences, contribute to an overall moderately low level of visual unity in this view. Because this view along the transmission corridor is located within a residential neighborhood near an entrance to a community footpath, viewer concern is assumed to be high.

The transmission corridor is highly visible in this view. Duration of view would be short for traffic passing through the intersection, but longer for pedestrians walking along the street and particularly those walking along the footpath. The number of viewers is assumed to be moderate because this viewpoint is located at the western edge of a relatively dense residential subdivision. Taking into account the high visibility, moderate duration of view and moderate number of viewers, viewer exposure from KOP-7 is moderately high.

The moderate degrees of visual quality and viewer exposure, along with the high degree of viewer concern, result in a moderately high degree of overall visual sensitivity for views from KOP-7.

5.13.2 Environmental Analysis

5.13.2.1 Analysis Procedure

This assessment of the proposed project's potential effects on visual resources was conducted through the review of applicable planning documents, site reconnaissance and photography, production of visual simulations, and the application of a systematic method for evaluating the potential aesthetic effects of proposed power plant projects. This evaluation depends in part on the assessment of landscape visual quality under existing conditions and with the proposed project. Visual quality ratings range from outstanding to low. Development of this scale builds on a scale developed for use with an artificial intelligence system for evaluation of landscape visual quality (Buhyoff et al., 1994), and incorporates landscape assessment concepts applied by the U.S. Forest Service (1995) and the U.S. Department of Transportation (Federal Highway Administration, 1988). This method has been adopted by the staff of the CEC.² Finally, a determination of impact significance was made following the four California Environmental Quality Act (CEQA) Guidelines checklist questions discussed in Section 5.13.2.2.

The initial step in the evaluation process was the review of planning documents (including the City of Oakley General Plan) applicable to the project area to gain insight as to the type of land uses intended for the area, and the guidelines given for the protection or preservation of visual resources. Consideration was then given to the existing visual setting within the project viewshed, which is defined as the geographical area in which the project can be seen.

² The rationale for the CEC's application of this method was appended to its Staff Report for the Avenal Energy Project (CEC, 2009).

Potential project impacts were evaluated using a KOP analysis, among other tools and information sources. Site reconnaissance was conducted to view the site and surrounding area, identify potential KOPs, and take representative photographs of existing visual conditions. A single-lens reflex digital camera set to take photos with a focal length equivalent to that of photos taken with a 35 millimeter (mm) camera with a 50-mm lens (view angle 40 degrees) was used to shoot site photographs. Photographs from the site reconnaissance were selected to represent the “before” conditions from each KOP.

Visual simulations were produced to illustrate the “after” visual conditions from each of the KOPs to provide the viewer with a clear image of the location, scale, and visual appearance of the proposed project. These simulation images represent the project’s appearance after completion of construction and 5 years after installation of the landscaping. The computer-generated simulations are the result of an objective analytical and computer modeling process described briefly below. The images are accurate within the constraints of the available site and project data.

Computer modeling and rendering techniques were used to produce the simulated images of the views of the site as they would appear after development of the project. Existing topographic and site data provided the basis for developing an initial digital model. The project engineers provided site plans and digital data for the proposed generation facility, and site plans and elevations for the components of the transmission system. These were used to create three-dimensional (3-D) digital models of these facilities. These models were combined with the digital site model to produce a complete computer model of the generating facility and portions of the overhead transmission system.

For each viewpoint, viewer location was identified based on in-field GPS logs, and the eye level was assumed to be 5 feet. Computer “wire frame” perspective plots were then overlaid on the photographs of the views from the KOPs to verify scale and viewpoint location. Digital visual simulation images were produced as a next step, based on computer renderings of the 3-D model combined with high-resolution digital versions of base photographs. The final “hardcopy” visual simulation images that appear in this AFC document were produced from the digital image files using a color printer.

The “before” site photographs are included as Photograph a for each KOP in Figures 5.13-2 through 5.13-8. The “after” visual simulations are included as Photograph b in each of the figures.

The figures were used in the visual resource analysis for the project. The determination of visual effects incorporates the elements of contrast, dominance, view blockage, and visual change, as defined below.

- **Contrast** – Contrast concerns the degree to which a project’s visual characteristics or elements (form, line, color, and texture) differ from the same visual elements in the existing landscape. The degree of contrast can range from low to high. A landscape with forms, lines, colors, and textures similar to those of a proposed energy facility is more visually absorbent; that is, more capable of accepting those characteristics than a landscape in which those elements are absent. Generally, visual absorption is inversely proportional to visual contrast.

- **Dominance** – Dominance is a measure of the proportion of the total field of view occupied by the field; a feature’s apparent size relative to other visible landscape features; and the conspicuousness of the feature due to its location in the view. A feature’s level of dominance is lower in a panoramic setting than in an enclosed setting with a focus on the feature itself. A feature’s level of dominance is higher if it is near the center of the view; elevated relative to the viewer; or has the sky as a backdrop. As the distance between a viewer and a feature increases, its apparent size decreases; and consequently, its dominance decreases. The level of dominance ranges from low to high.
- **View Disruption** – The extent to which any previously visible landscape features are blocked from view constitutes view disruption. The view is also disrupted when the continuity of the view is interrupted. When considering a project’s features, higher quality landscape features can be disrupted by lower quality project features, thus resulting in adverse visual impacts. The degree of view disruption can range from none to high.
- **Visual Change** – Visual change is a function of contrast, dominance, and view disruption. Generally, contrast and dominance contribute more to the degree of visual change than does view disruption.

Once all effects were examined, a determination was made as to whether any potential impacts would reach a level that would be significant under CEQA standards, and thus require mitigation beyond that proposed as a part of the initial project design. Under CEQA, any required mitigation must be specific to an identified impact and must be feasible.

5.13.2.2 Impact Evaluation Criteria

The following criteria from the CEQA Guidelines were considered in determining whether a visual impact would be significant.

The CEQA Guidelines define a “significant effect” on the environment to mean a “substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including... objects of historic or aesthetic significance” (14 CCR 15382).

Appendix G of the CEQA Guidelines, under Aesthetics, lists the following four questions to be addressed regarding whether the potential impacts of a project are significant:

1. Would the project have a substantial adverse effect on a scenic vista?
2. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?
3. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
4. Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

5.13.2.3 Project Appearance

5.13.2.3.1 Project Structures and Dimensions

The proposed project facilities are described in detail in Section 2, Project Description. Figure 2.1-2 shows the general arrangement and layout of the proposed project features on the site, and Figures 2.1-3a and 2.1-3b provide typical elevation views. Table 5.13-1 summarizes the dimensions, finishes, and materials of the generating facility's major features. The exteriors of major project equipment would be treated with a neutral gray finish to optimize its visual integration with the surrounding environment. The project would be surrounded by a chain-link security fence.

TABLE 5.13-1
Approximate Dimensions and Colors, Materials, and Finishes of the Major Project Features

Feature	Height (feet)	Length (feet)	Width (feet)	Diameter (feet)	Color	Materials	Finish
HRSG Stacks	155	—	—	20	Gray	Metal	Flat/untextured
HRSG Casings	86	150	29	—	Gray	Metal	Flat/untextured
Gas Combustion Turbine	32	54	24	—	Gray	Metal	Flat/untextured
Gas Turbine Air Inlet Filters	70	68	52	—	Gray	Metal	Flat/untextured
Steam Turbine Generator Enclosure	56	88	26	—	Gray	Metal	Flat/untextured
Steam Turbine Generator Pedestal	35	92	44	—	Gray	Metal	Flat/untextured
Air-Cooled Condenser	124	311	221	—	Gray	Metal	Flat/untextured
Demineralized Water Storage Tank	25	—	—	30	Gray	Metal	Flat/untextured
Service/Fire Water Storage Tank	34	—	—	51	Gray	Metal	Flat/untextured
Control Administration Building	17	117	60	—	Gray	Metal	Flat/untextured
Warehouse/Maintenance Building	19	100	60	—	Gray	Metal	Flat/untextured
Water Treatment Building	23	80	60	—	Gray	Metal	Flat/untextured
Transmission Line Pole 1	65	—	—	—	Gray	Metal	Flat/untextured
Transmission Line Pole 2	105	—	—	—	Gray	Metal	Flat/untextured

HRSG = heat recovery steam generator

5.13.2.3.2 Transmission Line

The generated power will be transmitted approximately 2.4 miles to PG&E's Contra Costa Substation via an existing transmission corridor, which currently accommodates a 60-kV, single-circuit line. This line will be replaced by a double-circuit line that will accommodate the project's 230-kV line. See Section 3 for additional information on the transmission line and supporting infrastructure. Sections 5.13.2.4.6 and 5.13.2.4.7 discuss visual effects of replacing the existing transmission line.

5.13.2.3.3 Pipelines

Fuel will be delivered via a new 140-foot-long pipeline that will connect into PG&E's Line 303 natural gas transmission line immediately west of the project site (see Section 4). The project owner may include a secondary connection to deliver fuel to the CCGS via a

230-foot long pipeline from PG&E's Line 400 natural gas transmission line, which is located just west of the project site. Potable water will be provided by the Diablo Water District for power plant cooling and process water, fire protection, and potable uses. Process and sanitary wastewater will be conveyed to the Ironhouse Sanitary District sewer system. All pipelines will be underground or will not otherwise constitute any potential visual impact. Therefore, pipelines are not discussed further in this section.

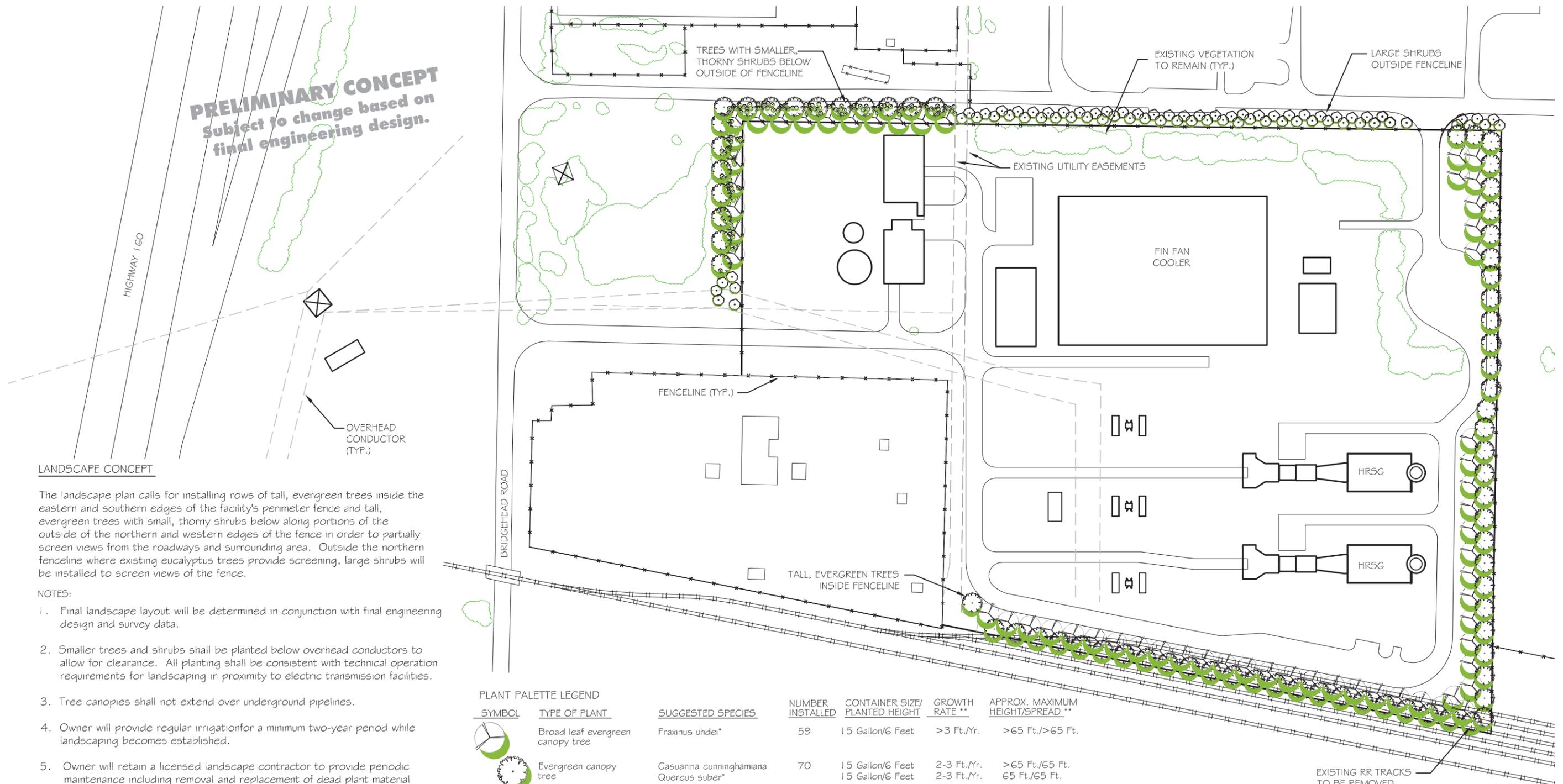
5.13.2.3.4 Construction Laydown Area

Construction laydown and parking areas will be within existing site boundaries, on a 20-acre parcel east of the plant site (see Figure 1.1-2). Construction access will generally be from Bridgehead Road. As detailed in Section 2.2, construction of the project would take place from the first quarter of 2011 to the fourth quarter of 2013. During this time, construction materials, construction equipment, trucks, and parked vehicles would be visible on this site. After construction is complete, all construction debris would be removed from the laydown area.

5.13.2.3.5 Landscaping

The applicant has developed a landscape plan for the project site, which includes installing a landscape buffer along most of the site's perimeter. Rows of tall, evergreen trees will be planted inside the eastern and southern edges of the perimeter fence and outside of portions of the fence along the northern and western edges. Evergreen shrubs also will be planted outside portions of the northern and western fence to partially screen views of the fence from roadways and surrounding areas. The planting concept is to use two rows of evergreen trees spaced approximately 36 feet on-center, with an approximately 18-foot distance between the center lines of each row. The trees in the row closest to the project site are expected to be evergreen ash (*Fraxinus uhdie*), a broad leaf evergreen canopy tree, which is a species recommended in Contra Costa County Landscape Standards (Contra Costa County, 2008) and City of Oakley Commercial and Industrial Design Guideline (City of Oakley, 2005). Ash will be approximately 6 feet tall at planting, 30 feet tall at 5 years, and 65 feet tall at maturity. The trees in the row in front of the ash are expected to be either river she-oak (*Casuarina cunninghamiana*) or cork oak (*Quercus suber*), both of which would be approximately 6 feet tall at planting, 16 to 21 feet tall at 5 years, and at least 65 feet tall at maturity. Maximum heights of the evergreen shrubs considered for planting outside the perimeter are 20 to 25 feet for the larger species and 3 to 5 feet for the smaller species. Figure 5.13-9 shows the Conceptual Landscape Plan. The simulations shown in Figures 5.13-2 through 5.13-8 include depictions of the landscaping plan, as currently proposed, 5 years after installation. Final landscape layout will be determined in conjunction with final site planning and survey data.

PRELIMINARY CONCEPT
 Subject to change based on
 final engineering design.

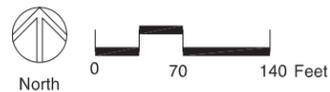


LANDSCAPE CONCEPT

The landscape plan calls for installing rows of tall, evergreen trees inside the eastern and southern edges of the facility's perimeter fence and tall, evergreen trees with small, thorny shrubs below along portions of the outside of the northern and western edges of the fence in order to partially screen views from the roadways and surrounding area. Outside the northern fence line where existing eucalyptus trees provide screening, large shrubs will be installed to screen views of the fence.

NOTES:

1. Final landscape layout will be determined in conjunction with final engineering design and survey data.
2. Smaller trees and shrubs shall be planted below overhead conductors to allow for clearance. All planting shall be consistent with technical operation requirements for landscaping in proximity to electric transmission facilities.
3. Tree canopies shall not extend over underground pipelines.
4. Owner will provide regular irrigation for a minimum two-year period while landscaping becomes established.
5. Owner will retain a licensed landscape contractor to provide periodic maintenance including removal and replacement of dead plant material and periodic evaluation of site landscaping to determine additional landscaping maintenance needs.



PLANT PALETTE LEGEND

SYMBOL	TYPE OF PLANT	SUGGESTED SPECIES	NUMBER INSTALLED	CONTAINER SIZE/ PLANTED HEIGHT	GROWTH RATE **	APPROX. MAXIMUM HEIGHT/SPREAD **
	Broad leaf evergreen canopy tree	Fraxinus uhdei*	59	15 Gallon/6 Feet	>3 Ft./Yr.	>65 Ft./>65 Ft.
	Evergreen canopy tree	Casuarina cunninghamiana Quercus suber*	70	15 Gallon/6 Feet 15 Gallon/6 Feet	2-3 Ft./Yr. 2-3 Ft./Yr.	>65 Ft./65 Ft. 65 Ft./65 Ft.
	Large evergreen shrubs	Arctostaphylos manzanita Fremontodendron californicum Heteromeles arbutifolia Myrica californica	71	10 Gallon/3 Feet 10 Gallon/3 Feet 10 Gallon/3 Feet 10 Gallon/3 Feet	1-2 Ft./Yr. 3 Ft./Yr. 1-2 Ft./Yr. 2 Ft./Yr.	20 Ft./10 Ft. 20 Ft./12 Ft. 25 Ft./20 Ft. 25 Ft./20 Ft.
	Small, thorny evergreen shrubs	Mahonia pinnata Rosa californica	161	3 Gallon/1.5 Feet 3 Gallon/1.5 Feet	n.a. n.a.	5 Ft./3 Ft. 3 Ft./3 Ft.

* Recommended species per Contra Costa County Landscape Standards (2008) and City of Oakley Commercial and Industrial Design Guidelines (2005).

** Estimates for trees and large shrubs based on information contained in: Reimer, Jeffrey L. and W. Mark. "SelectTree: A Tree Selection Guide." <http://selecttree.calpoly.edu/> (Site visited 23 April, 2009).

FIGURE 5.13-9
LANDSCAPE PLAN
 CONTRA COSTA GENERATING STATION
 OAKLEY, CALIFORNIA

5.13.2.3.6 Lighting

The power plant could be operated 24 hours per day, 7 days per week and would require night lighting for safety and security. The lights will provide illumination for operation under normal conditions, for safety under emergency conditions, and for manual operations during a power outage. The system will also provide 120-volt convenience outlets for portable lamps and tools.

To reduce offsite lighting impacts, lighting at the facility will be restricted to areas required for safety and operation. Exterior lights will be hooded and would be directed onsite to minimize significant light or glare. Low-pressure sodium lamps and fixtures of a non-glare type will be specified. In addition, switched lighting circuits will be provided for areas where lighting is not required for normal operation or safety to allow these areas to remain dark at most times and to minimize the amount of lighting potentially visible offsite.

Typically, noisy construction will be scheduled to occur between 6:00 a.m. and 7:00 p.m., Monday through Saturday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities (for example, pouring concrete at night during hot weather, working around time-critical shutdowns and constraints). During some construction periods and during the startup phase of the project, some activities will continue 24 hours per day, 7 days per week. During periods when nighttime construction activities take place, illumination that meets state and federal worker safety regulations will be required. To the extent possible, the nighttime construction lighting will be erected pointing toward the center of the site where activities are occurring and will be shielded. Task-specific lighting will be used to the extent practical while complying with worker safety regulations.

5.13.2.3.7 Water Vapor Plumes

Visible plumes from power plants (and other sources) form when the mass of water in an exhaust plume exceeds the saturation point of the exhaust gases. The saturation point of air is directly related to its temperature with warm air having a higher saturation point (being able to carry more water in a vapor state) than cold air. When the saturation point is reached, water will condense out of vapor state to a liquid state, forming fine water droplets. These water droplets are visible in an exhaust plume.

Experience with plants of the type proposed here has demonstrated that the high velocity and temperature of the stack exhaust result in a quick dispersion of stack plumes, minimizing the probability that a visible plume would be created above the stacks. Based on previous experience with these kinds of systems, it is likely that formation of visible plumes from the project would be a rare occurrence related to unusual combinations of cold and damp conditions and that, when present, the plumes would be relatively small. Because the CCGS will use an air-cooled condenser, it will have no cooling tower and therefore no cooling tower vapor plumes.

5.13.2.4 Assessment of Visual Effects

5.13.2.4.1 KOP-1 – View from Sandy Point Mobile Home Park

Figure 5.13-2 presents a photo of the existing view toward the project site from Sandy Point Mobile Home Park (Figure 5.13-2a) and a simulation of the view as it will appear during the project's operational period (Figure 5.13-2b). Comparison of the existing view with the view

with the project in place indicates that development of the project will create an assemblage of structures, tanks, and stacks located across the middleground of the view. These project elements will be larger in scale than any other objects in the view at present, and will obstruct views of the mature trees that currently appear as the backdrop in the view from a residential area. A number of project facilities—most notably the exhaust stacks and air-cooled condenser—will be silhouetted against the sky.

The proposed project's degree of contrast with its setting will be moderately high and the air-cooled condenser will be a dominant feature in the view. The project will not remove elements of visual importance from the view and will not block aesthetically important features in the background. It will, however, substantially alter the view from KOP-1. Though the visual quality of the view under existing conditions is moderately low, it is a more open view, with a backdrop defined by trees in the distance. This row of trees, along with the vineyards, provides the existing view with a degree of vividness. With the project, the view would become more enclosed, as the trees in the distance will be mostly obscured. The CCGS facility, located closer to the viewer, will become the backdrop for the view. The industrial visual character described for the existing view will be intensified; whereas the current view includes industrial-appearing features in locations throughout the landscape, the view with the project will be dominated by an industrial-appearing use.

Implementation of the Conceptual Landscape Plan would restore some of the vividness obscured by the facility, and at maturity the evergreen trees would screen much of the lower portions of the project, softening the visual transition between the new structure and the vineyard in front of the project site. However, the trees would not screen views of the air-cooled condenser, which is the most dominant of the project elements in this view, nor would they screen the upper portions of the HRSG stacks.

The visual quality of the view with the project would be low. Because of the moderately high degree of contrast and dominance, along with the moderate degree of view blockage, the project would result in a moderately high degree of visual change in views from KOP-1.

5.13.2.4.2 KOP-2 – View from SR 160

Figure 5.13-3 presents a photo of the existing view toward the project site from SR 160 (Figure 5.13-3a) and a simulation of the view as it will appear during the project's operational period (Figure 5.13-3b). Comparison of the existing view and the view with the project in place indicates that the CCGS facility will be prominently visible in views from SR 160, but that it will not alter the character of the view. While the height of the stacks and ACC would partially obstruct views of the trees in the distance, the project will otherwise fit into the existing landscape, which already contains a variety of uses but which is industrial in character. The stacks and ACC will also appear as the largest structures in the view and will be silhouetted against the sky. The effect of their presence will be to intensify the level of development visible in the view, which will result in a small reduction to the already moderately low level of visual quality in the view at present.

As in the view from KOP-1, implementation of the Conceptual Landscape Plan would place vegetation in front of a portion of the CCGS in views from KOP-2 and would restore some of the vividness obscured by the facility. At maturity, the evergreen trees would screen much of the lower portions of the HRSGs, but the stacks would remain visible and the air-cooled condenser would be completely unscreened by any landscaping. In 5 years, trees

along the northern and western edges would screen some of the facility's features in the northwest corner, where new structures would appear as part of an already heavily developed landscape. However, at maturity the trees used for screening the facility would also screen a portion of the San Joaquin River.

Because the proposed project will be located so that it obscures a portion of the trees in the distance, the degree of contrast and view blockage will be moderate. The project would become the most prominent feature in an already highly developed landscape; however, the distance between the project and the viewpoint will result in only a moderate level of dominance. The project will therefore result in a moderate degree of visual change in views from KOP-2.

5.13.2.4.3 KOP-3 – View from SR 4 / Main Street and Live Oak Avenue

Figure 5.13-4 presents a photo of the existing view toward the project site from the intersection of SR 4/Main Street and Live Oak Avenue (Figure 5.13-4a) and a simulation of the view as it will appear during the project's operational period (Figure 5.13-4b). Comparison of the existing view with the view with the project in place indicates that when the CCGS facility is constructed, the degree of visual change will be moderate. The facility will appear prominently in the center of the view, with only the base screened by the roadside vegetation. At present, an existing exhaust stack in the background and transmission poles in the foreground and middleground are encroaching elements in the view. The proposed project will add to the intrusion by vertical features that are silhouetted against the sky. The resulting contrast in the view with the project is moderate, as is the degree of dominance by the project; because of the angle of this view, the stacks will appear mostly in front of the air-cooled condenser, and the overall size of the CCGS will appear more compact than from other angles. The distance between the viewer and the project also reduces the dominance of the structures. The project will not remove elements of visual importance from the view and will not block aesthetically important features in the background.

The trees proposed for the south and east corners of the project site in the Conceptual Landscape Plan would, at maturity, appear slightly higher than the roadside vegetation in this view, screening lower portions of the facility not already screened. The landscaping would not substantially screen the CCGS in views from KOP-3.

The visual character of the existing view would be somewhat altered in that the landscape would clearly appear as being more developed than without the project. However, because the contrast within the view and dominance of the project will be moderate, and the view disturbance moderately low, the degree of visual change in views from KOP-3 will be moderate.

5.13.2.4.4 KOP-4 View from Wilbur Avenue and Road A

Figure 5.13-5 presents a photo of the existing view toward the project site from a location within the DuPont property (Figure 5.13-5a) and a simulation of the view as it will appear during the project's operational period (Figure 5.13-5b). Comparison between the existing view and the view with the project in place indicates that change to the view will be considerable, but that the existing visual character will not be substantially altered by the project. The CCGS facility will be prominently visible in views from KOP-4, appearing above the mature trees that mark the border of the project site. The degree of contrast in the

view with the project will be moderately high, given the scale of the project in an area where only one relatively small structure is currently visible. The vividness of the existing view will remain, since the eucalyptus trees and the top of Mount Diablo would remain visible. However, the presence of the facility will overshadow these elements of the view. As such, blockage by the project is moderate in this view, but dominance is high. The generally low visual quality of the view will remain so, as the view will appear less intact and have a lower degree of unity with the project in place.

Implementation of the Conceptual Landscape Plan will result in the partial screening of CCGS in views from KOP-4 by the time the trees reach maturity. The top of the HRSG and HRSG stacks would be visible above the trees intended to screen the facility, and the air-cooled condenser would only be partially screened by the mature trees. The facility will remain prominently visible and dominant in views with both the project and the landscape plan.

The moderately high degree of contrast, high degree of dominance and moderate view blockage will contribute to an overall moderately high degree of overall visual change. The CCGS will occupy a substantial portion of the view. That the proposed facility will not substantially alter the existing visual character of the area or the view's visual quality reduces the impact of the project's visual effects. Moreover, as described in Section 5.13.1.5.4, there are no viewers at the KOP at present, aside from any potential DuPont employees.

5.13.2.4.5 KOP-5 View from DuPont Wetlands

Figure 5.13-6 presents a photo of the existing view toward the project site from within the wetlands area of the DuPont property (Figure 5.13-6a) and a simulation of the view as it would appear during the project's operational period (Figure 5.13-6b). Comparison between the existing view and the view with the project in place indicates that the CCGS will be prominent in the view from KOP-5, and that the existing visual character will be altered, but that the primary visual features in the view, namely the views toward the wetlands in the foreground and Mount Diablo in the background, will not be affected. At present, the view from KOP-5 is characterized by the presence of an industrial-appearing area beyond the wetlands and in front of Mount Diablo. With the CCGS in the view, the presence of an industrial-appearing area is intensified, resulting in a moderately high contrast in the view. The dominance of the facility is similarly moderately high, given the degree to which it appears above the existing skyline in the left portion of the view, above the mature eucalyptus trees associated with the project site, and above the hills partially visible in the background. The project will appear as co-dominant with the other prominent features in the view, but it will not remove visually important elements from the view, nor will it substantially block aesthetically important features in the background.

With the Conceptual Landscape Plan, the lower portion of the HRSG will be effectively screened in views from KOP-5. Trees planted on the north and west side will screen some of the tanks and other smaller structures associated with the project, but will also, upon reaching full height, screen views of a portion of the Mount Diablo foothills. The air-cooled condenser, which will be the project's most dominant feature, will remain unscreened by landscaping in this view.

The overall visual change to the view from KOP-5 would be moderately high, given that the contrast in the view is moderately high and that the dominance of the CCGS would be moderately high. The unity in the existing view, which contributed to a moderate level of overall visual quality, will be reduced in the view with the project. However, as with the view from KOP-4, there are currently no viewers at this location, aside from occasional onsite employees. While there would be some impact on the view as seen from KOP-5, the fact remains that, at present, very few people see this view.

5.13.2.4.6 KOP-6 View from Almondridge Park

Figure 5.13-7 presents a photo of the existing view toward the project's transmission corridor from within Almondridge Park (Figure 5.13-7a) and a simulation of the view as it would appear during the project's operational period (Figure 5.13-7b). Comparison of the existing view with the view with the replacement towers indicates that there will be a noticeable but small degree of visual change with the alterations to the transmission corridor. Tubular steel poles will replace steel-lattice towers. Also, to facilitate the crossing of the new east-west, double-circuit line with the existing north-south, 230-kV line, additional tubular steel poles will be required. These poles will parallel the 230-kV line for a short distance to the south, allowing for the new conductors to safely pass beneath the larger conductors. The replacement poles would appear closer together and taller than the two steel-lattice towers they will replace. However, each of these new structures would appear within an existing transmission corridor, either the one along with the project line will extend or the corridor through which the 230-kV line currently extends. Although the overall unity is reduced slightly with the new towers, the visual quality in the view remains moderate and there would be no substantial alteration to the existing visual character. Contrast in the view with the project would not appear substantially greater than the contrast in the existing view. The taller, more numerous poles will not become more dominant in the view than they are in the existing view, and the replacement of lattice towers with tubular steel poles results in slightly less view blockage.

The overall visual change in this view with the replaced transmission corridor is low. As previously described, viewer concern and overall visual sensitivity for this view within a park are moderately high to high. Although the project will require additional, taller towers in the view from KOP-6, the type and location of these towers will not substantially alter either the visual character or the visual quality of this view.

5.13.2.4.7 KOP-7 View from Viera Avenue at Oakley Road

Figure 5.13-8 presents a photo of the existing view along the project's transmission corridor from within a residential subdivision (Figure 5.13-8a) and a simulation of the view as it would appear during the project's operational period (Figure 5.13-8b). Comparison of the existing view with the view with the replacement towers indicates that there will be a noticeable change, but that the change would slightly increase the overall visual quality of the view. Because tubular steel poles are generally more consistent in terms of form with other features in residential neighborhoods than lattice steel towers, the degree of contrast would be slightly less with the project. Similarly, because tubular towers occupy a smaller, more compact space at their base, the towers would appear somewhat less dominant in views with the project, and view blockage is reduced. These changes in form and reduction in occupied space would be especially noticeable in views from the footpath, the entrance of which is visible in the center of the view. In the view with the replaced transmission line, the

towers will remain the view's most prominent feature. However, the new poles would not cause any reduction in the overall visual quality of the view, nor would they alter the existing visual character. The overall visual change in this view with the replaced transmission corridor is low and positive.

5.13.2.4.8 Light and Glare

The project's effects on visual conditions during hours of darkness would be limited. As indicated in Section 5.13.2.3.6, some night lighting would be required for operational safety and security. There would be additional visible lighting associated with the project stacks, and open site areas. High illumination areas not occupied on a regular basis would be provided with switches or motion detectors to light these areas only when occupied. At times when lights are turned on, the lighting would not be highly visible offsite and would not produce offsite glare effects. The offsite light visibility and glare would be restricted by specification of non-glare fixtures and placement of lights to direct illumination into only those areas where it is needed. With the construction of the CCGS, the overall change in ambient lighting conditions in the area surrounding the site would not be substantial.

Lighting that may be required to facilitate night construction activities would, to the extent feasible and consistent with worker safety codes, be directed toward the center of the construction site and shielded to prevent light from straying offsite. Task-specific construction lighting would be used to the extent practical while complying with worker safety regulations. Despite these measures, there may be limited times during the construction period when the project site may appear as a brightly lit area as seen in views from surrounding hillside residential areas.

5.13.2.4.9 Water Vapor Plumes

No significant water vapor plumes are expected to form, but there is the potential to create small visible plumes from the HRSG stacks when the power plant is operating during times of low temperature and high humidity. Given these conditions, the most likely times for plume formation would be cold nights. Given that plume formation occurs mostly during times of low temperature and high humidity, it is unlikely that they would form during times of clear weather because daylight hours during spring, summer, and fall months when weather is fair tend to have relatively high temperatures and low humidity. Because the CCGS does not use a cooling tower, there would be no cooling tower plumes.

5.13.2.5 Impact Significance

A discussion regarding whether the visual effects of the project would be significant pursuant to CEQA is provided below. The assessment of these impacts applies the criteria set forth in Appendix G of the CEQA Guidelines. The CEQA Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including objects of historic or aesthetic significance." (14 CCR 15382) The four questions related to aesthetics that are posed for lead agencies and the answers to them are:

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

No. There are no designated scenic vista points in the vicinity of the project.

- **Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

No. This question does not apply to the proposed CCGS project because none of the project facilities would fall within the boundaries of a state scenic highway.

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

Yes. The proposed project would substantially alter the existing visual character of the project site and its surroundings. At present, the project area is industrial in character because of the industrial features visible throughout the landscape. With the project, this visual character would be intensified, particularly in views from KOP-1. The CCGS would be the dominant feature in the view from this residential area, and it would shorten the existing view by obscuring the majority of trees visible in the distance and the vineyard on the project site.

The presence of the CCGS would degrade the existing visual quality of the project area as viewed from KOP-1, a location from which viewer concern is high and viewer sensitivity moderately high. The proposed project would occupy a large portion of the visible area from this location, removing other non-industrial appearing features from the view. Despite the scattered features in the immediate foreground in the existing view from KOP-1, the line of trees in the distance is clearly visible and forms a discernable boundary, marking the edge of the agricultural land present in the area. With the project included, the extent of the existing view would be reduced and what is currently a more open-appearing area will appear more confined and dominated by the facility due to scale and proximity to the viewpoint. Construction of the CCGS would produce a substantial change in visual character and quality of views from KOP-1, a residential area with sensitive viewers. Without mitigation, this impact would be considered significant.

- **Would the project create a new source of substantial light and glare that would adversely affect day or nighttime views in the area?**

No. As described in Section 5.13.2.4.4, project light fixtures would be restricted to areas required for safety and operations. Lighting would be directed onsite and would be shielded from public view. Non-glare fixtures would be specified, as would switches, sensors, and timers to minimize the use of the lights. These measures would substantially reduce the offsite visibility of project lighting.

Given the limited level of lighting proposed for the project and the measures that would be taken to minimize offsite effects, night lighting impacts from CCGS would be less than significant.

Because none of the major project features would have surfaces that are highly reflective, the project would not be a source of daytime glare.

Any lighting that would be installed to facilitate nighttime construction activities would, to the extent feasible and consistent with worker safety codes, be directed toward the center of the construction site and shielded to prevent light from straying offsite. Task-specific construction lighting would be used to the extent practical while complying with worker safety regulations.

5.13.3 Cumulative Effects

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Public Resources Code Section 21083; 14 CCR Sections 15064(h), 15065(c), 15130, and 15355).

As described in Section 5.6, Land Use, there is potential for large-scale development to the south and the north of the project site. The River Oaks Crossing Specific Plan, a large-scale commercial project proposed for the area south of the project site and BNSF tracks, is under review by the City of Oakley. The specific plan contemplates commercial development of the 76.4-acre project site, including clearing, grading, utility and site improvements, development, and ongoing operation of up to 770,000 square feet including retail, restaurant, and potentially hotel uses.

The specific plan as proposed in the EIR (City of Oakley, 2007a) would include a "major retail" use along the area's western edge, in a building proposed to occupy 120,000 square feet and stand 32 to 46 feet tall. This building would obstruct a substantial portion of the CCGS in views from KOP-1 and be visible in views from KOP-2. As part of the development, there would also be a building just northwest of KOP-3. This building would be 10,000 square feet in size and 32 feet in height. In addition, Live Oak Avenue would be extended across SR 4/Main Street, and other buildings and parking areas would be nearby.

In the view from KOP-1, the River Oaks Crossing development would exacerbate the high degree of visual change that will result from construction of the power plant. In the view from KOP-2, the development would likely screen some of the lower portions of the CCGS facility, but possibly no more than would be screened by the fully mature landscaping proposed as part of the power plant project. The presence of the major retail building would further intensify the developed character of this view and would not substantially reduce the visibility of the CCGS facility. In the view from KOP-3, the CCGS would appear as part of a more intensely developed area with large-scale buildings, to the extent that the power plant would be visible at all.

Landscaping would be incorporated into the River Oaks Crossing development, and the northwest corner would be a dedicated landscaped area. This area, and other landscaping assumed to be placed along the project site's perimeter either as proposed or as mitigation, will likely screen views of both the commercial development and CCGS from KOP-1 and KOP-2. River Oaks Crossing structures would likely block a substantial portion, if not all, of the CCGS in views from KOP-3, and changes in traffic circulation would also alter the view.

To the north of the project site, the DuPont Bridgehead Road Specific Plan envisions a mixed-use area that would include 15 acres of retail/commercial uses, 34 acres of research and development/business park, 77 acres of light industrial development, and more than 200 acres of open space that includes wetlands along the San Joaquin River and trails to allow public access.

Development on the DuPont property would be visible from KOPs -2, -4 and -5. KOP-2, from SR 160, is the only one of these located outside of the DuPont property. According to the specific plan, KOP-4 would be located near a traffic circle, surrounded by research and development, business park, light industrial and/or flex space uses. KOP-5 would be

located within an open space, wetland buffer area that would also be a part of an internal network of trails.

In the view from KOP-2, development on the DuPont property would appear beyond the CCGS project site, contributing additional features to an already developed landscape. It is possible that, with the DuPont development and the CCGS landscape plan, views of the San Joaquin River would be completely screened from KOP-2. This effect, however, would not be substantial, since the river occupies a very small, background portion of current views.

Viewers at KOP-4 after the DuPont development would likely be workers and the area would be highly developed. The viewers would not see what is currently seen in the simulated view with the CCGS project. Instead, views from this location would likely show the proposed project integrated into a developed, work-related setting, one in which the power plant would be absorbed into the view if not partially to fully obstructed by new buildings and/or landscaping.

With the DuPont development, views toward the CCGS from KOP-5 would remain unchanged in the foreground, as the retention pond and wetlands would remain as part of the planned open space. Beyond the pond, however, would be research and development and/or business park uses. Similar to the view from KOP-4, with implementation of the DuPont Bridgehead Road Specific Plan it is likely that any portions of the CCGS facility that are not screened by buildings or landscaping associated with these proposed uses would be more readily absorbed into the overall view and that the proposed facility would not appear as dominant as it will on its own.

In sum, the CCGS would not contribute to any significant adverse cumulative impact. Implementation of the River Oaks Crossing and DuPont Bridgehead Road specific plans would result in the CCGS appearing to be relegated to the background in views from SR 4/Main Street (KOP-3) and from within the DuPont property (KOPs -4 and -5). In views from SR 160 (KOP-2), an already developed landscape would appear more intensely developed with the CCGS and either or both of the proposed development projects. In the view from Sandy Point Mobile Home Park (KOP-1), any additional, large-scale development would contribute to the substantial alterations to visual quality and character that will result from construction of the CCGS alone. However, landscaping anticipated as part of the River Oaks Crossing development would be likely to block, partially to fully, views toward the CCGS from both KOP-1 and KOP-2.

5.13.4 Mitigation Measures

This analysis has documented that the project would substantially degrade the existing visual character and quality of the project site as seen from KOP-1, which would constitute a significant visual impact. Therefore, mitigation measures will be proposed that could potentially reduce the visual impacts to a less-than-significant level.

To offset the visual impact of the CCGS in views from KOP-1, the Applicant proposes landscaping for the purpose of screening views from Sandy Point Mobile Home Park toward the project site. In consultation with the City of Oakley, the Applicant will select, plant, and maintain a row of trees along the eastern edge of Bridgehead Road for a segment of roadway extending from approximately the mobile home park entrance to the south to

the BNSF tracks to the north. A row of trees along Bridgehead Road would substantially screen the CCGS facility from view; the effect would be the intervention of an intensely developed and industrial appearing view by vegetation that will serve to soften the view and restore some of the vividness originally visible in the distance from this viewpoint. Implementation of this mitigation measure would reduce the proposed project's visual impact to a less-than-significant level. Although it would not be mitigation proposed specifically for the CCGS project, landscaping currently proposed for the River Oaks Crossing project would be likely to effectively screen the CCGS from KOP-1 as well.

5.13.5 Laws, Ordinances, Regulations, and Standards

This subsection describes the LORS relevant to the visual resource issues associated with the CCGS. No federal, state, or regional LORS are known that would apply to the project's visual resource issues. However, visual resource and urban design concerns applicable to the project are addressed in the City of Oakley General Plan, City of Oakley Municipal Code, and City of Antioch General Plan; the CCGS project site is within the city limits of Oakley, but the transmission line that will accommodate the project extends into the City of Antioch.

Table 5.13-2 lists the plans and ordinances that are pertinent to the project elements. The specific provisions of each plan or ordinance that have potential relevance to the project are identified in Sections 5.13.5.1, 5.13.5.2, and 5.13.5.3.

TABLE 5.13-2
Laws, Ordinances, Regulations, and Standards for Visual Resources

LORS	Requirements/Applicability	Administering Agency	AFC Section Explaining Conformance
City of Oakley General Plan	Comprehensive long-range plan to serve as the guide for the physical development of the City of Oakley.	City of Oakley Community Development Department	Section 5.13.5.1
City of Oakley Municipal Code	Establishes zoning districts governing land use and the placement of buildings and district improvements.	City of Oakley Community Development Department	Section 5.13.5.2
City of Antioch General Plan	Comprehensive long-range plan to serve as the guide for the physical development of the City of Antioch.	City of Antioch Community Development Department	Section 5.13.5.3

5.13.5.1 City of Oakley General Plan

The CCGS project site is located within the city limits of Oakley and is, therefore, subject to the provisions of the City of Oakley General Plan. The project site is zoned for Utility Energy production. General Plan policies pertaining to visual resources that are applicable to the project are summarized and evaluated in Table 5.13-3.

TABLE 5.13-3
Conformity with the City of Oakley General Plan

Provision	Conformity?
<p>Open Space and Conservation Element, Scenic Resources</p> <p><i>Goal 6.7 Seek to preserve the scenic qualities of the Delta Waterway, Marsh Creek, and views of Mount Diablo.</i></p> <p>Policy 6.7.1 - Encourage preservation and enhancement of views of the Delta and Mount Diablo to the extent possible.</p> <p>Policy 6.7.2 - New development and redevelopment along the Delta, adjacent to Marsh Creek and throughout the City should take advantage of view opportunities and visual impacts to the waterway and Mount Diablo, respectively.</p>	<p>Yes. Views that would include both Mount Diablo and the CCGS are available from locations northeast of the project site. Views of Mount Diablo would not be obstructed in key observation point views from locations northeast of the project site (KOP-4 and KOP-5; see Section 5.13.2.4).</p>

Source: City of Oakley, 2002

5.13.5.2 City of Oakley Municipal Code

The project site is designated in the City of Oakley General Plan for Utility Energy land uses. Because the city has not completed its rezoning to follow the General Plan, the project site could be considered to still be located in a Heavy Industry zoning district; but this is a holdover zoning from before the City of Oakley's formation (1999), when the project site was located in an unincorporated area of Contra Costa County (see Section 5.6, Land Use, for further information). The city has designated the project area as a redevelopment area in its existing zoning maps. Because it is unlikely that the city would apply the county's zoning standards for Heavy Industry, the most applicable standards are those of the City of Oakley General Plan and zoning ordinance for the Utility Energy land use/district. The General Plan states:

The Utility Energy designation allows for power plant uses involved in the clean production of electricity utilizing the best available combustion turbine technology (Oakley 2020 General Plan, Land Use Element, p. 2-17).

The provisions of the code that are applicable to the project are discussed in detail in Section 5.6, Land Use. Those that pertain to visual resources are summarized in Table 5.13-4.

TABLE 5.13-4
Conformity with the City of Oakley General Plan and Zoning Ordinance (assuming UE Zoning)

Provision	Conformity?
<p>9.1.604g Building Height</p> <p>The maximum building height for the UE land use and zoning district is one hundred feet (100').</p>	<p>Yes. All of the buildings of the CCGS are less than 100 feet tall, per Title 9 of the City of Oakley Municipal Code, page 9-4 "'Building' shall mean any structure with a roof supported by columns or walls and intended for the shelter, housing, or enclosure of persons, animals, or personal property."</p>
<p>9.1.604h Other Regulations</p> <p>1. Architectural Design. All developments within the UE zoning district shall be consistent with the City of Oakley Commercial and Industrial Design Guidelines, and shall be constructed with aesthetically pleasing, quality materials similar to those found in "upscale" commercial developments.</p>	<p>Yes. The CCGS will be consistent with commercial and industrial design guidelines and will be constructed of quality, untextured metal that will be gray in color. See Section 5.13.2.3.1.</p>

TABLE 5.13-4

Conformity with the City of Oakley General Plan and Zoning Ordinance (assuming UE Zoning)

Provision	Conformity?
<p>9.1.604h Other Regulations</p> <p>2. Landscaping. All developments within the UE district shall provide adequate, and well-maintained, tree and hedge landscaping along required side yards.</p>	<p>Yes. A Conceptual Landscape Plan has been developed. Trees and shrubs will be planted along portions of the perimeter of the site. See Section 5.13.2.3.5.</p>
<p>9.1.604h Other Regulations</p> <p>3. Lighting. Off-street lighting shall be installed which will provide adequate light for onsite use without creating inappropriate glare to adjacent business park or light industrial uses, and shall be approved by the Community Development Director.</p>	<p>Yes. Onsite lighting will be designed such that project light fixtures are restricted to areas required for safety and operations. Lighting will be directed onsite and will be shielded from public view. Non-glare fixtures would be specified, as would switches, sensors, and timers to minimize the use of the lights. See Section 5.13.2.3.6.</p>

Source: City of Oakley, 2009

5.13.5.3 City of Antioch General Plan

The transmission line proposed to carry the connection from the CCGS to the PG&E Contra Costa Substation is within an existing transmission corridor that extends into the City of Antioch. The project will not require construction of a new transmission line, but will require the replacement of the existing single-circuit line with a double-circuit line. This will require the replacement of existing steel-lattice towers with tubular-steel poles. Therefore, the General Plan provisions listed in Table 5.13-5 will be applicable to the proposed project.

TABLE 5.13-5

Conformity with City of Antioch General Plan

Provision	Conformity?
<p>Section 5.4.2 General Design Policies.</p> <p>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.</p> <ul style="list-style-type: none"> - 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. 	<p>Yes. Replacement of lattice-steel transmission towers with tubular steel towers slightly reduces blockage in views from public spaces (see views from KOP-6 and KOP-7). Additional new towers required to facilitate the crossing of the double-circuit line are located within an existing transmission corridor and do not substantially block views of hills or important view corridors. The view corridor from SR 160 toward the project site will be maintained.</p>

Source: City of Antioch, 2003.

5.13.5.4 Summary of Project's Conformity with Applicable LORS

The project complies with applicable laws, ordinances, regulations, and standards related to visual resource issues.

5.13.6 Agencies and Agency Contacts

The agency responsible for design review is the City of Oakley (Table 5.13-6).

TABLE 5.13-6
Agency Contacts for Visual Resources

Issue	Agency	Contact
Design Review	City of Oakley Community Development Department, Planning Division	Ken Strelo, Senior Planner City of Oakley 3231 Main Street Oakley, CA 94561 (925) 625-7019 strelo@ci.oakley.ca.us

5.13.7 Permits and Permit Schedule

The required permit that is of the most direct relevance to visual resource issues is the Design Review, which includes site plan, architectural, and landscape elements (Table 5.13-7).

TABLE 5.13-7
Permits and Permit Schedule for Visual Resources

Permit or Approval	Agency Contact	Schedule
Design Review including Site Plan and Landscape Plan review	Ken Strelo, Senior Planner City of Oakley Community Development Department, Planning Division 3231 Main Street Oakley, CA 94561 (925) 625-7019 strelo@ci.oakley.ca.us	Prior to construction, at discretion of CEC

5.13.8 References Cited or Consulted

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