

## 8.13 VISUAL RESOURCES

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Visual resources are the natural and cultural features of the landscape that can be seen and that contribute to the public's appreciative 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 to which the project's presence will change the perceived visual character and quality of the environment in which it will be located.

This section was prepared following CEC guidelines for preparing visual impact assessments for AFCs. Section 8.13.1 documents the visual conditions that currently exist in the project area. Section 8.13.2 discusses the potential environmental effects as they relate to visual resources. Section 8.13.3 discusses the potential cumulative impacts of this and other visual projects in the area. Section 8.13.4 summarizes the mitigation measures proposed to reduce the project's impacts on visual resources. LORS are described in Section 8.13.5. Required permits are discussed in Section 8.13.6. Section 8.13.7 lists the references used in preparation of this section.

Figures 8.13-1a and 8.13-1b indicate the location of the viewpoints, viewsheds, and key observation points referenced in the section. All illustrations in this section are bound together at the end of the section for reader convenience. These include viewshed maps, visual character photographs, and photographic simulations.

### 8.13.1 Affected Environment

#### 8.13.1.1 Regional Setting

The various components of the RCEC will be developed in the City of Hayward, a community located along the eastern shore of San Francisco Bay in Alameda County. The physical setting consists of a 1- to 2-mile-wide band of wetlands along the bay that are often referred to as "baylands" and, a flat to gently sloping bay plain extending approximately four miles from the bay to the base of the hills to the east. The hills are a series of northeast to southwest trending ridges that extend up to 1,400 feet in elevation. The project facilities will be located in Hayward's Industrial Corridor, which lies between the open spaces of the baylands to the west and commercial and residential areas on the bay plain and hill lands to the east (Figure 8.13-1a).

Land in the Industrial Corridor surrounding the RCEC site and its ancillary facilities has been developed at varying levels of intensity. Manufacturing facilities, fabrication shops, warehouses, trucking operations, and automotive salvage yards are all located in this Industrial Corridor. The City of Hayward's Water Pollution Control Facility (WPCF) is located directly across Enterprise Avenue from the project site some of the industrial parcels in the vicinity of the site are open in character and used as truck terminals or for equipment storage. Many of the manufacturing and warehouse facilities are housed in relatively new, one-story tilt-up structures surrounded by industrial park-style landscaping. As a result of the City's implementation of its landscaping and street tree requirements over the years, some of the streets in the Industrial Corridor are lined with mature trees and front setback landscaping that create a sense of visual enclosure along the streets and a sense of visual unity. Photo 1 on Figure 8.13-2a, the view west down Enterprise Avenue from Clawiter Road, provides a typical view of the existing landscape in the Industrial Corridor in the general vicinity of the RCEC site. Although much of the development in the Industrial Corridor is horizontal in character, consisting of one and two story buildings, there are a number of prominent vertical features as well. The RCEC site itself is now

occupied by the KFOX radio station's four, 228-foot high radio broadcasting towers (Photo 2, Figure 8.13-2a).

The Rohm and Haas paint polymer facility, located approximately 0.25 miles southeast of the site, has a 180-foot high stack (Photo 3, Figure 8.13-2a). Photo 4 on Figure 8.13-2a is a view from Whitesell Street near Breakwater Avenue, looking toward the radio towers now located on the project site. This viewpoint is adjacent to the Rohm and Haas facility, which is successfully hidden by the dense shrub hedge along the east (right) side of the street.

The baylands to the west of the Industrial Corridor and RCEC site are open in character. A large portion of the baylands northwest of the RCEC site is used for sewage oxidation ponds owned and operated by the City of Hayward. In addition, large areas consist of fresh and brackish water marshlands and mudflats supporting stands of tall cord grass. Much of the land in the baylands area is managed for wildlife protection and visitor access by the East Bay Regional Park District and the Hayward Area Recreation (HARD) District. Visitor facilities include the Hayward Shoreline Interpretive Center and a system of walking and biking trails through the area. Portions of the trail system in the baylands are a part of the Bay Trail, a network of multi-use pathways that when complete, will circle San Francisco and San Pablo Bays. At present, the segments of the Bay trail on the south side of State Route 92 are linked to those on the north side by way of the sidewalks on the Clawiter Road overpass. Caltrans has developed plans to construct an overpass over State Route 92 for the exclusive use of pedestrians and bicyclists that is intended to provide an improved linkage between the trail's northern and southern segments. The overpass will extend from the end of Point Eden Way on the south side of the highway to the area at Breakwater Way and Johnson Road on the north side. Engineering drawings for this project are now under review, and completion is expected within two years (Bauman 2001). Figure 8.13-4a is a view across the baylands toward the RCEC site as seen from the Hayward Shoreline Interpretive Center, which is managed by HARD. Figure 8.13-5a is a view across the baylands toward the RCEC site from a pedestrian bridge crossing one of the mud flat areas. The baylands serve as one of the major entrances to Hayward in that they are crossed by State Route 92, a freeway connecting the east and west sides of the bay. Eastbound travelers on the eastern portions of the Hayward-San Mateo Bridge and on the portions of the highway to the east of it are able to look across the open baylands to see the city on the bay plain and in the hills beyond. Figure 8.13-6a is a view from State Route 92 at the Hayward-San Mateo Bridge toll plaza, with the baylands in the foreground and middleground, and the city of Hayward and the East Bay hills beyond.

### **8.13.1.2 Project Site and Linear Corridors**

#### ***RCEC Plant Site***

The 14.7-acre power plant site is essentially level, with elevations ranging from approximately 5 to 12 feet above sea level. Photo 2 on Figure 8.13-2a is a view of the site as seen from its northwest corner along Enterprise Avenue. Photo 5 on Figure 8.13-2b is a view toward the site as seen from its southeast corner along Whitesell Street. The western portion of the site is generally open in character. It is surrounded by a chain link fence, and the ground surface is vegetated with low-growing grass and weeds. The most important structures on this portion of the site are the four, 228-foot tall radio towers, which are painted in alternating red and white bands. In addition, there is also a small one-story building on this portion of the site. The eastern portion of the site, which fronts along Whitesell Street, is now used by Runnels Industries for a sand blasting and painting operation. The visual elements most prominent on this portion of the site include a collection of one-story metal sheds of various designs, and piles of metal

components. A billowing fabric that hangs from the high chain link fence along Whitesell Street has apparently been installed to confine stray sand and paint. Near the right edge of Photo 5, a portion of one of the large tanks in the City's WPCF on the north side of Enterprise Avenue can be seen.

At present, Whitesell Street is a two-lane street that extends for just the relatively short distance between Breakwater Road and Enterprise Avenue. In the longer run, the City of Hayward has plans to convert Whitesell Street into a four-lane boulevard connecting through the current Water Pollution Control Facility with Cabot Boulevard to the north and tying into State Route 92 at a new interchange. This widened and extended street would be part of a four-lane boulevard that would loop through the Industrial Corridor. When built, Whitesell Street will be an at-grade, four lane-boulevard with a landscaped median strip that occupies an 84 foot wide right-of-way.

**Electric Transmission Line**—The alignment of the proposed transmission line is indicated on Figures 1-2 and 8.13-1a and b. This route extends from a takeoff structure located at the east end of the switchyard, and travels eastwards for about 600 feet before reaching the existing Grant to Eastshore 115-kV transmission line. A portion of this line will be rebuilt to accommodate the additional 230-kV circuits between Enterprise Avenue and the PG&E Eastshore Substation. Photo 6 on Figure 8.13-2b is a view of the existing Grant to Eastshore line tower located on the north side of Enterprise Avenue, to the northeast of the site. The 1.1-mile portion of the Grant-Eastshore alignment that will be affected by the RCEC passes through industrial properties, where the right-of-way has been integrated into parking lots and outdoor storage areas. The most visible portion of the affected Grant-Eastshore alignment is at its crossing of State Route 92. Figure 8-13.9a is a view of the Grant-Eastshoreline as seen from eastbound State Route 92.

**Natural Gas Pipeline**—Natural gas will be supplied by a pipeline that will extend for a distance of approximately 0.9 mile from an existing pipeline located along the Union Pacific Railroad corridor east of Clawiter Road. The pipeline route is indicated on Figure 1-2. The pipeline will be located on street right-of-ways and on industrial properties. Since the pipeline will be buried underground, it will not be visible.

**Wastewater Return Pipeline**—The wastewater return line will be underground. See Section 7.3 for details. Since this pipeline will be underground and because surface conditions will be restored after their construction, the pipeline will not produce any impacts on visual resources.

### ***AWT plant***

The cooling water and process water makeup used at the RCEC will consist of secondary effluent discharge water that will be supplied by the City of Hayward's WPCF located directly across Enterprise Avenue from the project site. This water will be delivered from WPCF to the new advanced wastewater treatment plant (AWT) at the project site by means of a short segment of pipeline that will follow the route indicated on Figure 2.3-2. Cooling tower blowdown will be discharged to the head works of the City's WPCF by means of a forced main that will parallel the secondary effluent discharge water supply pipeline. The City of Hayward will supply potable water for drinking and sanitary use on site from the existing water main in Enterprise Avenue. Since these pipelines will be located underground and because surface conditions will be restored after their construction, the pipelines will not produce any impacts on visual resources.

### **8.13.1.3 Potential Project Site Visibility**

Figures 8.13-2a and b provide a generalized indication of the project viewshed, that is, the areas from which the RCEC, AWT plant and transmission line are likely to be visible. Since the proposed natural gas and water pipelines would be entirely underground and thus not visible, these project elements were not considered in creating this viewshed map.

Identification of the project's viewshed was based on review of project engineering drawings, visual simulations of the project's appearance from six representative viewpoints, study of topographic maps and air photos, and extensive field observations. The viewshed map indicates two categories of view areas: (1) those in which the RCEC site and its ancillary facilities are likely to be generally visible; and (2) those in which views toward the project site and its ancillary facilities are likely to be blocked for the most part, but may be visible from certain specific locations. In areas to the northwest, west, and southwest of the project site, where there are open views toward the RCEC site across the baylands, the proposed project facilities have the potential to be visible over long distances. However, as a practical matter, the boundaries of the viewshed were set at 3 miles from the plant in directions where views were not otherwise blocked by buildings, trees, or other obstructions. This distance was selected because elements of a view that are 3 miles or more from the viewpoint are considered part of the background—the landscape zone in which little color or texture is apparent, colors blur into values of blue or gray, and individual visual impacts become least apparent (USDA Forest Service 1973, pp. 56-57).

Project facilities will be most visible in views across the baylands, including views from the Hayward-San Mateo Bridge, the Hayward Regional Shoreline, and the Hayward Shoreline Interpretive Center. The facilities will be intermittently visible from the industrial areas to the north, south, and east. In some cases, the taller elements will be visible above buildings, fences, and trees. In other cases, views of the project features will be completely blocked by intervening structures and vegetation. Project features will not be substantially visible from the commercial and residential areas to the east of the Industrial Corridor, in the area to the east of Clawiter Road and Industrial Boulevard. In this area, almost all views toward the site will be blocked by intervening structures.

### **8.13.1.4 Sensitive Viewing Areas and Key Observation Points**

To assess the RCEC's and AWT plant's potential impacts on visual resources, (this combination of facilities herein after referred to as the RCEC site) the view areas most sensitive to the project's potential visual impacts were identified and, in consultation with CEC staff, seven Key Observation Points (KOPs) were selected for detailed analysis. For all of these KOPs, photo simulations were developed to serve as a basis for visualizing the project's potential effects. In evaluating the sensitivity of the viewing areas potentially affected by the project, consideration was given to distance from the project site, number of viewers, and the presence of recreational or residential uses. The potentially sensitive viewing areas selected for analysis are indicated on Figures 8.13-1b, and the views from the KOPs are described below.

In responding to the CEC's requirement that an assessment be made of the visual quality of the landscapes potentially affected by the project, the discussion of the views seen from the KOPs includes ratings of the visual quality of the landscapes. These ratings were developed based on a series of in-field observations carried out during the months of February through April 2001, review of photos of the area, review of local planning documents, review of methods for assessment of visual quality, and review of research on public perception of the environment and scenic beauty ratings of landscape scenes. The final assessment of the visual quality of the views from each of the KOPs was made based on

professional judgement, taking into consideration a broad spectrum of landscape assessment factors in a holistic way. Factors considered included an evaluation of:

- Natural features, including topography, water courses, rock outcrops, and natural vegetation
- Positive and negative effects of man-made alterations and structures on visual quality
- Visual composition, including assessment of the complexity and vividness of patterns in the landscape
- Spatial organization, including assessment of criteria such as perceived accessibility, mystery, enclosure, scale, image, refuge, prospect, and contemplation

The relevance of these factors for landscape evaluation has been established by landscape perception and assessment research over the past 20 years. Based on these considerations, a group of landscape scholars at Virginia Technical University (Buhyoff et al., 1994) developed landscape quality ratings, specifically, the six landscape quality classes listed in Table 8.13-1. This scale provides a strong framework for qualitative ratings because it is based on findings of the full range of available research on the ways in which the public evaluates visual quality. In addition, the scale has a common-sense quality and is easily understood because it defines landscape quality in relative terms, contrasting landscapes that are low, below average, average, above average, high, and outstanding in visual quality.

#### ***KOP 1—Office/Industrial Facility Located Immediately South of the RCEC Site***

Figure 8.13-3a represents the view from KOP 1. This viewpoint was selected to represent views toward the RCEC site from the office/industrial facility located immediately south of the site. This viewpoint is located in the 200-car parking lot of the facility, at a point adjacent to the pathway that provides access to the facility's rear entrance and to an outdoor patio area. This point is approximately 500 feet from the project site's southern property line. This view is seen primarily by the occupants of the office/industrial facility as they walk to and from their cars and as they drive their cars into and out of the parking lot. Although the adjacent one-story office/industrial building has window bands on its north side that face toward the project site, the views toward the RCEC site are in many cases blocked by large trees located directly in front of the windows. The sensitivity of this view is considered to be moderately low at most in that the view is seen by a moderate number of people who are in a work environment located well within the boundaries of a large industrial corridor area that has a clearly industrial character.

From this viewpoint, the RCEC site is partially screened by white plastic slats that have been inserted into the chain link fence bordering the northern edge of the parking lot. The most visually prominent elements in this view are the four, 228-foot high, red and white-banded radio broadcast towers that now occupy much of the project site. In addition, the long, blank east wall of the one-story warehouse building to the west of the RCEC site is highly visible. The tops of the trees lining Enterprise Avenue in front of the City of Hayward Water Pollution Control Facility directly across the street from the RCEC site can also be seen, as well as small portions of some of the domes and tanks in the Water Pollution Control Facility. Due to this view's lack of topographic variation, its lack of significant vegetation, the presence of the tall radio towers, and the warehouse and sewage treatment facilities, the visual quality can be classified as low.

#### ***KOP 2—Hayward Shoreline Interpretive Center***

Figure 8.13-4a represents the view from KOP 2, which was selected to represent views toward the RCEC site from the Hayward Shoreline Interpretive Center and nearby areas of the Hayward Shoreline Marsh.

The Interpretive Center (Photo 7 on Figure 8.13-2b) is located on Breakwater Avenue in the baylands 0.73 mile to the southwest of the project site. This facility was built in 1986 by the Hayward Area Recreation and Park District, the special use district that provides park and recreation services to Hayward and the adjacent unincorporated communities of San Lorenzo and Castro Valley. The center has exhibits related to the bay and bayland ecosystems, provides ecological education programs for school children, and serves as a staging area for visitors using the network of hiking and biking trails in the adjacent Hayward Shoreline Marsh and Hayward Regional Shoreline. One of the segments of the San Francisco Bay Trail, a regional system of trails that circle the San Francisco and San Pablo Bays, passes by the Interpretive Center and travels north along the bayshore through the Hayward Shoreline open space lands.

The Interpretive Center building is surrounded by elevated wooden decks that provide vantage points for views across the baylands and space for outdoor educational activities. The view represented in Figure 8.13-4a was taken from the deck area directly in front of the main entrance to the Interpretive Center. At present, the Interpretive Center's programs serve approximately 4,500 school children per year who come to the center with their classes for special programs, 1,000 members of the general public who participate in weekend programs at the center, and an additional 9,000 members of the public who drop into the center as part of a visit to the Shoreline to use the trails (Koslosky 2001). Since the center and surrounding baylands are visited by a moderately large number of people, the focus of the activities at this location is to observe and appreciate nature, and the facility is designed to provide views across the baylands, the sensitivity of the view from this KOP can be considered to be high.

The major elements in the existing view include the expanse of open wetlands in the foreground and near middleground, the KFX radio broadcast towers and a band of large, rectangular industrial buildings in the far middleground, and the ridges of the East Bay hills in the background. Mount Diablo, visible in the far distance, is a regional landmark, and serves as a focal point in this view. Due to the openness of the natural appearing landscape in the foreground of the view, the topographic interest provided by the distant hills, and the specific visual interest provided by the view of Mount Diablo, the quality of this view can be rated as moderately high. This view is not rated as having high visual quality for a number of reasons, including the presence of the radio towers and the large, boxy, and highly contrasting warehouse structures. Although not visible in this photograph, the 180-foot high stack of the Rohm and Haas facility would be visible to viewers in the area just beyond the right side of the photograph presented in Figure 8.13-4a.

### ***KOP 3—Hayward Shoreline Footbridge at Cogswell Marsh***

KOP 3 was selected to represent views toward the RCEC site from the trail system in the Hayward Regional Shoreline. Figure 8.13-5a is a photograph of the view taken from the footbridge that crosses Cogswell Marsh. This viewpoint is located approximately 1 mile to the northwest of the project site. The trails in the Hayward Regional Shoreline receive heavy use by walkers, runners, and bicyclists, and the East Bay Regional Park District estimates that the area is visited by 200 to 250 people per day. Since the trails in the Hayward Regional Shoreline are heavily used and are intended for recreation and to provide opportunities for the observation, understanding, and appreciation of the natural environment, the views from this area can be considered to have a high level of sensitivity.

**Table 8.13-1.** Landscape visual quality scale used in rating project area viewsheds.

<b>Rating</b>	<b>Explanation</b>
Outstanding Visual Quality	A rating reserved for landscapes with exceptionally high visual quality. These landscapes are significant nationally or regionally. They usually contain exceptional natural or cultural features that contribute to this rating. They are what we think of as “picture post card” landscapes. People are attracted to these landscapes to view them.
High Visual Quality	Landscapes that have high quality scenic value. This may be due to cultural or natural features contained in the landscape or to the arrangement of spaces contained in the landscape that causes the landscape to be visually interesting or a particularly comfortable place for people. These are often landscapes which have high potential for recreational activities or in which the visual experience is important.
Moderately High Visual Quality	Landscapes which have above average scenic value but are not of high scenic value. The scenic value of these landscapes may be due to man-made or natural features contained within the landscape, to the arrangement of spaces in the landscape or to the two-dimensional attributes of the landscape.
Moderate Visual Quality	Landscapes that have average scenic value. They usually lack significant man-made or natural features. Their scenic value is primarily a result of the arrangement of spaces contained in the landscape and the two-dimensional visual attributes of the landscape.
Moderately Low Visual Quality	Landscapes that have below average scenic value but not low scenic value. They may contain visually discordant man-made alterations, but the landscape is not dominated by these features. They often lack spaces that people will perceive as inviting and provide little interest in terms of two-dimensional visual attributes of the landscape.
Low Visual Quality	Landscapes with low scenic value. The landscape is often dominated by visually discordant man-made alterations; or they are landscapes that do not include places that people will find inviting and lack interest in terms of two-dimensional visual attributes.

*Note:* Rating scale based on Buhyoff et al., 1994.

The major elements in this view include the expanse of open water and wetlands in the foreground and near middleground, the KFOX radio towers, the Rohm and Haas stack, the band of large, boxy industrial buildings in the far middleground, and the ridges of the East Bay hills in the background. Due to the openness of the natural appearing landscape in the foreground of the view and the topographic interest provided by the distant hills, the quality of the view from this viewpoint can be rated as moderately high. This view is not rated as having high visual quality because of the presence of the KFOX radio broadcast towers, the Rohm and Haas stack, and the large, boxy, and highly contrasting warehouse structures.

**KOP 4—State Route 92 at Toll Plaza**

Figure 8.13.6a represents the view from KOP 4, located on State Route 92 at the toll plaza at the east end of the Hayward-San Mateo Bridge, 1.44 mile to the southeast of the project site. This viewpoint is representative of the views experienced by travelers as they head east across the bridge and continue eastwards on State Route 92 through the open baylands landscape. The Average Daily Traffic (ADT) for

State Route 92 in this area is 93,000 vehicles per day in the east bound lanes and 85,000 vehicles per day in the west bound lanes. The RCEC site is detectable within the cone of vision of travelers from about the midpoint of the span up until a point about 0.35 mile west of the Clawiter Road off-ramp. The Urban Design chapter of the City of Hayward's General Policies Plan designates the eastern foot of the Hayward-San Mateo Bridge as a community "gateway" and recommends providing "suitable landmarks or entry features" at gateway areas. Due to the site's visibility to large numbers of viewers using the State Route 92 corridor and because of this area's location at a major entry to the city that has been given formal recognition in the city's urban design plan, views from this KOP can be considered to have a high level of visual sensitivity.

As suggested by Figure 8.13-6a, the near foreground of the view experienced by eastbound travelers is dominated by the roadway, the road divider, and the dense concentrations of vehicles using both the eastbound and westbound lanes. The open expanses of natural-appearing baylands are visible in the far foreground and middleground. The line of large, rectangular industrial buildings, the KFAX radio broadcast towers, and the Rohm and Haas stack are visible in the far middleground, and the ridgeline of the East Bay hills and Mount Diablo provide the backdrop to the view. The presence of the natural-appearing baylands and the hills in the backdrop create a degree of visual interest, but because of the dominance of the roadway elements in the foreground, and the presence of large industrial structures in the middleground, the visual quality of this view would have to be rated as moderate at most.

#### ***KOP 5—Cabot Boulevard at Depot Road***

Figure 8.13-7a represents the view from KOP 5, a viewpoint located on Cabot Boulevard at its T-intersection with Depot Road. This viewpoint lies approximately 0.38 mile from the northern boundary of the RCEC site. This viewpoint was selected to represent views toward the RCEC site from the portions of the Industrial Corridor directly to the north. From most of the industrial facilities in this area, views toward the RCEC site appear to be screened to a large degree by industrial buildings and by the plantings in their setback areas. To the extent that the RCEC and its ancillary facilities would be visible, they would have the highest probability of being seen from the southern end of Cabot Boulevard and from parallel north-south streets (Foley Street and Connecticut Street) that provide open view corridors oriented toward the project site. Since the views toward the site from this area would be seen by people engaged in work or traveling to and from industrial facilities located in the midst of a large zone set aside for exclusive industrial use, the visual sensitivity of these views would have to be considered to be low.

Views toward the RCEC site from the viewpoint of Figure 8.13-7a are substantially blocked by the screening wall that surrounds the auto salvage yard located along the south side of Depot Road. One of the structures in the auto salvage yard is visible, along with the tops of the radio towers located on the project site. The visual quality of this view is low.

#### ***KOP 6—Residential Areas East of Industrial Boulevard***

The closest residences to the site are 0.82 mile to the east of Industrial Boulevard. Residences in this area include the Waterford apartment complex, and a dense cluster of two and three story apartment buildings in a heavily landscaped setting that extends from Industrial Boulevard to an area west of Mount Eden Cemetery along Depot Road. From this apartment complex, ground level views toward the RCEC site are blocked by large industrial structures to the west of Industrial Road, as well as by the complex's own buildings and landscaping. It is conceivable that the project could be visible to some degree from third story units located along the complex's western edge. However, because of the large trees located

directly in front of the apartment buildings in this area (Photo 8 on Figure 8.13-2b), any potential views toward the RCEC site would be screened to a large degree during much of the year.

North of Depot Road and east of Industrial Boulevard is an area of mixed residential uses. It includes older single family homes on large lots that are remnants from the time when this was a semi-rural unincorporated area, as well as small clusters of dense town homes and single family tract homes that have been developed in more recent years on infill parcels. From most of this area, views toward the RCEC site and the radio towers are completely blocked by foreground buildings and vegetation. In a few small pockets where the density is low, there are views between houses or across open areas in which the tops of the KFAX radio towers can be seen. One of these places is an area along Laguna Drive west of Mohr Drive where the presence of a low density area on the south side of the street permits views toward the site and the KFAX radio towers. This viewpoint has been designated as KOP 6, and the view from this area is presented in Figure 8.13-8a. This view can be seen from the areas in front of and around approximately 12 residences in this area. This view may also be visible from second story windows of a number of the town homes located on the north side of Laguna Drive. Since KOP 6 is the view from a residential area, the visual sensitivity is high.

As is evident in Figure 8.13-8a., the dominant elements in the view are the two older single family residences on large lots. The tops of the radio towers on the RCEC site are barely detectable against the sky in the far distance. This view would be rated as moderate in visual quality.

#### ***KOP 7—Electric Transmission Line Crossing of State Route 92***

For most of its length, the portion of the Grant-Eastshore 115-kV line that will be rebuilt travels across industrial properties where it is not readily visible to the general public. The major exception is at the point where the transmission line crosses State Route 92, where it is seen by the occupants of 93,000 eastbound vehicles per day that travel this segment of roadway. This KOP was selected to represent views toward the Grant-Eastshore transmission tower located on the south side of State Route 92 at the Clawiter Road intersection. The viewpoint is located just west of the Clawiter Road off-ramp and captures the view of the transmission tower as it is seen by eastbound travelers. In several years, when the Bay Trail pedestrian/bicycle overpass planned for the area 2,600 feet to the west of the transmission line and 1,110 feet west of this viewpoint is complete, users of the overpass will have a view that is somewhat similar to the one that this KOP represents. The view from this KOP is presented in Figure 8.13-9a. Since the transmission tower is visible well within the cone of vision of large numbers of travelers on the highway, and since views are sometimes of long duration because of traffic back-ups, and because the transmission tower will be seen in the middleground of views from the future pedestrian overcrossing, this view can be considered to have a moderately high level of sensitivity.

As suggested by Figure 8.13-9a, the hills in the background and several clusters of trees along the edge of the highway provide a modest level of visual interest, but on the whole, the landscape visible in this view is one in which infrastructure elements, including the State Route 92 roadway, the Clawiter Road overpass, and the existing 120 foot high transmission tower are visually dominant. Visual quality of this view would have to be rated as moderately low.

## **8.13.2 Environmental Consequences**

### **8.13.2.1 Analysis Procedure**

This analysis of visual impacts potentially caused by the RCEC is based on field observations and review of the following information: local planning documents, project maps and drawings, photographs of the project area, computer-generated visual simulations from each of the KOPs, and research on design measures for integrating electric facilities into their environmental settings.

Photographs are presented to represent the “before” conditions from each KOP. Visual simulations were produced to illustrate the “after” visual conditions from each of these points, providing the viewer with a clear image of the location, scale, and visual appearance of the proposed project. The “before” photos and the simulations of the “after” conditions are presented as pairs to facilitate comparison. 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. Site reconnaissance was conducted to view the site and surrounding area, to identify potential key viewpoints, and to take representative photographs of existing visual conditions. A single lens reflex (SLR) 35 mm camera with a 50 mm lens (view angle 40 degrees) was used to photograph the sites.

For the views from the KOPs, computer modeling and rendering techniques were used to produce the simulation images. Existing topographic and site data provided the basis for developing an initial digital model. 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, a viewer location was digitized from topographic maps and scaled aerial photographs, using five feet as the assumed viewer eye level. 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.

### **8.13.2.2 Significance Criteria**

Analysis of the project’s impacts was based on evaluation of the changes to the existing visual resources that would result from construction and operation of the RCEC. An important aspect of this analysis was evaluation of the “after” views provided by the computer-generated visual simulations, and their comparison to the existing visual environment. In making a determination of the extent and implications of the visual changes, consideration was given to:

- The specific changes in the affected visual environment’s composition, character, and any specially valued qualities
- The affected visual environment’s context
- The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration

- The numbers of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the likely changes

To make the determination of whether the project's visual effects would be "significant" under the provisions of the California Environmental Policy Act (CEQA), reference was made to Appendix G of the State 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). Appendix G of the Guidelines, under Aesthetics, lists the following four questions for lead agencies to address:

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

### **8.13.2.3 RCEC and Advanced Wastewater Treatment Plant**

The features of the 600-MW (nominal gross output) natural gas-fired combined-cycle generating facility and the electrical switching station associated with it are described in detail in Chapter 2.0, Project Description. Figure 2.2-1 is a plan that indicates the layout of the power plant, advanced wastewater treatment plant, and switching station features on the site. Figures 2.2-2a and 2.2-2b provides typical elevation views. Table 8.13-2 summarizes the equipment dimensions of the RCEC's major features.

Most of the power plant's water needs will be met through use of wastewater provided by the City of Hayward's WPCF. To make this water suitable for power plant use, it will be given tertiary treatment in an advanced wastewater treatment (AWT) plant to be located adjacent to the power plant. The location of this facility is indicated on Figure 2.3-1. The AWT plant is described in Chapter 7. In general, the advanced wastewater treatment plant will have a low profile. The dimensions of its larger elements are indicated on Table 8.13-2.

### ***Electrical Transmission System***

The transmission system associated with the proposed project is described in Chapter 6. The transmission conductors will leave the switching station using a 108-foot high pull-off structure. From the pull-off structure the first span of conductors will travel a short distance northeast to a 115-foot high turning structure adjacent to Grant-Eastshore transmission line in the area east of the City of Hayward WPCF. This portion of the Grant-Eastshore line from this point south to the Eastshore Substation will be rebuilt, and the existing lattice steel towers that carry two 115-kV circuits will be replaced with tubular steel H-frame towers that carry two new 230-kV circuits as well as the two existing 115-kV circuits. Diagrams of the tower types that will be used are shown in Figures 6.2-4 and 6.2-6 and 6.2-8).

**Table 8.13-2. RCEC equipment dimensions.**

<b>Feature</b>	<b>Height (feet)</b>	<b>Length (feet)</b>	<b>Width (feet)</b>	<b>Diameter (feet)</b>
<b>HRSG Units</b>				
To top of HRSG casings	72			
To operating decks	90			
To top of highest drums	101			
To top of top works support steel	116			
To top of highest relief valves and vent	122			
HRSG stacks	145	16	16	
<b>Gas Combustion Turbines</b>				
Gas combustion turbines	32	30	23	
Gas turbine air inlet filters	42	40	25	--
<b>Steam Turbine Generator</b>				
STG enclosure	38	75	20	
Cooling Tower (10 cells)		473	cell=48	30 (ea. cell)
Top of cones	64		basin=56	
<b>Architectural Screening Structures</b>				
“Wave” enclosure for HRSGs and stacks	135	222	180	
Cooling tower enclosure	62	500	85	
<b>Tanks</b>				
Demineralized water storage tanks	25	--	--	25
<b>Buildings Along Whitesell Street</b>				
Administration and Control, Warehouse, and Water treatment Building	25	260	75	
Gas compressor building	16	60	30	
<b>Switchyard</b>				
switchyard bus structures	34	25	--	
conductor take-off structures	72	42	--	
north switchyard control building	25	24	23	
south switchyard control building	25	50	23	
<b>Advanced Wastewater Treatment Plant</b>				
microfiltration canopy	20	145	34	
reverse osmosis canopy	20	145	44	
chemical and dewatering area	20	102	47	
lime silo	47			18
sludge loading bay	42	65	24	
final product water storage tanks (2)	36			100

The new transmission structures will be given a neutral gray finish that will minimize reflectivity, be harmonious with the colors of the nearby power plant structures and industrial buildings, and help minimize their contrast with the sky backdrop.

### ***Natural Gas, Water Supply, and Wastewater Return Pipelines***

The design features of the natural gas and water supply pipelines that would be built to serve the project are described in Sections 5.0 and 7.0, respectively. The locations of these pipelines are indicated on Figures 1-2 and 2.3-2. Since these lines would be buried and the surface conditions restored, the lines themselves would not be the source of long-term changes to the visual environment. Any noticeable visual effects associated with the pipelines would be restricted to the construction phase. During construction, the area along the rights-of-way would be temporarily disrupted by machinery, excavated piles of dirt, construction vehicles, and other disturbances associated with pipeline construction. However, these effects would be minor and temporary, and would not be significant.

### ***Construction Lay Down Area***

As detailed in Section 2.2.15, construction of the project from site preparation and grading to commercial operation is expected to take place during an 18 to 21-month period extending from the summer of 2002 to the summer of 2004. During the construction period, three areas may be used for laydown of equipment and parking for construction workers. One of the areas is a 10-acre site located north of the project on Depot Road. Another is the four-acre site on the east side of Whitesell Street and south of Enterprise Avenue that is now used as a truck terminal. A third is the vacant land around PG&E's Eastshore Substation.

### ***Architectural Treatment***

In recognition of the RCEC's location near the edge of the baylands where it has high visibility and at the State Route 92 gateway to Hayward, Calpine/Bechtel has made a commitment implement an architectural treatment that will increase its attractiveness and make it a landmark visual element at the city's western entry. To develop an appropriate architectural treatment, Calpine/Bechtel made use of the services of an international architectural firm specializing in design of power plants and other major infrastructure facilities. In developing the proposed design, Calpine/Bechtel consulted with City staff and elected officials. The design treatment selected for the power plant is presented in Figure 8.13-10 and is visible in the simulations prepared for each of the KOPs. The design scheme being applied makes use of a tubular steel space frame around the HRSG units and HRSG stacks and another space frame around the cooling tower. An open stainless steel mesh will span the members of these space frames, creating a semi-transparent to opaque surface that will, under some lighting conditions, screen the plant's equipment, and under others, reveal it. The intent of the space frame and mesh is to simplify the complexity of the plant's equipment and create a unified visual element that has a sculptural quality. The screen around the power plant has a "wave" shape intended to create a sense of motion and to serve as a distinctive landmark element. The side mesh panels on the "wave" structure span between front and back structural chords, creating a three-dimensional, louvered effect. The bowed space frame around the cooling tower creates an object with curved lines that complement the curves of the adjacent "wave" structure. This space frame also hides the cooling tower cones that would otherwise appear to protrude above the structure. The tubular steel members of the space structures will be painted blue, the stainless steel mesh will have a brushed finish that is non-reflective, and the power plant and switching station equipment will be finished using a palette of soft grays and blue-grays. The one-story buildings housing the facility's administrative offices, warehouse, and water treatment laboratory and fronting on Whitesell Street will be given an appropriate architectural treatment that will be consistent with the design of the project's larger features and which will comply with the City of Hayward's architectural design guidelines for industrial districts.

### ***Landscaping***

The layout of the project facilities on the site and the design of the project landscaping take into account the future widening of Whitesell Street and its conversion into a four-lane boulevard. In determining the setback required along Whitesell, the edge of the widened street right-of-way was used as the point of reference. In areas along the perimeter of the site that front on streets, standard street trees will be planted to comply with the requirements of the City of Hayward's zoning ordinance and to provide for a continuation of the Industrial Corridor's tree canopy. The canopy created by the street trees will block views toward stacks, antennas, and other tall features from nearby areas and will integrate the project into the overall visual composition of the area. In the corridor along Whitesell Street, the setback area in front of the long, one-story structure housing the administrative offices and other functions will be landscaped with a mixture of trees, shrubs, and groundcovers to create a visually engaging composition in views from the existing two lane road and the proposed future boulevard. On all the other sides of the site, with the exception of the area that lies between the advanced water treatment plant and the warehouse structure to the west, a border of tall, fast-growing broadleaf trees will be planted to provide maximum screening of views toward the site.

### ***Lighting***

The RCEC will require nighttime lighting for operational safety and security. To reduce any offsite impacts of this requirement, lighting at the facility will be restricted to areas required for safety, security, and operation and will be turned off in areas where personnel are not present. Exterior lights will be hooded, and lights will be directed onsite so that significant light or glare will not be created. Fixtures of a non-glare type will be specified.

### ***Visible Plumes***

The process of condensing the steam used in generating power in the steam turbine generator can cause the formation of visible water vapor plumes above the cooling tower during periods of cold weather and high humidity. To eliminate this effect, the RCEC will employ a special plume-abated cooling tower design that will eliminate visible plumes except during the most extreme cold weather. This technology is referred to as a "wet/dry" cooling tower, which incorporates an air-cooled or "dry" heat exchanger section along with the conventional wet evaporative cooling section. The dry heat exchanger typically consists of finned tubes, with the warm circulating water passing through the tubes and the ambient cooling air passing over the exterior finned surface of the tubes. The combination of evaporative and non-evaporative heating results in reduction of the relative humidity of the air leaving the wet/dry cooling tower. Since the relative humidity is reduced below the saturation point, the water vapor in the plume will not condense before it mixes with the drier ambient air and therefore will not be visible.

Plume abatement capability for a maximum allowable plume length is specified to be effective for any condition less severe than the winter design point, defined by the ambient dry bulb temperature, relative humidity, cooling range, circulating water flow rate, and maximum and minimum cold water temperatures. The specific design conditions for the RCEC project will be developed to provide the plume abatement capability to restrict plume formation to so visible plumes occur only under the most extreme meteorological conditions. With the design being used for the HRSGs, water vapor plumes will not be seen emanating from the plant's HRSG stacks, under nearly any circumstances.

#### **8.13.2.4 Assessment of Visual Effects**

##### ***KOP 1—Office/Industrial Facility Located Immediately South of the Energy Center Site***

Figure 8.13-3b represents the view of the completed project as it will appear from KOP 1, ten years after completion of construction and installation of the perimeter landscaping. As this simulation suggests, the plant will be clearly visible from the parking lot of the office/industrial facility located immediately south of the site and will become the major element in the foreground of the view. The project will substantially change the existing view. The broadcast towers will be removed, and what is now a generally open view of the sky will be blocked to a large degree by the screened power plant structures and by the tall trees planted along the southern edge of the energy center site.

Although the character of this scene will change substantially, the overall quality of the view, which as indicated previously is now low, will not be changed. The case can be made that, because of the architectural quality of the screening structures and the addition of the row of trees, the view's level of visual interest and visual quality will be improved.

##### ***KOP 2—Hayward Shoreline Interpretive Center***

Figure 8.13-4b is a simulation of the view toward the project from KOP 2 at the Hayward Shoreline Interpretive Center. This simulation represents the view of the completed project as it will appear from KOP 2 ten years after the installation of the perimeter landscaping.

As this simulation indicates, the KFAX radio broadcast towers now visible on the RCEC site will no longer be a part of the view. Instead, the low vertical structure screening the cooling tower will be visible in the area from which the broadcast towers now rise to the sky, and the tall "wave" structure surrounding the HRSG units and stacks will be visible in the area to the right of the space that the radio towers now occupy. The screening structure around the cooling tower will only be partially visible because of the screening provided by the trees that will be planted along the site's perimeter. Due to its moderate height, horizontal form, tree screening of its lower half, and a background consisting of the distant hills, the cooling tower screening structure will blend well into the view, which already includes a number of horizontal structures that are generally similar in scale. In spite of the project's 0.70-mile distance from this viewpoint, the screening structure around the HRSGs, HRSG stacks, and other major project features will appear as a large and visually prominent element in the view. The vertical form of this screening structure will contrast with the other, largely horizontal elements in the view. Since this structure extends above the hill backdrop, the structure's top portion will be seen against the sky, increasing its visual salience. The structure's visual salience is further increased by its location in the line of sight toward Mount Diablo, which is now one of the points of interest in the view. Although the HRSG stacks are faintly visible behind the screen and the tops of the stacks extend slightly above the top of the structure, the screening structure succeeds in minimizing any industrial connotations that the facility might otherwise have, and rendering it as a more neutral sculptural element in the landscape.

The development of the project will change the composition of this view. At present, the view is one that has a strongly horizontal composition. The "wave" structure around the project's major components will become bulky and prominently visible vertical element, which will contrast with the horizontal trend of the existing scene. In addition, the view toward Mount Diablo will be replaced with a view of the "wave" structure's sculptural form.

The view visible from this KOP is now classified as moderately high on the visual quality scale. Due to the visual prominence of the project's "wave" screening structure in the line of sight toward Mount

Diablo and because of the visual contrast with the setting created by the “wave” structure’s verticality, the presence of the generating facility will cause a reduction in the visual quality of this view. Although the visual quality of the view will be reduced to some extent, the change will not be so substantial as to lower the view’s visual quality rating to “moderate” the rating class that applies to landscapes of average scenic value.

### ***KOP 3—Hayward Shoreline Footbridge at Cogswell Marsh***

Figure 8.13-5b is a simulation of the view of the RCEC as it will appear from KOP 3 at the footbridge crossing Cogswell Marsh in the Hayward Regional Shoreline. The KFAV radio broadcast towers that are currently faintly visible against the sky above the RCEC site will no longer be a part of the view. In their place, viewers will see the project’s tall, curved “wave” screening structure, as well as the long, horizontal screening structure around the cooling tower.

Much of the screening structure around the cooling tower will not be visible because of the screening provided by the long warehouse building located west of the RCEC site, and because of the trees to be planted around the site’s perimeter. Due to its moderate height, horizontal form, the screening of its lower half, and its visual integration into the hills behind it, the cooling tower screening structure will blend well into the view, which already includes a number of large horizontal structures. It is relevant to note that many of the long, horizontal warehouse and industrial structures now visible in this view have a higher degree of contrast with the backdrop than the RCEC cooling tower will have because of the light tones they are painted.

The “wave” screening structure around the HRSG and HRSG stacks will become the largest vertical element in the view. Although clearly visible, the “wave” structure achieves a good level of visual absorption into its setting because its lower portions are screened by the adjacent warehouse building and cooling tower screening structure, and its curved lines relate it to the lines of the ridges in the background. Also, it is seen against the backdrop of the hills rather than the sky, and the screening mesh creates a rough, dull texture that minimizes the structure’s contrast with its backdrop. Even though the HRSGs and HRSG stacks are partially visible behind the screen and the tops of the stacks extend slightly above the top of the structure, the screening structure succeeds in minimizing any industrial connotations that the facility might otherwise have, and renders it as a more neutral sculptural element in the landscape. In addition, from this specific viewpoint, and from many others to the north of it, the “wave” structure will provide partial to full screening of views toward the 180-foot high stack at the Rohm and Haas plant.

Since the RCEC will have a good level of integration into its setting, will not “read” as an industrial facility, and will block views of the stack at the Rohm and Haas facility, it will not have an adverse effect on the visual quality of this view, which will continue to be classified as moderately high.

### ***KOP 4—State Route 92 at Toll Plaza***

Figure 8.13-6b is a simulation of the view of the RCEC as it will appear from KOP 4 in the eastbound lanes of State Route 92 at the toll plaza at the eastern end of the Hayward-San Mateo Bridge. This simulation depicts the project as it will appear with landscaping after 10 years of growth.

The radio broadcast towers that are currently faintly detectable against the sky above the RCEC site will no longer be a part of the view. In their place, viewers will see the side and front of the project’s tall,

curved “wave” screening structure, as well as the long, horizontal screening structure that surrounds the cooling tower.

The lower half of the screening structure around the cooling tower will not be visible because of the screening provided by the trees to be planted around the site’s perimeter. Due to its moderate height, horizontal form, the screening of its lower half, and its visual absorption into the hills behind it, the cooling tower screening structure will blend well into the view, which already includes a number of large horizontal structures.

The “wave” screening structure around the HRSG, HRSG stacks, and other large project elements will become the largest vertical element in the view, but it will be shorter than the existing stack at the Rohm and Haas facility. Although the “wave” structure will be large and visible, when seen from this vantage point, it will achieve a good level of integration into its setting because its base will be screened by the trees to be planted around the site’s perimeter, and its curved lines relate it to the lines of the ridges in the background. Also, it is seen against the backdrop of the hills rather than the sky, and the screening mesh creates a rough, dull texture that minimizes the structure’s contrast with its backdrop. Even though the HRSGs and HRSG stacks are partially visible behind the screen and the tops of the stacks extend slightly above the top of the structure, the screening structure succeeds in minimizing any industrial connotations that the facility might otherwise have, and renders it as a more neutral sculptural element in the landscape. From this viewpoint, the dynamic, curved form of the “wave” structure will be evident, and will add to the structure’s value as a distinctive and positive landmark that signifies the transition from the Bay crossing and open baylands to the developed portions of the city to the east.

Since the RCEC will integrate well into its setting, will not “read” as an industrial facility, and will play a role as a distinctive and attractive landmark, it will not have an adverse effect on the visual quality of this view, which is now classified as moderate on the Buhyoff visual quality scale.

#### ***KOP 5—Cabot Boulevard at Depot Road***

Figure 8.13-7b is a simulated view toward the project from KOP 5 at the intersection of Cabot Boulevard and Depot Road. As this simulation indicates, the project will have relatively little effect on the view from this KOP. The radio broadcast towers now visible in this view will be removed, and in their place, a small portion of the RCEC will be visible. The tops of the stacks and the top portion of the back side of the “wave” screening structure around the HRSGs and HRSG stacks will appear in the area immediately above the fence surrounding the automobile salvage yard in the foreground of the view. The visual quality of the view from this KOP is currently rated as low and, with development of the project, the level of visual quality will not change.

#### ***KOP 6—Residential Areas East of Industrial Boulevard***

No visual simulation is being presented for the view from KOP 6, the view from the residential area along Laguna Drive east of Mohr Drive. When the wire frame perspective plot of the project facilities was overlaid on the photograph of the view, it was determined that none of the project’s features will extend above the foreground elements in the view, and that thus the project will not be visible from this KOP.

Although the project’s features will not be visible from the ground level in this area, it is conceivable that the tops of the stacks and the “wave” structure may be visible from the windows on the second story of 8 or so homes on the north side of Mohr Drive. However, because of the distance (a little over 1.0 mile),

and the complexity and developed character of the foreground and middleground, the project is not likely to have much of an effect on these views. The visual quality of views from this area, which are now classified as moderate, will not be affected.

### ***KOP 7—Transmission Line Crossing of State Route 92***

Figure 8.13-9b is a simulated view of the project's transmission line at the point where it crosses State Route 92 at the interchange with Clawiter Road. As this simulation indicates, the existing 120-foot high lattice steel transmission tower carrying the two 115-kV circuits of the Grant-Eastshore line will be removed, and replaced with a tubular H-frame tower that will carry the two 230-kV circuits required by the project as well as the existing 115-kV circuits. The new transmission tower will be the same height as the existing tower. Although the tower will carry more conductors than the existing structure, because it will have steel tube rather than lattice steel construction, it will not appear to be substantially more massive or more visually complex than the existing tower that it replaces. The overall effect of the rebuilt line on this viewpoint will be very small. There will be no change in the visual quality of the view seen from this KOP, which is now classified as moderately low.

### ***Visible Plumes***

The following results are based on computer modeling of a conventional cooling tower, and therefore overstate the potential for visible plumes. A plume-abated cooling tower will be constructed at the RCEC. The plume-abated cooling tower will be designed to prevent the formation of visible plumes under all but the most extreme meteorological conditions.

Under some circumstances, the a conventional cooling tower would produce visible plumes from the 10 cells of the cooling tower. The results of the computerized modeling of plume formation indicate that a plume of some length would theoretically be visible up to 4,031 hours per year; however, only 1,003 (or 25 percent) of these hours would be during daylight. During nighttime hours, an observer could see the plume only if there were sufficient natural or artificial light. Due to the measures that will be taken to reduce lighting at the plant, any plumes that are created will not be highly visible during the nighttime hours.

Of the plumes potentially visible above a conventional cooling tower during daylight hours, 67 percent would be less than 40 meters in length, 19 percent would be between 40 and 100 meters, 11 percent would be between 100 and 400 meters, and 4 percent will be more than 400 meters. It is important to note that visible plumes will tend to form in the winter months and during early morning hours when the temperature would be extremely low and the humidity is relatively high. This is also the time when fog would tend to form, and if fog were present, the plumes would tend to blend into the fog. The fog would not prevent the formation of visible water-vapor plumes; however, it would make it more difficult, if not impossible, for the plumes to be distinguished from the surrounding air. The same would be true during rainy weather.

Under almost all circumstances, no visible plumes will be seen emanating from the RCEC's HRSG exhaust stacks. However, on a few occasions during the year when temperatures are extremely low and humidity is extremely high, very wispy-plumes coming from the stacks may be visible. The times when HRSG plumes are most likely to occur will tend to be at night and in the early morning hours or during rain or fog, when they are least likely to be visible.

### ***Light and Glare***

The RCEC's effects on visual conditions during hours of darkness will be very limited. As indicated previously, some night lighting will be required for operational safety and security. High illumination areas not occupied on a regular basis will be provided with switches or motion detectors to light these areas only when occupied. At times when lights are turned on, the lighting level will be limited to that required for personnel safety, and will not be highly visible offsite and will not produce offsite glare effects. The offsite visibility and potential glare of the lighting will be restricted by specification of non-glare fixtures, and placement of lights to direct illumination into only those areas where it is needed. The landscape screening to be installed around the site will further reduce the visibility of facility's night lighting, particularly in views from areas located close by.

#### **8.13.2.5 Construction Laydown Area**

Construction laydown areas will be located at various locations along the south side of Depot Road, along Enterprise Avenue and across Whitesell Street from the project site. A portion of the vacant land the Eastshore Substation will be used for construction worker parking. These areas will be surrounded by chain link security fences, and solid slats will be inserted into the sides of any portions of these fences that front on public streets to reduce the visibility of the equipment and vehicles stored on these sites. Although the vehicles, equipment, and stored materials in the laydown areas may be visible to a small degree to drivers on nearby streets and users of nearby industrial sites, the activities in the laydown areas will have relatively little effect on the overall character and quality of the Industrial Corridor setting in which they are located. For example, the truck terminal site across Whitesell Street from the RCEC site is now an unscrubbed, unpaved area that is already occupied by parked cars and large construction trucks. The Eastshore Substation site is a large site in the midst of the industrial area and is partially developed with substation facilities and partially vacant. A chain-link fence with slats already provides substantial screening of the activities on this site as seen from the surrounding area. Since the laydown areas are located within a large corridor that is very explicitly dedicated to industrial activities, and would only be visible from at close range within this industrial zone, it can be presumed that viewer sensitivity to any visual changes associated with the project would be low. Because of the low level of viewer sensitivity, the minor level of visual change, the limited time period involved, and the fact that the sites will be restored to their previous condition at the end of the construction period, it can be concluded that the project's use of the two construction laydown areas will not create significant adverse visual impacts.

#### **8.13.2.6 Impact Significance**

Any visual effects of the project that will be significant under CEQA are identified below. The identification of these impacts has been structured by applying the criteria set forth in Appendix G of the State 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 five questions related to aesthetics that are posed for lead agencies and the answers to them for the RCEC are:

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

In the project viewshed, there are no developed or officially designated roadside scenic vista areas. However, the trail system in the Hayward Shoreline and Hayward Regional Shoreline open space areas,

the area around the Hayward Shoreline Interpretive Center, and the eastern end of the Hayward-San Mateo Bridge and the portion of State route 92 at its eastern foot can be assumed to provide scenic views that are valued by the public.

The project's effects on the view from KOP 3, the viewpoint on the pedestrian bridge over Cogswell Marsh in the Hayward Regional Shoreline will be less than significant. Although the RCEC's larger features, particularly the "wave" structure, will be highly visible in this view, they will have a good level of integration into their setting, will not "read" as industrial facilities, and will block views of the stack at the Rohm and Haas plant. As a result, there will not be a substantial reduction in the overall visual quality of the existing view.

The project's "wave" structure that screens the HRSGs and HRSG stacks will become a prominently visible feature in the view from KOP 2, the Hayward Shoreline Interpretive Center. Since this structure is larger in scale than other existing features in the view, contrasts with the horizontal trend of this landscape, and blocks the view of Mount Diablo from this vantage point, it will cause a perceptible change in the character, but not necessarily the quality of this view. The overall visual effects of the "wave" structure on the view are attenuated by the fact that it neutralizes the industrial character of the HRSGs and stacks and has a high quality of architectural design and use of materials that create a distinctive landmark structure that add a new dimension of visual interest to the view. The project's overall effect on the view will not result in a change in the view's current visual quality rating of moderately high. As a consequence, the project's effects on the view from this KOP will be less than significant. In addition, Calpine/Bechtel will donate funds to the Hayward Area Recreation and Park District (HARD) for providing benches and other amenities on its trail system. The HARD is the entity that operates the Hayward Shoreline Interpretive Center and the adjacent Hayward Shoreline Marsh area. If the District desires, some of these funds can be used to provide enhancements on portions of the trail to the northwest of the Interpretive Center where views toward Mt. Diablo will not be affected by the RCEC.

As indicated in the analyses of views from KOP 4, the project would not have a significant adverse effect on views across the baylands toward Hayward from the Hayward-San Mateo Bridge and the portions of State Route 92 at the bridge's eastern foot. From this viewpoint, the screening structure around the cooling tower will blend unobtrusively into the overall landscape pattern. The larger "wave" structure screening the HRSG and HRSG stacks will not "read" as an industrial facility, will integrate well with its backdrop, and will appear as a distinctive and positive landmark at Hayward's State Route 92 entry from the West Bay.

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

This question does not apply to the RCEC project because none of the project facilities fall within the boundaries or viewshed of a state scenic highway or other important scenic resource.

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

Since the project site itself does not contain any special aesthetic resources and does not have a high level of visual quality, and because the project will be carefully designed and landscaped, the changes brought about by the project will not "degrade" the existing character and quality of the site.

Since the site is located in the midst of a corridor that is explicitly dedicated to industrial use and which already has a high degree of utilitarian development, the project will not have a substantial effect on the visual quality and character of views from streets and properties in the industrial area around it. The minimal effect that the project will have on aesthetic conditions in the industrial corridor is illustrated by the analyses presented of project effects on KOP 5.

As indicated in the analyses of KOP 6, the RCEC will not be particularly visible from Hayward's residential areas, which are located 0.82 mile to the east, and thus will have very little effect on these areas.

Although the project will be visible in the open views from the baylands to the west, as indicated in the responses to Question 1, the project will not have a substantial adverse effect on the character and quality of views from these areas.

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

As described in Section 8.13.2.3.4, project light fixtures will be restricted to areas required for safety, security, and operations; lighting will be directed onsite; lighting will be shielded from public view; and non-glare fixtures and use of switches, sensors, and timers to minimize the time that lights not needed for safety and security are on will be specified. These measures should substantially reduce the offsite visibility of project lighting. Offsite visibility of lighting will be further reduced by the landscape plantings that will provide additional screening of any lighting associated with the project's lower elements. With these measures, lighting associated with the project will not pose a hazard or adversely affect day or nighttime views toward the site. As a consequence, the impacts of the project's visual effects related to lighting will be less than significant.

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

As documented in the LORS analysis in Section 8.13.5, the project will be in conformance with the applicable implementing policies, ordinances, or other regulations specifically related to visual resources identified in the City of Hayward General Policy Plan and Zoning Ordinance provisions that pertain to this area.

### **8.13.3 Cumulative Impacts**

At present, there are no projects of any significant size or potential visual impact that are in the final planning or approval process for sites in the immediate vicinity of the RCEC project facilities. As a consequence, in the immediate future, it is reasonably foreseeable that there will be no development of new facilities whose visual effects, when combined with those of the RCEC, would constitute significant impacts on visual resources under the CEQA guidelines.

### **8.13.4 Proposed Mitigation Measures**

#### **8.13.4.1 RCEC Site**

The following mitigation measures have been included in the project design to reduce the generating facility's impacts on visual resources:

Careful site planning and landscape design, including the following:

- The project's major structures have been located so as to provide generous setbacks from surrounding streets. Along Enterprise Avenue, the cooling tower is set back approximately 90 feet from the edge of the roadway. Along Whitesell Street, the one-story warehouse/administration/water treatment building is set back 50 feet from the roadway, and the HRSG structures are set back 230 feet.
- Placement of the one-story warehouse/administration/water treatment building, 25-foot high water tanks, and other smaller structures on the eastern edge of the site to create a transition in scale between the corridor along Whitesell Street and the plant's taller features.
- Planting of street trees and hedges along the edges of the site bordering Whitesell Street and Enterprise Avenue to create visual continuity with the landscape pattern along other streets in the Industrial Corridor, and to screen near views into the site and toward the site's taller elements.
- Placement of bands of trees consisting of informal groupings of fast-growing broadleaf evergreen trees along all sides of the site to provide partial screening of views toward the site from more distant locations. In the areas along Whitesell Street and Enterprise Avenue, this tree row will be located behind the street trees and hedges.

Architectural measures including:

- Placement of architectural screening structures around the cooling tower, and around the complex major equipment that includes the HRSGs and HRSG stacks. These structures will consist of space frames made of tubular steel from which a stainless steel screening mesh will be suspended.
- Project equipment will be painted using a palette of soft grays and blue-grays. The members of the space frame will be painted blue, a color selected to provide a visual contrast with the muted tones of the project equipment and to blend well with the hill backdrop. The stainless steel screening mesh will have a brushed finish to minimize its reflectivity.

Additional measures will include the following:

- Color treatment of fences to blend with the surrounding environment.
- Minimal signage and construction of project signs using non-glare materials and unobtrusive colors. The design of any signs required by safety regulations will need to conform to the criteria established by those regulations.
- Minimization of lighting to areas required for safety, security, or operations, and shielding of lighting from public view to the extent possible. Timers and sensors will be used to minimize the time that lights are on in areas where lighting is not normally needed for safety, security, or operation.
- Direction and shielding of lighting to reduce light scatter and glare. Highly directional light fixtures will be used.

#### **8.13.4.2 Switchyard and Transmission Line**

The following mitigation measures for the RCEC switchyard and transmission line have been included in the project design:

- The switching station will make use of low profile equipment to minimize its visibility beyond the surrounding landscape hedge and tree rows.
- The equipment in the switchyard will have a neutral gray finish.
- The transmission line structures will accommodate both the existing and new transmission lines, avoiding the need to add a new, parallel set of transmission towers to the transmission corridor.
- The towers will be constructed of tubular steel to create a trim profile.
- The towers will be treated with a galvanized neutral gray finish to maximize their visual integration into the backdrop.
- Non-specular conductors will be used.
- Insulators will be non-reflective and non-refractive.

#### 8.13.4.3 Pipelines

The following mitigation measures have been included as a part of the project proposal to reduce the visual impacts of the pipelines:

- After construction, ground surfaces will be restored to their original condition, and any vegetation or paving that had been removed during the construction process will be replaced.

#### 8.13.5 Laws, Ordinances, Regulations, And Standards

This section describes the laws, ordinances, regulations, or standards relevant to the visual resource issues associated with the RCEC project (Table 8.13-3). 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 germane to the project are addressed in the Hayward General Policies Plan and the Hayward Zoning Ordinance.

**Table 8.13-3.** Laws, ordinances, regulations, and standards applicable to the RCEC visual resources.

Document	Applicability	AFC Section	Agency/Contact
Hayward General Plan	Sets out policies for land use, circulation, community facilities, and environmental resource management for the City. Includes a chapter that specifically addresses urban design issues.	Section 8.13.5.2	Hayward Department of Community and Economic Development Gary Calame Senior Planner 777 B Street Hayward, CA 94541-5007 510.583-4226
Hayward Zoning Ordinance	Establishes classes of zoning districts governing the use of land and placement of buildings and improvements. Includes setback and landscaping requirements.	8.13.5.3	Hayward Department of Community and Economic Development Crescentia Browning 777 B Street Hayward, CA 94541-5007 510.583-238-6190

As indicated in the land use analysis (Section 8.6) of this AFC, the RCEC site, the associate linears, are all located within the boundaries of the City of Hayward and are thus subject to Hayward’s planning and zoning requirements.

**8.13.5.1 Hayward General Plan**

The portion of the Hayward General Plan that specifically addresses visual resource issues is the chapter on Urban Design. This chapter identifies and discusses unique natural resources in the city and other urban design features that are worthy of special consideration. General Plan Map 18 provides a graphic identification of the city’s key urban form elements. The mapped form element of most relevance to the project is the Industrial Corridor, which includes all of the industrially zoned lands that lie in the corridor along the eastern edge of the city’s baylands. The proposed project is included within this area. The urban design chapter does not include a specific discussion of the Industrial Corridor, and the urban design policies that follow this chapter do not specifically address design issues in industrial areas. The Urban Design chapter designates the area at the eastern foot of the Hayward-San Mateo Bridge as a community “gateway” and suggests installing windmills in this area to create a memorable entrance to the city. The discussion of gateways does not include mention of policies to protect the viewsheds visible from gateway areas.

**8.13.5.2 Hayward Zoning Ordinance**

The RCEC site lies within an area designated by the Hayward Zoning Ordinance as I, Industrial. This district has been established to “provide for and encourage the development of industrial uses in areas suitable for same, and to promote a desirable and attractive working environment with a minimum of detriment to surrounding properties. The district specifies an extensive list of permitted uses and includes provisions for conditional approval of uses not specifically enumerated. The provisions of the ordinance relevant to the visual resource issues associated with the project are summarized in Table 8.13-4 and a description is provided of the project’s conformance with them.

**Table 8.13-4. Consistency with the Hayward Zoning Ordinance.**

<b>Provision</b>	<b>Consistency</b>
<b>10-1.1630 Yard Requirments</b>	
The requirements for setbacks from streets vary from 10 to 20 feet, for side yards from 0 to 10 feet, and for rear yards there is no minimum requirement.	Since the proposed project will be located within a large parcel, and because the project’s northern and eastern fence lines will be set back a minimum of 20 feet from the streets on which the parcel fronts, the project is consistent with yard requirements.
<b>10-1.1635 Height Limit</b>	
For industrial buildings, there is no maximum height limit.	Since there is no height limit, the project will be consistent with structure and stack heights.

Provision	Consistency
<p><b>10-1.1645 Minimum Design and Performance Standards</b></p> <p><i>Architectural Design Principles</i> A set of detailed design principles include use architectural elements that are harmonious and in proportion with each other, use of attractive colors and materials, and architectural detailing on blank walls.</p> <p><i>Landscaping</i> The ordinance requires landscaping in all required front, side, and rear yards and planting of street trees along all street frontages.</p>	<p>The architectural screening structures that will be built around the cooling tower and the HRSGs and HRSG stacks, and the careful architectural treatment that will be given to the one-story buildings fronting on Whitesell Street will assure that the project will be in conformance with these guidelines.</p> <p>The landscaping planned for the entire perimeter of the project site will exceed the requirements of this standard.</p>
<p>Source: Hayward Zoning Ordinance September 1999</p>	

### 8.13.5.3 Scenic Route Element of the Alameda County General Plan

In 1966, Alameda County adopted a Scenic Route Element as a part of the County's General Plan. In that element, the county designated State Route 92 through Hayward (referred to in the plan as the "Jackson Freeway") as a scenic freeway/expressway. Since this highway and all the land around it falls within the City of Hayward, the county has no jurisdiction in this area, so the provisions of this plan have no legal force in this area. Even if this area were unincorporated and under County jurisdiction, the Scenic Route Element would have limited applicability because in industrial areas, the scenic corridor within which the element's policies apply is defined as 500 feet, while the RCEC lies 1,800 feet to the north of State Route 92.

### 8.13.6 Permits Required and Permit Schedule

No visual resource permits are required.

### 8.13.7 References

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- Taylor, Mark. 2001. Personal conversation with Thomas Priestley (Harza Engineering) and Mark Taylor (Hayward Regional Shoreline Park Supervisor), May 7, 2001.
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Figure 8.13-1a

Project Visibility

RUSSELL CITY ENERGY CENTER

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Visibility

-  Generally visible
-  Intermittently visible

2000 Feet

2000



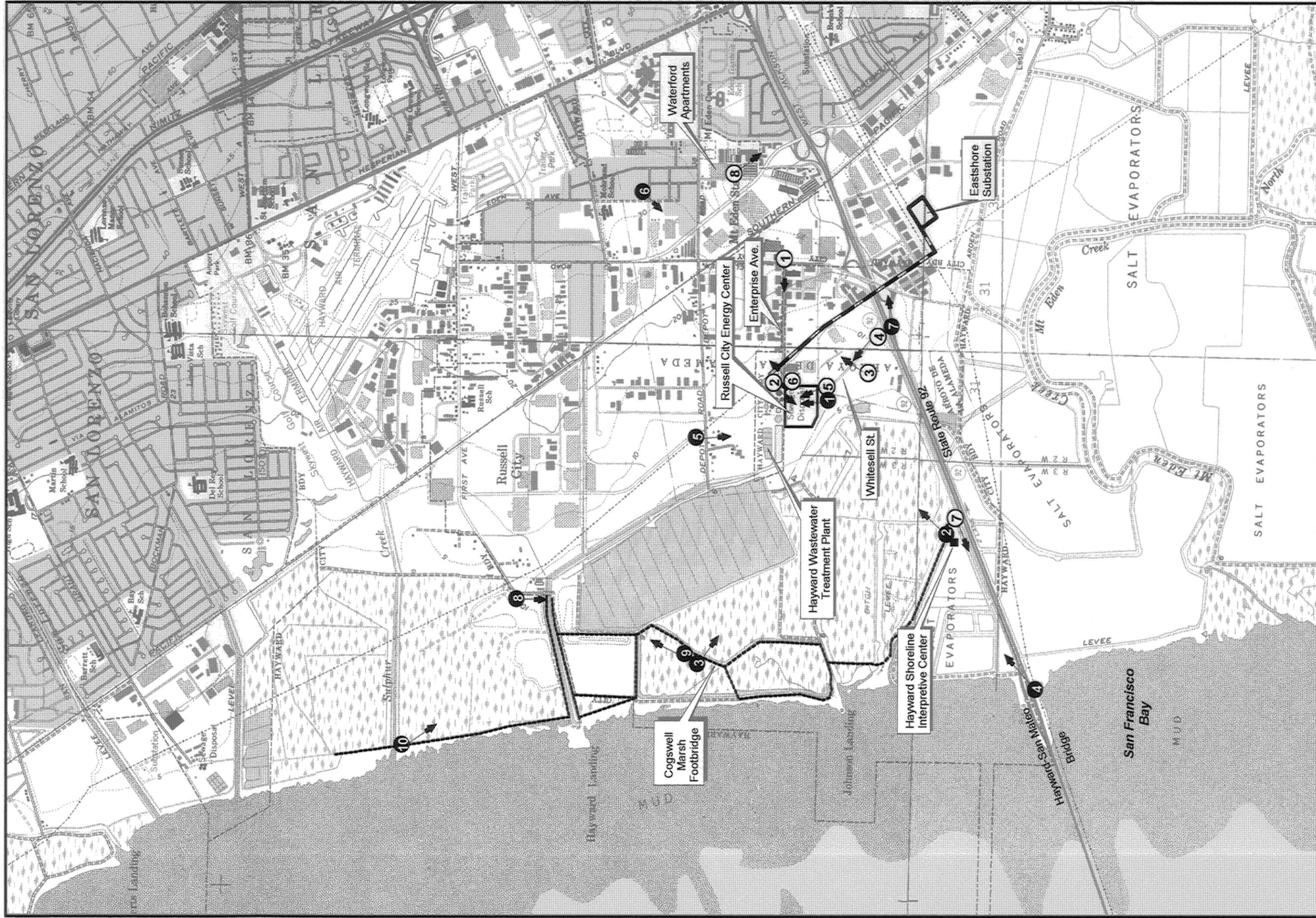


Figure 8.13-1b  
 Key Observation Points and Photo Viewpoints  
 RUSSELL CITY ENERGY CENTER

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Viewpoints

- Key Observation Points (KOP)
- Photo View Points
- ~ Hayward Shoreline Pedestrian and Bicycle Trails
- ⚡ Proposed Transmission Line

0 2000 Feet

N



1. View west down Enterprise Avenue from Clawiter Road.



2. View of project site and existing radio broadcast towers seen from Enterprise Avenue at Whitesell Street.

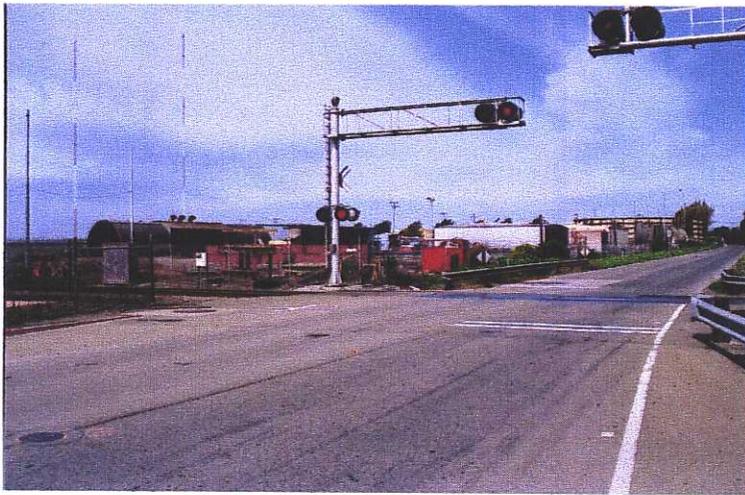


3. Rohm and Haas facility and its 180-foot high stack.



4. View toward site and its radio broadcast towers from Whitesell Street near Breakwater Avenue.

**Figure 8.13-2a.** Visual character photographs.



5. View of project site seen from southeast corner along Whitesell Street.



6. View of Grant-Eastshore transmission line in area to the northeast of the project site.



7. Hayward Shoreline Interpretive Center.



8. Trees screening view from upper floor units at the Waterford Apartments.

Figure 8.13-2b. Visual character photographs.



**Figure 8.13-3a.** KOP 1—Existing view from office/industrial facility looking north.



**Figure 8.13-3b.** KOP 1—Visual simulation of proposed project (photograph and simulation by Environmental Vision).



**Figure 8.13-4a.** KOP 2—Existing view from Hayward Shoreline Interpretive Center looking northeast.



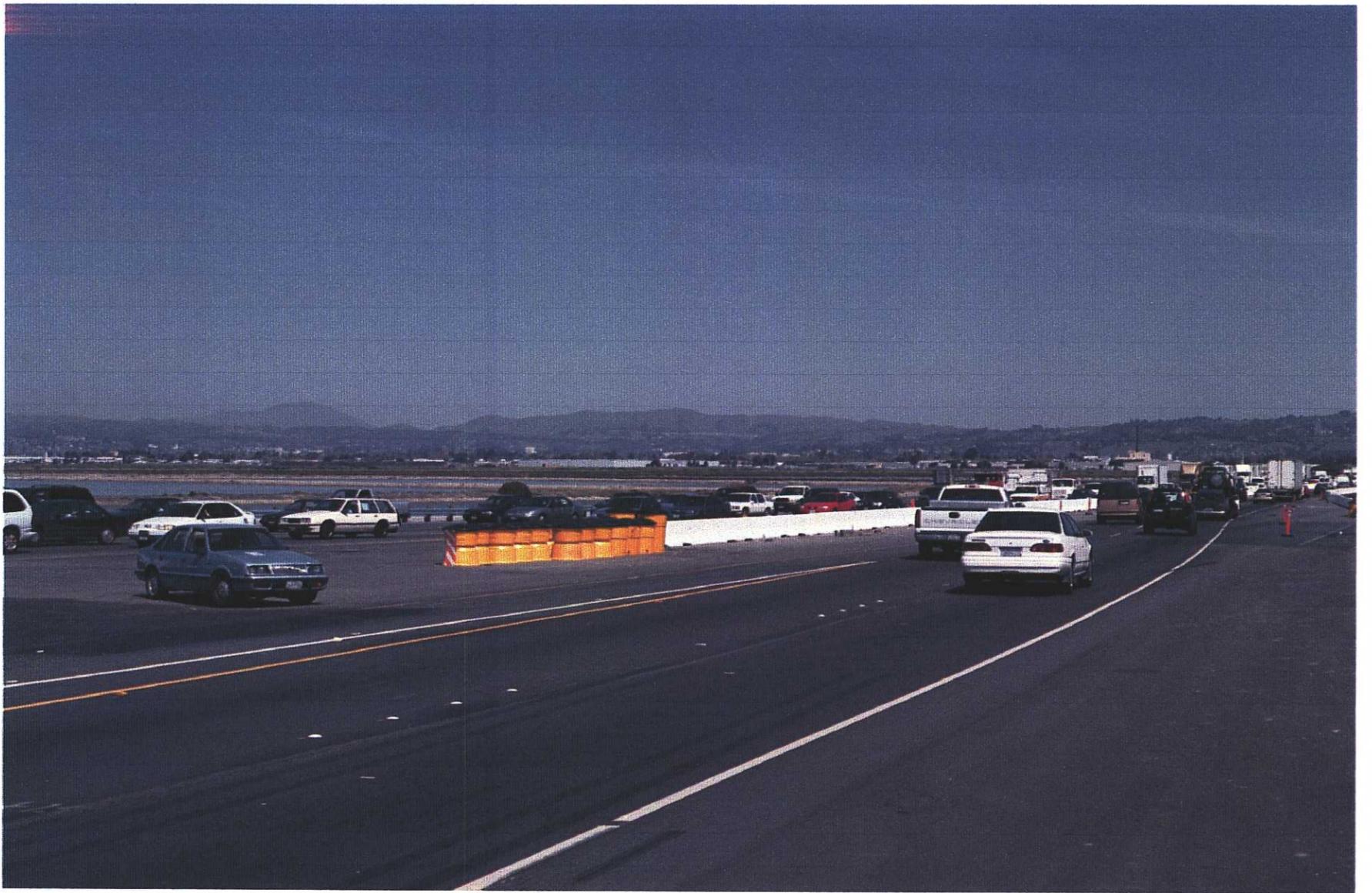
**Figure 8.13-4b.** KOP 2—Visual simulation of proposed project (photograph and simulation by Environmental Vision).



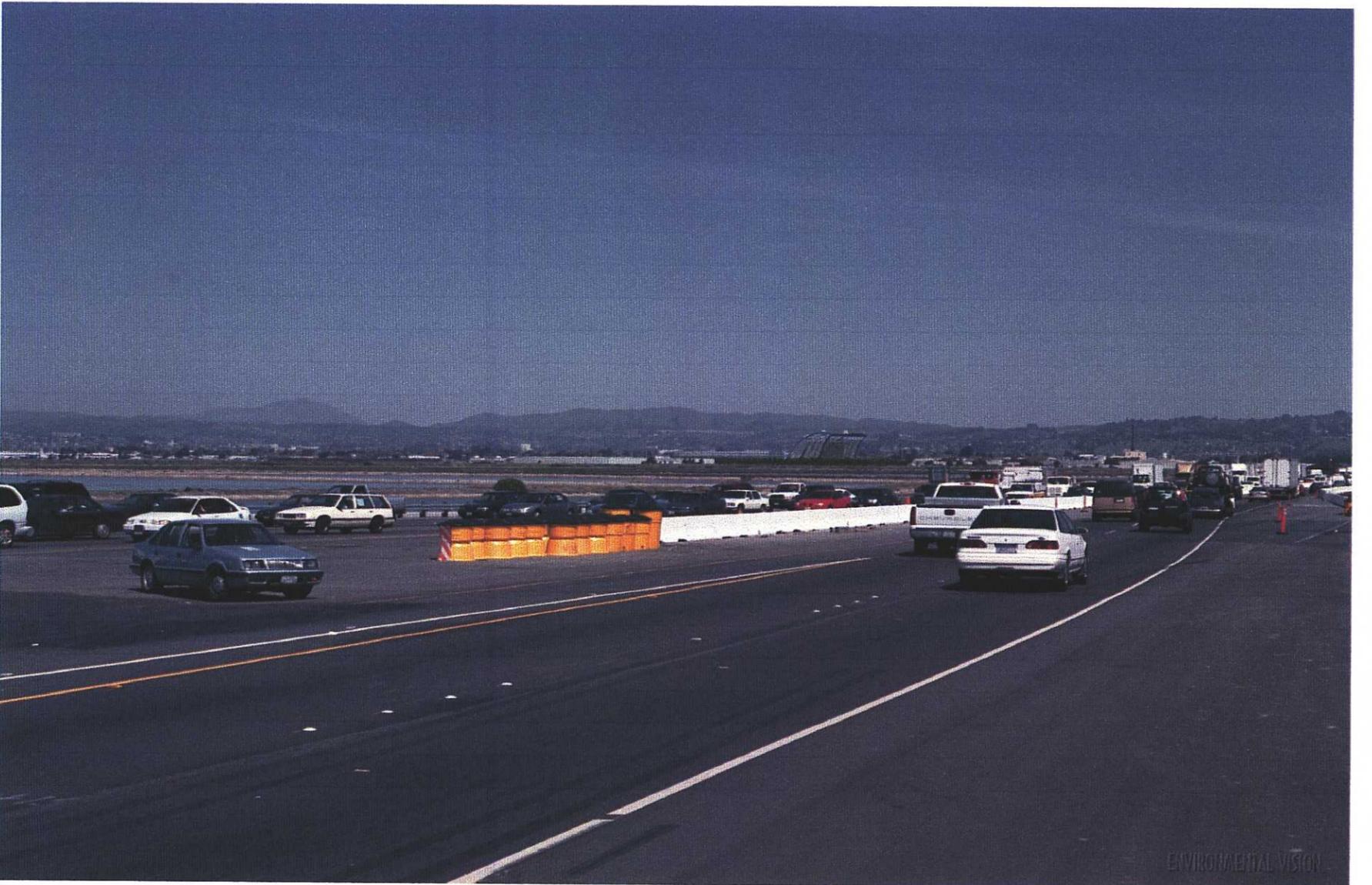
**Figure 8.13-5a.** KOP 3—Existing view from Hayward Shoreline footbridge at Cogswell Marsh looking southeast.



**Figure 8.13-5b.** KOP 3—Visual simulation of proposed project (photograph and simulation by Environmental Vision).



**Figure 8.13-6a.** KOP 4—Existing view from Hayward-San Mateo Bridge Toll Plaza looking east.



**Figure 8.13-6b.** KOP 4—Visual simulation of proposed project (photograph and simulation by Environmental Vision).



**Figure 8.13-7a.** KOP 5—Existing view from Cabot Boulevard and Depot Road.

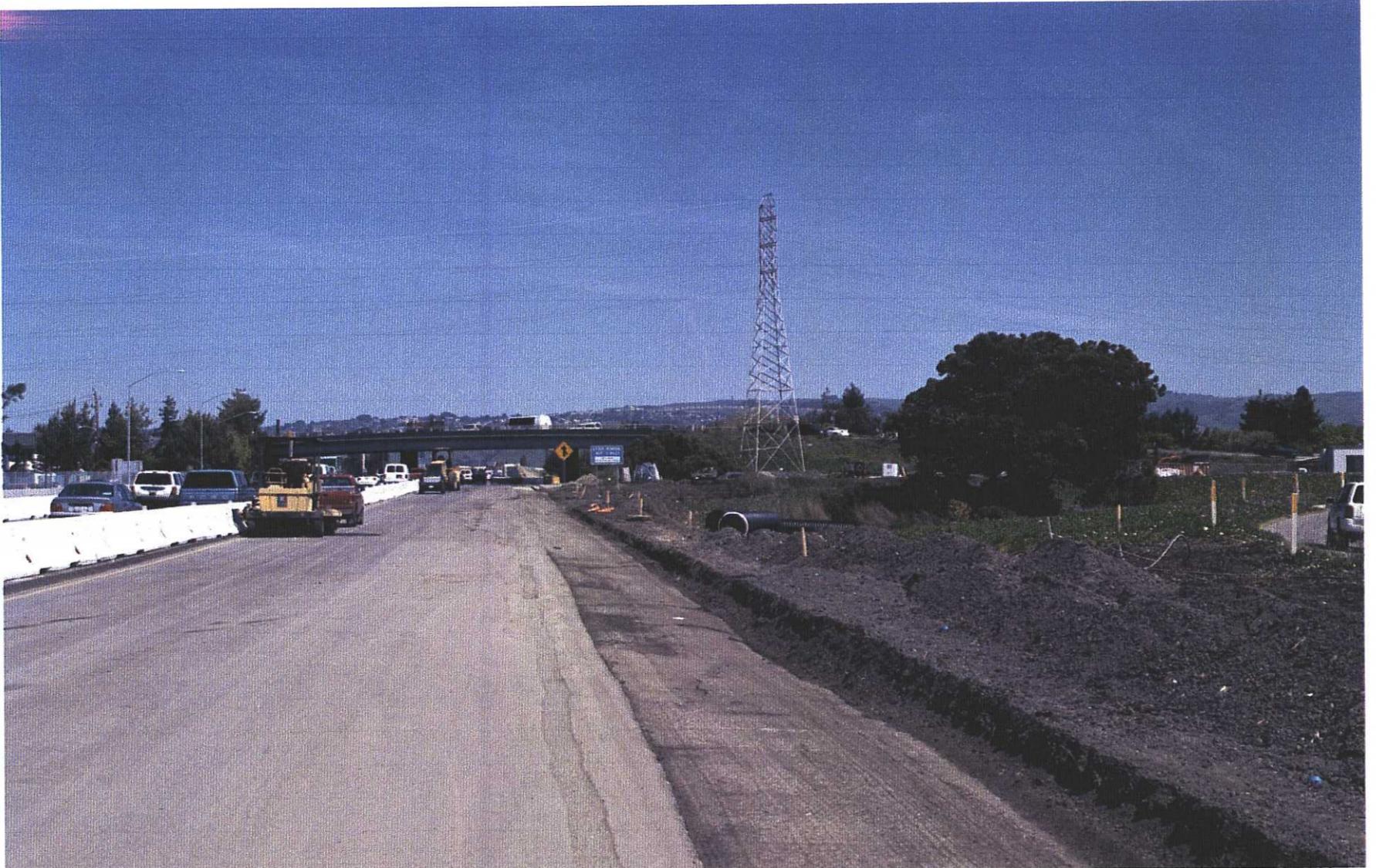


**Figure 8.13-7b.** KOP 5—Visual simulation of proposed project (photograph and simulation by Environmental Vision).

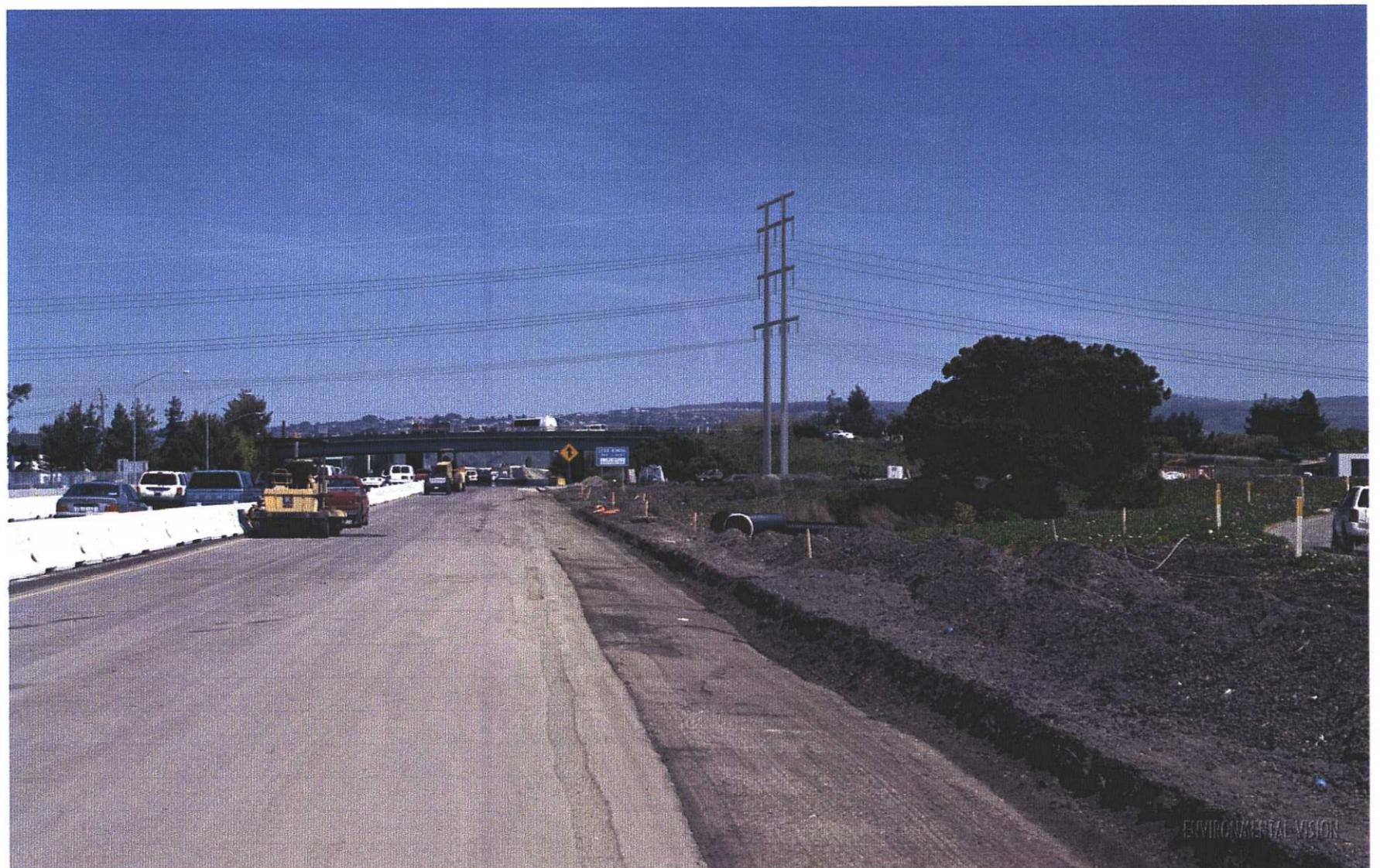


**Figure 8.13-8a.** KOP 6—Existing view from Laguna Drive looking southwest (photograph by Environmental Vision).

Note: Project will not be visible from this location and thus no simulation is provided.



**Figure 8.13-9a.** KOP 7—Existing view from State Route 92 at Clawiter Road looking east.



**Figure 8.13-9b.** KOP 7—Visual simulation of proposed project (photograph and simulation by Environmental Vision).

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Source: The Hillier Group

Figure 8.13-13

Proposed Architectural Treatment  
RUSSELL CITY ENERGY CENTER



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