8.11 Visual Resources

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 resources or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which the project would change the perceived visual quality of the environment in which it would be located.

This section was prepared following the California Energy Commission (CEC) guidelines for preparing visual impact assessments for Applications for Certification (AFCs). Subsection 8.11.1 documents the visual conditions that currently exist in the project area. Subsection 8.11.2 discusses the potential environmental effects of the project as they relate to visual resources. Subsection 8.11.3 discusses the potential cumulative impacts of this and other projects in the area. Subsection 8.11.4 summarizes the mitigation measures proposed to reduce project impacts on visual resources. Subsection 8.11.5 describes the applicable laws, ordinances, regulations, and standards applicable to the project. Subsection 8.11.6 lists the references used in preparation of this section.

Figure 8.11-1 shows an aerial view of the project site and the location of character photos. Figure 8.11-2 shows the project viewshed and location of the project's Key Observation Point (KOP). The character photos and existing and simulated views from the KOP follow as Figures 8.11-3 through 8.11-5. Figure 8.11-6 depicts a preliminary landscaping plan proposed for the project. All figures for this section are located at the end of the section.

8.11.1 Affected Environment

8.11.1.1 Regional Setting

The proposed power plant site is located in the City of Grand Terrace, in southern San Bernardino County (Figure 1.1-1). The community of Highgrove, in Riverside County, lies to the south of Grand Terrace, while the City of Colton borders Grand Terrace on the west, and to the north.

The City of Grand Terrace is located in the flat lands of the San Bernardino Valley, and extends onto the slopes of Blue Mountain on the east and the La Loma hills on the west. The community's western edge is bisected by Interstate 215, which travels through the valley in a north-south direction. The western edge of Grand Terrace is also crossed by two major north-south rail corridors. Although some large areas of open agricultural lands and hillside grasslands remain, much of Grand Terrace has been built out with a low density pattern of urbanization. In the corridor along the freeway and railroad lines in the western side of the city, industrial and warehouse uses predominate, creating a zone in which there are industrial-appearing structures; many large, boxy warehouse buildings; and large paved areas in which trucks and containers are a prominent part of the view. The portions of the community to the west and east of this corridor are characterized by neighborhoods of primarily single-family homes. From many of these neighborhoods, there are scenic views of nearby hills and the valley to the north of the city as well as more distant mountain ridges.

8.11.1.2 Project Site and Vicinity

The proposed generating facility is located at 12700 Taylor Street, north of the intersection of Taylor and Main streets. The 17.3-acre Project Site is made up of two parcels, a parcel containing the former Highgrove Generating Station (the "Generating Station Property") previously owned by Southern California Edison (SCE) and now owned by AES Highgrove. LLC, and an adjacent city-owned parcel formerly occupied by a tank farm (the "Tank Farm Property") associated with the power plant when owned by SCE.

8.11.1.3 Generating Station Property

Prominent features on the Generating Station Property include several large structures associated with the former gas- and oil-fired units, four large stacks, multi-level boiler structures consisting of structural steel platforms and steam piping, four large cooling towers, storage tanks and associated equipment. One of the noticeable features of the Generating Station Property is that many of the large structures are in close proximity to Taylor Street. The structures on the property extend approximately 950 feet along the frontage of Taylor Street.

The 50-year-old Generating Station can be characterized as an aging power plant with a strong, industrial appearance. Unlike modern power plants, the Generating Station has minimal screening, and was not built with uniform paint treatment of surfaces. The predominant features are four large boiler structures, approximately 4 stories tall, with scaffolding and interconnecting piping between stories and four large cooling towers. Two of the four exhaust stacks are approximately 80 feet tall. Much of the generating station equipment has been constructed with minimal setback from Taylor Street. These features can be seen in Figures 8.11-3a and 8.11-3b, photos of the existing view looking into the Generating Station Property from Taylor Road. As a part of the project, the existing structures on the Generating Station Property will be removed.

8.11.1.4 Tank Farm Property

The Tank Farm Property was previously used by SCE to store fuel oil associated with the power plant. Although the tanks have been removed, this portion of the site still retains a recessed bermed area in which the tanks were located. Existing transmission lines and associated pole and tower structures, which are part of the SCE electricity distribution grid and estimated to be over 65 feet tall, border this portion of the site along its northern and western edges. Figures 8.11-4a and 8.11-4b are photos of the view looking northwest across the Tank Farm Property.

8.11.1.5 SCE Substation Property

A 115-kilovolt (kV) substation owned by SCE is located directly west of the Generating Station Property. Once demolition activities on the Generating Station Property are completed, the SCE substation equipment and associated transmission lines, which are an integral part of the electricity supply grid, will be visible from Taylor Street.

8.11.1.6 Project Site

The Applicant proposes to construct the new facility on a parcel comprised primarily of the Tank Farm Property with a portion of the Generating Station Property ("Project Site")

instead of building the facility on the footprint of the existing generating station. This project site was selected such that the major structures could be located to maximize setback from Taylor Street and because the dimensions of the site allow plant frontage along Taylor Street to be minimized. In addition, the plant will be recessed within the depression created by the berms to further lower the plant's elevation and profile.

The transmission lines connecting the new power plant to the SCE substation will be located on property now occupied by equipment that is a part of the existing Generating Station.

The project site is located in an industrially zoned area of the City of Grand Terrace. The area surrounding the proposed site consists of industrial and commercial development, residential areas, and agricultural fields. Industrial uses, including a transmission line corridor, canal, railroad tracks, and an interstate highway are located to the west. The area to the north of the site is currently vacant or used for industrial storage. The area east of the site currently includes open agricultural lands, railroad tracks, a public park and residences. Located to the south are Cage Park Property, a large lumberyard, a former chrome plating facility, and residences. There are no scenic highways in Grand Terrace.

Future development plans are associated with the areas east and north of the site. The agricultural lands and lumber area east of the site is the proposed location of the Colton Joint Unified School District Proposed High School #3, which will consist of a high school and athletic fields. The area to the north of the site is part of the proposed Outdoor Adventures Center Specific Plan, a planned approximately 100-acre commercial development to be developed by the City; the intended use for this parcel is described further in Section 8.4, Land Use.

8.11.1.7 Linear Facilities

The location of the proposed power plant site and the routes of the natural gas supply pipeline and potable water supply line for the proposed project are indicated on Figure 2.1-1.

Potable water will be provided by a short connection to the existing city water main located under Taylor Street in front of the project site. Sanitary sewer service will be provided by connection to a city sanitary sewer line located on Taylor Street in front of the site.

Natural gas will be delivered to the site by means of an approximately 7-mile-long underground pipeline to a main gas line owned by SoCalGas. The proposed gas line from the AES Highgrove Project would exit the west side of the Project Site and follow the Riverside Canal southwest to Main Street. It would turn west on Main Street to Iowa Street and head south on Iowa Street to Martin Luther King Boulevard. It would turn east on Martin Luther King Boulevard to Canyon Crest Drive. On Canyon Crest Drive, the line would head south and end at Via Vista Drive, where it would connect into Line 2001.

Development along Main Street is primarily industrial; Iowa Street has primarily commercial/industrial development with some scattered residential areas. Martin Luther King Boulevard has agricultural development on both sides; Canyon Crest Drive has a mixture of agricultural, commercial, and residential development, and open space.

8.11.1.8 Construction Laydown Area

As shown in Figure 2.2-6, the project construction laydown and parking areas will be within the former plant site, on the Generating Station Property immediately south of the area where the new power plant will be built.

8.11.1.9 Sensitive Viewing Areas and Key Observation Points

As the first step in structuring the analysis of the project's effects on visual resources, a determination was made of the project's viewshed, or the area from which the project would have the potential to be visible. This area is indicated on Figure 8.11-2. Because the viewshed depicted on this figure is based on consideration of topography only, the project's actual visibility is likely to be considerably less because of the screening provided by structures and trees in the foreground of views. Within the area from which the project has the potential to be visible, 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. Representative viewpoints from these sensitive receptor locations are referred to as Key Observation Points (KOPs). Based on consultation with CEC staff, one KOP (KOP-1) was selected for detailed analysis for the proposed project. This KOP was selected based on the sensitivity of the location and proximity of project facilities. The location of this KOP is indicated on Figure 8.11-2.

Based on fieldwork conducted in May 2005, the existing visual conditions of the views from the KOP were documented and evaluated. An assessment of the existing level of scenic quality was made based on professional judgment that took a broad spectrum of factors into consideration, including:

- Natural features, including topography, water courses, rock outcrops, and natural vegetation
- The positive and negative effects of man-made alterations and built structures on visual quality
- Visual composition, including an assessment of the vividness, intactness, and unity of patterns in the landscape[1]

The final scenic quality ratings assigned to each view fit within the rating scale summarized in Table 8.11-1. 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 and the U.S. Department of Transportation.

[1] Vividness is the memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern. Intactness is the integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment. Unity is the degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony of intercompatibility between landscape elements. (US DOT FHWA 1988)

TABLE 8.11-1
Landscape Scenic Quality Scale

Rating	Explanation
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 landscapes have high levels of vividness, unity, and intactness.
Moderately High Visual Quality	Landscapes that 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. Levels of vividness, unity, and intactness are moderate to high.
Moderate Visual Quality	Landscapes, that are common or typical 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. Levels of vividness, unity, and intactness are average.
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 these features do not dominate the landscape. 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 that have below average scenic value. They may contain visually discordant man-made alterations, and often provide little interest in terms of two-dimensional visual attributes of the landscape. Levels of vividness, unity, and intactness are below average.

Note: Rating scale based on Buhyoff et al., 1994; U.S. DOT Federal Highway Administration, 1988, and United States Department of Agriculture Forest Service. 1995.

8.11.1.9.1 KOP-1: Pico Park

KOP-1 is located directly east of the plant site, in the middle of the parking lot for Pico Park, as shown in Figure 8.11-2. Pico Park is the only public park/open space area in the project vicinity. This park is operated by the City of Grand Terrace Department of Parks and Recreation. It is open from 10:00 a.m. to dusk, and facilities include 3 baseball/softball fields, 2 basketball courts, restrooms, 9 picnic tables, a toddler playground, and parking for 90 vehicles. Because there is an open field between Pico Park and the plant site, there would be direct views of the power plant from Pico Park.

The existing view from KOP-1 is shown in Figure 8.11-5a. The major components of this view are the parking lot of Pico Park and the fence delineating the western extent of the park, both in the foreground. A vacant field and row of mature trees highlight the middle-ground, while undeveloped foothills comprise the background. Applying the Buhyoff landscape visual quality scale, the view seen in this photograph would be classified as having a moderate level of visual quality. The level of visual quality is average. The low hills in the background provide a moderate level of vividness, and patterns created by the trees in the view create a moderate level of visual unity. The parking lot, chain link fences and signs detract to some degree from the scene's overall sense of intactness.

The field in the middle-ground of the photograph is part of the area proposed for development of the proposed High School 3. The preliminary site plans for the educational facility show that there may be a number of sports facilities in the future between Pico Park and the plant site, including baseball diamonds, tennis courts and a parking lot (CJUSD, 2005). In addition, the area on the east side of Taylor Street and immediately in front of the row of trees seen in the middle-ground of this view has been designated by the City of Grand Terrace for retail development.

The future view of the power plant from Pico Park may be obscured to some degree by a combination of the sports facilities that will be developed as a part of the educational complex and/or commercial buildings or development that has the potential to be built along the east side of Taylor Street. This KOP was selected to represent both the views from Pico Park and the views from the future sports facilities. The term sensitivity is used to describe the sensitivity of the viewers who may experience the particular view and potential alteration of that view. The degree of sensitivity assumed is related to the activity a viewer is engaged in, the importance of the view to that activity, and the degree of community or cultural significance of the visual resource. Higher sensitivity views include those seen from designated scenic areas or viewpoints, from parks that are intended for appreciation of the landscape, and from residential areas Views from areas devoted to active recreation and from commercial areas are assumed to have a lower level of sensitivity. The lowest levels of visual sensitivity are assumed to be found in areas devoted to warehouses, industry and other utilitarian activities. Because the view from KOP 1 is now seen by users of Pico Park, a highly modified landscape that has been developed primarily with facilities for active recreation, as opposed to landscape appreciation, the sensitivity of this view is assumed to be moderate to moderately high.

8.11.2 Environmental Analysis

8.11.2.1 Analysis Procedure

This analysis of the visual effects of changes that might be brought about by the Highgrove Project is based on field observations and review of the following information: local planning documents, project maps and drawings, photographs of the project area, a computer-generated visual simulation from the KOP, and research on design measures for integrating electric facilities into their environmental settings.

Site reconnaissance was conducted to view the site and surrounding area, to identify potential key observation points, and to take representative photographs of existing visual conditions. A single-lens reflex 35-millimeter (mm) camera with a 50-mm lens (view angle 40 degrees) was used to shoot site photographs.

Page-size photographs are presented to represent the “before” conditions from the KOP. A visual simulation was produced to illustrate the “after” visual conditions from this point, which provides the viewer with a clear image of the location, scale, and visual appearance of the proposed project. For the KOP, an “after” image was prepared. This simulation image represents the project’s appearance in the period immediately after completion of construction and 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.

For each viewpoint, viewer location was digitized from topographic maps and scaled aerial photos, using 5 feet as the assumed eye level. Computer "wire frame" perspective plots were then overlaid on the photographs of the views from the KOP 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.

8.11.2.2 Impact Evaluation 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 Highgrove Project. 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

Significance criteria for impacts to aesthetic resources were developed from California Environmental Quality Act (CEQA) guidelines and the CEQA Checklist to evaluate the potential environmental impacts to the project, the following criteria were applied:

- 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?

8.11.2.3 Project Appearance

8.11.2.3.1 Removal of Existing Power Plant and other Site Improvements

The proposed project includes the removal of the existing Generating Station, located on the Generating Station Property. After plant demolition and site clearing, all of the old power plant structures visible in Figures 8.11-3a and 8.11-3b will have been removed, and most of this site will have the appearance of an open, vacant lot. The remaining view will be of the equipment within the SCE Highgrove Substation and its associated transmission towers.

8.11.2.3.2 Project Structures and Dimensions

The proposed project facilities are described in detail in Section 2.0, Project Description. Figure 2.2-1 shows the general arrangement and layout of the proposed project features on the site, and Figure 2.2-2 provides typical elevation views. Table 8.11-2 summarizes the dimensions of the generating facility's major features.

TABLE 8.11-2
Approximate Dimensions of the Major Project Features

Feature	Height (feet)	Length (feet)	Width (feet)	Diameter (feet)
Air filters	39	29.5	11	
Air ducts	39	37	22	
Main units	15	60	15	
Intercoolers	14	39	11	
VBV stacks	54	-	-	12
Water skids	12	40	12	
Ventilator exhausts	40	13	11	
Generators	30	28	13	
Selective Catalytic Reduction (SCR) Housing	37		33	
Exhaust stacks	80	-	-	13.5
Power control modules	10	50	15	
Cooling towers (each 2-cell tower)	30		22	28
Raw water tank	32	-	-	44
Demineralized water tank	24			27
Control/shop/water treatment/administration building	24	240	65	
Gas compressor building	10	55	30	
Transmission towers	100			5

The exteriors of all major project equipment will be treated with a neutral gray finish intended to optimize its visual integration with the surrounding environment. The project site will be surrounded by an 8-foot-high chain link security fence on the north, west, and south sides. To reduce visual impacts, an 8-foot-high screening wall (which will be

constructed in accordance with City guidance) will be constructed on the top of a berm (approximately 4 to 8 feet high) on the east side of the site, and a 30-foot-wide strip between the screening wall and the edge of the widened Taylor Street right-of-way will be devoted to landscaping. On the northern side of the site along the newly-constructed Adventure Way, there will be a short segment of berm with a screening wall on the top, as well as a wide strip to the west of the berm that will be available for screening landscaping.

8.11.2.3.3 Transmission Line

Power generated by the Highgrove Project will be connected via overhead cables to SCE's 115-kV substation, which is located immediately south of the project site, adjacent to the existing power plant.

8.11.2.3.4 Pipelines

The project will use an onsite well for the power plant process water supply. Potable water for drinking and sanitary uses will be provided by the Riverside Highland Water Company from a water main in adjacent Taylor Street. Similarly, sanitary wastewater disposal will be to the City's sanitary sewer. The natural gas line will be buried and will thus not be visible. Construction of the gas line will require excavation along the 7-mile route between the Highgrove Project site and SoCalGas' Line 2001. During construction of the pipeline, the ground surface of the areas in the alignment will be temporarily disrupted by the presence of construction equipment, excavated piles of dirt, concrete, pavement, and construction personnel and vehicles. These effects will be minor and temporary. After construction, the ground surfaces will be restored and the pipelines will not create a long-term change to the visual environment.

8.11.2.3.5 Construction Laydown Area

As detailed in Section 2.2.15, construction of the project is to take place between the second quarters of 2007 and 2008. Construction laydown and parking areas will be within the former plant site, south of the construction area. During this time, construction materials, construction equipment, trucks, and parked vehicles will be visible on the site.

8.11.2.3.6 Landscaping

The facility would be landscaped on the eastern side of the site, between the screening wall and Taylor Street, and on the northern side, on the berm that extends along a portion of the site's boundary. Figure 8.11-6 shows the preliminary landscaping plan that has been proposed as a part of the project's development. This preliminary landscape plan was designed to be consistent with the landscape concept specified in the Outdoor Adventures Center Specific Plan, which will apply to the area to the immediate north and east of the project site. The preliminary landscape plan calls for planting of redwood trees in overlapping rows to create a screen for views of the power plant's facilities from nearby areas and western redbud trees in the street right-of-way. Redwoods were selected because they are specified for use in the Outdoor Adventures Center Specific Plan and because of their rapid growth and high density features. Redbuds were selected because they are also specified for use in the Specific Plan and will provide blossom and foliage interest. Both the redwoods and redbuds will tie in visually within the landscape theme of the surrounding Outdoor Adventures Center.

8.11.2.3.7 Lighting

Although the proposed power plant is a simple-cycle unit designed to supply power during times of peak demand, which are most likely to occur during the daytime. The plant will require onsite nighttime lighting for safety and security. To reduce offsite lighting impacts, lighting at the facility will be restricted to areas required for safety, security, and operation. Exterior lights will be hooded, and lights will be directed onsite so that significant light or glare would be minimized. Low-pressure sodium lamps and fixtures of a non-glare type will be specified. For areas where lighting is not required for normal operation, safety, or security, switched lighting circuits will be provided, thus allowing these areas to remain unilluminated (dark) at most times, minimizing the amount of lighting potentially visible offsite.

During some construction periods and during the startup phase of the project, some activities may occur 24 hours a day, 7 days a week. If there are periods when nighttime construction activities take place, illumination that meets state, and federal worker safety regulations will be used. 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.

8.11.2.3.8 Water Vapor Plumes

Operation of the proposed power plant will result in release of moist air from the exhaust stacks and from the cooling towers that has the potential, at times when the air in the atmosphere is cold and damp, to create visible water vapor plumes.

8.11.2.4 Assessment of Visual Effects

8.11.2.4.1 Removal of Existing Generating Station

As described previously, the existing Generating Station has a neglected and run-down appearance (Figures 8.11-3a and 8.11-3b). The removal of the Generating Station will improve the visual character of the site as viewed from surrounding areas. Views closest to the Generating Station will be the most improved, particularly those from Taylor Street, the proposed high school, and the residences located on the south side of Main Street. Views from Pico Park and more distant residences will also be improved.

8.11.2.4.2 KOP-1: Pico Park

Figure 8.11-5b is a simulated view of the Highgrove Project generating facility as it would appear from KOP-1 five years after construction of the project. In the simulated view, the rows of trees that currently exist on the east side of the Tank Farm Property have been removed. The Outdoor Adventures Center Specific Plan, a future development proposed by the City of Grand Terrace, includes a widening and extension of Taylor Street northward to connect with future streets associated with that development. The existing trees are located on property currently owned by the City and may be removed as part of the Taylor Street widening project. To be conservative, the visual simulation has assumed the trees have been removed by the City and will not be available to serve as an additional visual screen.

As described above, a preliminary landscape plan has been prepared that incorporates redwood trees located on a new elevated berm along Taylor Street and redbud trees in the street right-of-way, as shown in Figure 8.11-6. Within 5 years of their installation, the

redwood trees will provide substantial screening of the project's equipment and together with the redbud trees will be harmonious with the landscaping associated with the future development proposed for the area surrounding the power plant. The simulated view incorporates the berm, redwood trees, and redbud trees.

To determine whether the project has a significant impact on visual resources, an assessment of the effects on visual quality was performed based on vividness, intactness, and visual character.

- **Vividness and Visual Intactness and Unity**—The level of vividness will remain the same, but the presence of the stacks will reduce the level of visual intactness to some to some extent, although this reduction will not be substantial. Because the proposed berm and landscaping will screen the plant's lower elements, and because the project features that will be visible will have an orderly appearance, the change in the scene's overall level of visual unity will be relatively small.
- **Visual Character**—With development of the project, the stacks and small portions of the air intake filters would be visible above the proposed landscaping. The presence of these features will change the visual character of the view from KOP-1 to some extent, adding stacks to a view where they do not now exist, making the view somewhat more industrial in character. However because the stacks would appear to be substantially lower in height than the hills in the backdrop and would, to some degree, be visually absorbed by them, they would not dominate the view. An additional factor to consider in evaluating the project's impacts on this view is that development of the sports fields in the area to the immediate west of the park and of a retail facility on the parcel that borders the eastern side of Taylor Street have the potential to give the middle-ground of this view a more highly developed character, and to partially block the view toward the project.

8.11.2.4.3 Light and Glare

The project's effects on visual conditions during hours of darkness will be limited. As indicated previously, 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 visibility and potential glare of the lighting 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 implementation of the project, the overall change in ambient lighting conditions at the project site, as viewed from nearby locations would not be substantial. Additionally, lighting required for the developments proposed to be constructed adjacent to the proposed project (Colton Joint Unified School District High School 3 and the Outdoor Adventures Center) would likely be significant and include 24-hour security lighting in addition to full visibility lighting during dark evening hours. This additional lighting surrounding the proposed project would likely be substantially greater than the safety and security lighting required for the proposed project.

Lighting that may be required 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.

8.11.2.4.4 Water Vapor Plumes

When the proposed power plant will be operating at times of low temperature and high humidity, the potential exists for the exhaust from the combustion turbine stacks and the cooling towers to condense and form visible water vapor plumes. However, experience with simple-cycle power plants of this type has demonstrated that the high velocity and temperature of the combustion turbine stack exhaust result in a quick dispersion of stack plumes, minimizing the probability that a visible plume would be created above the stacks. The cooling towers that are a part of this plant are small, and emit a relatively limited amount of moisture, reducing the potential for plume formation.

Based on previous experience with systems of this kind, 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.

The Highgrove Project will be designed as a peaking facility to serve load during periods of high demand and it is expected that it will operate at a 15 to 30 percent annual capacity factor. It is anticipated that much of the time that the plant operates will be during the summer, during hours when temperatures and thus electric loads are high. Because formation of visible plumes only takes place at times when ambient temperatures are low, there is little potential for plume formation during the high temperature periods when the plant is most likely to be in operation. In its evaluation of the Roseville Energy Project (03-AFC-01), the standard that CEC Staff applied in evaluating the visual impacts of visible water vapor plumes was that plume impacts are significant if plumes occur more than 20 percent of winter seasonal (October through March) daylight no rain/fog high visual contrast (i.e., clear) hours.[2] Given the plant's expected operational regime that will emphasize peaking power during high demand times in the summer, it is unlikely that the plant would be operated more than 20 percent of the non-rain, non-fog, clear daylight hours during the period from October through March, and that as a consequence it is very unlikely that visible water vapor plumes would be present during more than 20 percent of these hours.

8.11.2.4.5 Construction Period Impacts

During construction, construction materials, construction equipment, trucks, and parked vehicles may be visible on the project site. Construction activities would be conducted in a manner that would reduce dust from leaving the project site. The construction activities on the project site and the activities in the laydown areas would not contrast in a significant way with the existing industrial character of the area. During the construction period, the boundaries of the project site and laydown areas that border Taylor Street will be screened using chain link fencing covered with a screening fabric or Privamax. During construction of the pipeline, the ground surface of the areas in the alignment will be temporarily disrupted by the presence of construction equipment, excavated piles of dirt, concrete, and pavement, and construction personnel and vehicles. Any visual changes associated with construction period activities would be minor and temporary, and thus not significant.

[2] California Energy Commission. 2004. Final Staff Assessment for the Roseville SVEP. p. 4.12-13

8.11.2.5 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 has been structured by applying 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:

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

   No. There are no vista points or roads that have a currently adopted scenic designation located in the nearby project vicinity.

2. **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 project because none of the project facilities fall within the boundaries of a state scenic highway.

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

   No. The site of the new facility is primarily a vacant parcel in an industrially zoned area with no resources of scenic significance that would be affected by the project.

   The project involves demolition of an existing aging power plant and construction of a new generating facility on an adjacent parcel. The removal of the deteriorating Highgrove Generating Station will substantially improve views toward the project site by replacing older equipment with a modern facility that incorporates screening, more compact generating technology, and more uniform and harmonious exterior design surface treatments.

   The berm, screening wall, and landscaping proposed for the eastern side of the site and future development in the area between Pico Park and the power plant will result in substantial screening of the view of the power plant from Pico Park. However, the stacks will be visible from Pico Park (KOP-1), adding stacks into a view where they do not now exist. This change will cause some diminishment of the quality of the view seen from Pico Park, and will change the view's character to a moderate degree. However, these changes will not represent a substantial degradation of the character and quality of this view and will, therefore, not be significant. As indicated in the analysis above, given the plant's expected operational regime, it is highly unlikely that the plant would operate more than 20 percent of the non-rain, non-fog, clear daylight hours during the wintertime period from October through March and that, as a consequence, it is very unlikely that visible steam plumes would be present during more than 20 percent of these hours, staying below the threshold the CEC has established for significant impacts related to the presence of water vapor plumes.

4. 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 above, project light fixtures will be restricted to areas required for safety, security, and operations. Lighting will be directed onsite; it 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 will substantially reduce the offsite visibility of project lighting.

Any lighting that will be installed to facilitate nighttime construction activities will, 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 will be used to the extent practical while complying with worker safety regulations. With these measures, lighting associated with the project construction and operation will not pose a hazard or adversely affect day or nighttime views toward the site.

8.11.3 Cumulative Impacts

The CEQA Guidelines (Section 15355) define cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."

The CEQA Guidelines further note that:

> The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant, projects taking place over a period of time.

As indicated in the Land Use analysis (Section 8.4), the proposed project is consistent with the goals, objectives, and policies in industrial developments for the City of Grand Terrace. The proposed project is one of several proposed development plans occurring in the project vicinity over the next several years, including the proposed Colton Joint Unified School District High School #3, and City of Grand Terrace's commercial and retail development (Outdoor Adventures Center). Although the proposed project in combination with the other planned land uses will change the overall appearance of this area, these changes will not adversely affect identified scenic resources or protected scenic corridors and are not anticipated to degrade the area's current level of visual quality.

8.11.4 Mitigation Measures

This analysis has documented the fact that no significant visual impacts will result from implementation of the proposed project. Therefore, no mitigation measures are proposed. Project implementation will be subjected to the City of Grand Terrace's planning regulations. Specifically, a Site Development and Landscaping Plan will be prepared and submitted to the City for review and comment and CEC Compliance Project Manager for review and approval before construction begins. The site plan will comply with all applicable provisions of the Grand Terrace Zoning Ordinance, including provisions related to landscaping and project appearance.

8.11.5 Laws, Ordinances, Regulations, and Standards

8.11.5.1 Introduction

This section describes the Laws, Ordinances, Regulations, and Standards (LORS) relevant to the visual resource issues associated with the Highgrove Project. No federal, state, or regional visual resource LORS exist. However, visual resource and urban design concerns applicable to the project are addressed in the City of Grand Terrace General Plan, the City of Grand Terrace Zoning Ordinance, the Riverside County Comprehensive General Plan, and the Riverside County Zoning Ordinance.

Table 8.11-3 lists the plans and ordinances that are pertinent to the project. The specific provisions of each plan or ordinance that have potential relevance to the project are identified below. The General Plan for Riverside County and the City of Riverside would only apply to the gas pipeline.

TABLE 8.11-3
Laws, Ordinances, Regulations, and Standards Applicable to AES Highgrove Project Visual Resources

LORS	Purpose	AFC Section Explaining Conformance	Agency Contact
City of Grand Terrace General Plan (1988, 2003), and Zoning (2001, 2003)	To guide development in the City of Grand Terrace	8.11.5.2 8.11.5.3	John Lampe Planner City of Grand Terrace 22795 Barton Road Grand Terrace, CA 92313-5295 (909) 430-2225
Riverside County General Plan and Highgrove Area Plan (2003) and Zoning (2005, 2006)	To guide development in Riverside County	8.11.5.4	John Guerin, Senior Planner Riverside County Transportation and Land Management Agency, Planning Department Riverside County Administrative Center 4080 Lemon Street Riverside, CA 92502-1629 (951) 955-1872
City of Riverside General Plan (1994) and Zoning (1994)	To guide development in the City of Riverside	8.11.5.5	Sal Quintanilla Planner City of Riverside Planning Department 3900 Main Street Riverside, CA 92522 (951) 826-5371

8.11.5.2 City of Grand Terrace General Plan

The proposed power plant, potable water line, sewer line, and transmission line are all located within an existing industrial area within the city limits of the City of Grand Terrace, and are, therefore, subject to the provisions of the City of Grand Terrace General Plan. The project site is designated M2 (Industrial) according to the General Plan. The provisions of the City of Grand Terrace's General Plan that are applicable to the project are summarized and evaluated for project conformity in Table 8.11-4.

TABLE 8.11-4
Conformity of Highgrove Project with the City of Grand Terrace General Plan

Provision	Conformity?
Aesthetic, Cultural, and Recreational Resources Element Goal:	
Enrichment of the community by optimizing the availability and usefulness of the City's aesthetic, cultural and recreational resources.	Yes. The proposed power plant is located in an area designated for industrial uses and does not decrease the availability and usefulness of the City's aesthetic resources.
Visual Resources Implementation Policies:	
Scenic resources should be protected from harmful impacts and maintained as community assets. Design of new development shall respect and preserve the view opportunities of existing development in the area.	Yes. No scenic resources would be affected by the proposed project, and development of the proposed power plant would not interfere with view opportunities of existing development in the project vicinity.
Community Development Implementation Policies:	
Enhancement of the City's image shall be undertaken by the establishment of City entrances and development of unified streetscapes. Buffering to prevent potential land use incompatibilities between industrial areas and other areas shall be given special consideration. Specific features could include increased setbacks, walls, berms, and landscaping.	Yes. The proposed power plant would not interfere with the development of streetscapes which will be developed according to the Outdoor Adventures Center Specific Plan which applies to adjacent parcels. Appropriate buffering, consistent with the design standards included in the Outdoor Adventures Center Specific Plan, is included in the proposed power plant design, including setbacks, walls, berms, and landscaping.

8.11.5.3 City of Grand Terrace Zoning Code

The Tank Farm Property and the Generating Station Property are zoned M2 (Industrial) in the City of Grand Terrace Zoning Code. The site development standards of the City of Grand Terrace's M2 zoning that are applicable to the project are summarized and evaluated for project conformity in Table 8.11-6.

TABLE 8.11-6
Conformity of Highgrove Project with the City of Grand Terrace Zoning Code

Provision		Conformity?
M2 (Industrial) Zone Site Development Standards		Yes, with issuance of a variance. The proposed power plant would conform with the site development standards identified. However, the height of several structures onsite, as shown in Table 8.11-2, would exceed 35 feet. The proposed project would be subject to site review by the City of Grand Terrace and would require issuance of a variance for the height of structures over 35 feet.
Lot Area (minimum square feet)	10,000	
Lot Width (minimum linear feet)	70	
Lot Depth (minimum linear feet)	100	
Street Frontage (minimum linear feet)	70	
Setbacks (minimum linear feet)		
Front Yard	15	
Rear Yard	0	
Side Yard	0	
Height (Maximum linear feet)	35	
Lot Coverage (Maximum percent less the required parking, setbacks and landscaping	100	

8.11.5.4 Riverside County General Plan, Highgrove Area Plan, and Zoning

A portion of the natural gas pipeline for the proposed project lies within the County of Riverside and will thus be subject to the provisions of the Riverside County General Plan, Highgrove Area Plan, and Zoning Ordinance. Because the plans and zoning ordinance contain no provisions that specifically pertain to the visual resource issues associated with underground pipelines, the proposed project will not conflict with the plan or ordinance.

8.11.5.5 City of Riverside General Plan and Zoning

A portion of the natural gas pipeline for the proposed project lies within the City of Riverside and will thus be subject to the provisions of the City of Riverside General Plan and Zoning Ordinance. Because the plan and zoning ordinance contain no provisions that specifically pertain to the visual resource issues associated with underground pipelines, the proposed project will not conflict with the plan or ordinance.

8.11.6 References

Buhyoff, G. J., P. A. Miller, J. W. Roach, D. Zhou, and L. G. Fuller. 1994. An AI Methodology for Landscape Visual Assessments. AI Applications. Vol. 8, No. 1., pp. 1-13.

California Energy Commission. 2004. Final Staff Assessment for the Roseville SVEP. p. 4.12-13p.

City of Grand Terrace. 1988. City of Grand Terrace General Plan. Adopted December 8.

City of Grand Terrace. Undated. Grand Terrace Municipal Code – Zoning. Accessed online at http://www.cityofgrandterrace.org/business/zoning_code/zoning_nav.html on April 13, 2006.

City of Grand Terrace. 2004. Outdoor Adventures Center Specific Plan for the City of Grand Terrace. Approved September 9.

Colton Joint Unified School District (CJUSD). 2005. Grand Terrace Educational Facility Environmental Draft Impact Report. September.

Koontz, Gary. Community Development Planner. 2006. City of Grand Terrace. Personal communication with Brenda Eells/CH2M HILL on March 28.

Riverside County. 2005. County of Riverside Zoning. Accessed online at http://www.tlma.co.riverside.ca.us on April 13, 2006.

Riverside County. 2003. County of Riverside General Plan. Accessed online at http://www.rcip.org/generalplan.htm on April 13, 2006.

City of Riverside. 1994. City of Riverside General Plan. Accessed online at http://www.riversideca.gov/planning/genplan1994.htm on April 13, 2006.

City of Riverside. 2005. City of Riverside Zoning Code. Accessed online at http://www.riversideca.gov/municipal_code/pdf/Title_19_3_31_2005.pdf on April 13, 2006.

United States Department of Agriculture. Forest Service. 1995. *Landscape Aesthetics; A Handbook for Scenery Management* (Agriculture Handbook Number 701). Washington, DC: US Department of Agriculture.

United States Department of Transportation Federal Highway Administration (US DOT FHWA). 1988. Visual Impact Assessment for Highway Projects.

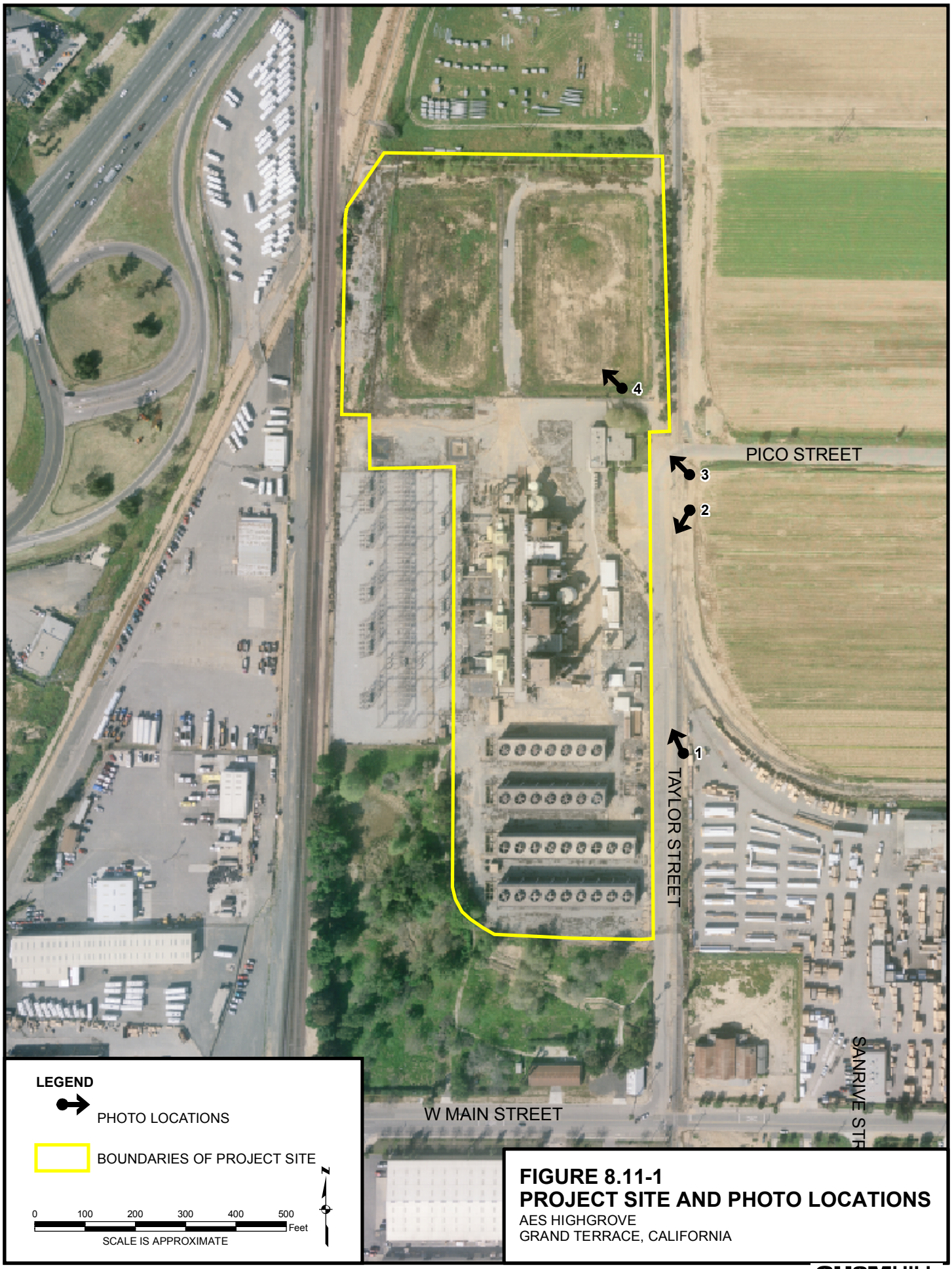


FIGURE 8.11-1
PROJECT SITE AND PHOTO LOCATIONS
AES HIGHGROVE
GRAND TERRACE, CALIFORNIA

RDD \\LOKI\PROJECTS\RDDGIS\AES_HIGHGROVE\MXD\8_11-1.MXD 4/12/2006 16:48:31

CH2MHILL

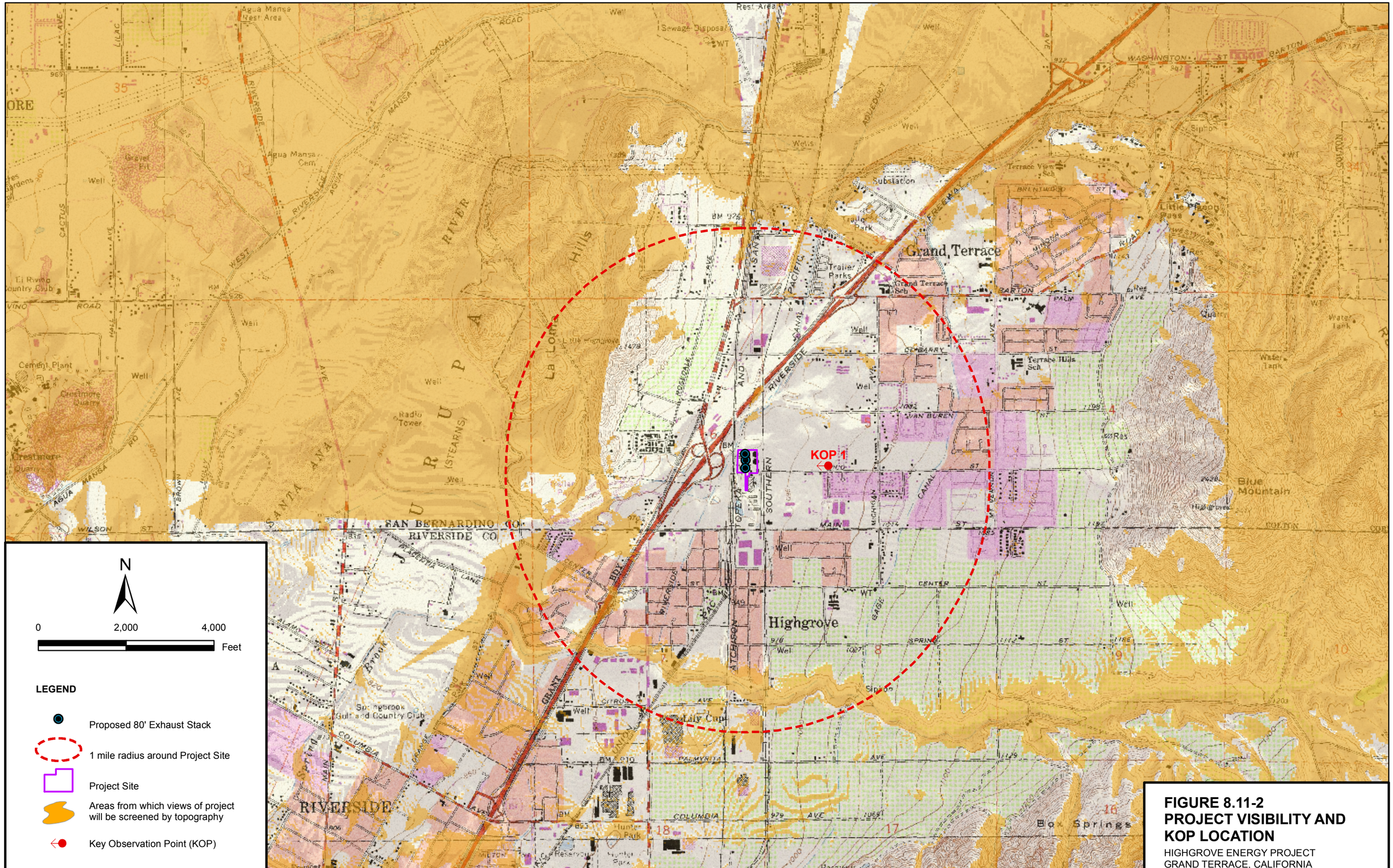


FIGURE 8.11-2
PROJECT VISIBILITY AND KOP LOCATION
HIGHGROVE ENERGY PROJECT
GRAND TERRACE, CALIFORNIA

CH2MHILL

BAO \\ZINFANDEL\GIS\PROJECTS\AES_HIGHGROVE\MXDS\AES_HIGHGROVE.MXD AES_HIGHGROVE.PDF 5/5/2006 15:10:17

8.11-3a. Photo 1. View looking north along Taylor Street. The former Highgrove Generating Station is visible to the left. The site of the proposed project is located in the area to the left of the short, bushy trees visible at the far end of Taylor Street.

8.11-3b. Photo 2. View looking south along Taylor Street toward the former Highgrove Generating Station.

FIGURE 8.11-3
CHARACTER PHOTOS
AES HIGHGROVE
GRAND TERRACE, CALIFORNIA

8.11-4a. Photo 3. View from the corner of Taylor and Pico Streets looking northwest toward the project site, which is located in the area to the immediate left of the row of short trees visible along the railroad tracks.

8.11-4b. Photo 4. View from the southeast corner of the main area of the project site looking northwest across the site. The area in the immediate foreground is the former tank farm site.

FIGURE 8.11-4
CHARACTER PHOTOS
AES HIGHGROVE
GRAND TERRACE, CALIFORNIA

IS032006003RDD_04 (4/6/06)

CH2MHILL

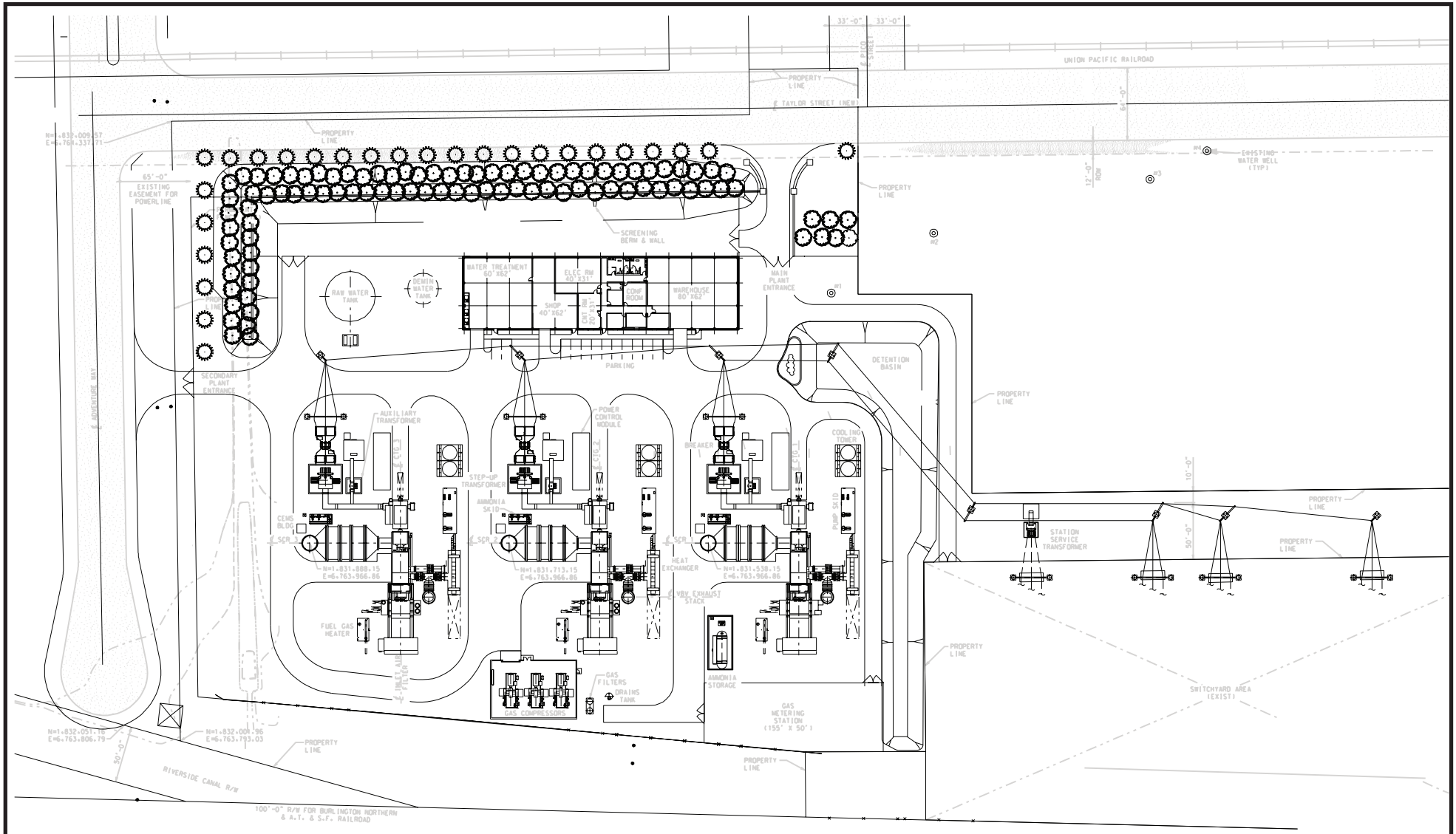
a. KOP 1 - Existing view from Pico Park looking west toward project site

b. KOP 1 - Simulated view from Pico Park looking west toward project in the time period five years after project construction

Figure 8.11-5
KOP 1 - View from Pico Park
AES HIGHGROVE
GRAND TERRACE, CALIFORNIA

IS032006003RDD_15 (5/5/06)

CH2MHILL



N

0 75 150

Approximate Scale In Feet

Proposed redwood trees *(sequoia sempervirens)*

Proposed redbud trees *(cercis occidentalis)*

FIGURE 8.11-6
CONCEPTUAL LANDSCAPE PLAN
AES HIGHGROVE
GRAND TERRACE, CALIFORNIA

CH2MHILL

WB022006009SAC figure_8_11_6a.ai 05-02-06 tdaus