

Visual Simulation Methods

As part of the Jefferson-Martin Transmission Project PEA visual resources analysis, Environmental Vision produced a series of visual simulations to illustrate "before" and "after" visual conditions. The simulations illustrate the location, scale and appearance of the proposed project as seen from 18 representative viewpoints. The simulation locations are summarized in the following table and delineated on Figure 8.2.

Environmental Vision employed computer modeling and rendering techniques to produce the visual simulation images. The computer-generated visual simulations are the results of an objective analytical and computer modeling process described briefly below. The images are accurate within the constraints of available site and project data. A single lens reflex (SLR) 35mm camera with a 50mm lens (view angle of 40 degrees) or wide angle 35mm lens (54-degree view angle) was used to shoot site photographs. Site location data for each photograph was collected using global positioning system (GPS) equipment. Accurate digital location data was later incorporated into 3D digital model.

Existing GIS topographic and site data and digital aerial photographs supplied by PG&E engineers provided the basis for developing an initial digital model. A three-dimensional model of the proposed transmission towers, overhead conductors and substation improvements was also developed using design data supplied by PG&E and Black & Veatch (dates?). The three-dimensional computer model of the proposed transmission facilities, combined with the digital site model, were utilized to produce a complete computer model of the proposed project. A set of computer-generated perspective plots were then produced to represent the selected viewpoints.

For each of the simulation viewpoints, GPS viewer location data was added to the 3-D digital model using 5 feet as the assumed eye level. Computer "wireframe" perspective plots were overlaid on photographs to verify scale and viewpoint location. Digital visual simulation images were then produced based on computer renderings of the 3-D model combined with digital versions of the selected site photographs.

The final "hardcopy" visual simulation images produced for the PEA document were printed from the digital image files and produced as Figures 8.4 through 8.21. Figures 8.7, 8.8, 8.10, 8.12, 8.20 and 8.21 include 35mm lens photos printed at a size 7 inches wide and should be viewed at a distance of approximately 7 inches. The other simulations include 50mm lens photos and should be viewed at a distance of approximately 10 inches.

Summary of Visual Simulation Locations

Figure Number	Location	Viewpoint Number*	Viewing Distance**
8.4	Edgewood County Park	7	Less than ¼ mile
8.5	Cañada Trail near Filoli Estate	15	Less than ¼ mile
8.6	Ralston Trail and Cañada Road south of Highway 92	20	Less than ¼ mile
8.7	Transmission line crossing (near Milepost 1.5) north of Jefferson Substation from southbound Interstate 280	32	Less than ¼ to 1 mile
8.8	Transmission line crossing (near Milepost 5) south of Highway 92 from southbound Interstate 280	33	Less than ¼ to ¼ mile
8.9	Residences on Lexington Avenue near Bunkerhill Road	35	Less than ¼ mile
8.10	Rest Area on east side of Interstate 280 south of Hayne Road	43	Less than ¼ mile
8.11	Residences at Hayne Road and Black Mountain Road	46	Less than ¼ mile
8.12	Residences on Wedgewood Avenue	48	Less than ¼ mile
8.13	Transmission line crossing (near Milepost 9) north of Golf Course Blvd/Hayne exit from northbound Interstate 280	50	Less than ¼ mile
8.14	Crystal Springs Golf Course parking lot	54	Less than ¼ to ½ mile
8.15	Crystal Springs Golf Course fairway and last hole	56	Less than ¼ to ½ mile
8.16	Sawyer Camp Trail	59	¼ to ¾ mile
8.17	San Andreas Trail	61	Less than ¼ mile
8.18	Skyline Boulevard south of San Bruno Avenue	64	Less than ¼ mile
8.19	Sweeny Ridge Trail at Bay Discovery Site looking east	73	1 ¼ mile
8.20	Transition station site from northbound Skyline Boulevard at San Bruno Avenue	70	Less than ¼ mile
8.21	View of Jefferson Substation from Cañada Trail looking north	2	Less than ¼ mile

* For photograph viewpoint locations, refer to Figure 6.2.

** Approximate distance between viewpoint and closest project component seen in photograph.