
4.1. AESTHETICS

The purpose of the Aesthetics section is to identify key visual resources and sensitive visual receptors/viewers in the project area, and to evaluate visual impacts attributable to the proposed project.

Potentially significant impacts that would occur as a result of the proposed project include alteration of scenic vistas, alteration of the existing visual character of the project site, and increased nighttime lighting. Specific project impacts on scenic vistas and the existing visual character of the project site have been illustrated through the use of photo simulations. Photos from six vantage points have been selected to represent as accurately as possible (a) existing conditions and (b) proposed conditions. Measures to minimize the visual changes follow the impact discussion. With implementation of the included mitigation measures, the project's aesthetic impacts would be reduced to a less-than-significant level.

4.1.1 ENVIRONMENTAL SETTING

Key visual elements of the project site are its elevated topography and relatively continuous tree cover. The project site is situated on the top and south flank of a low ridge between Anderson and Cottonwood. The ridge, which is approximately 200 feet high, returns to the valley floor just east of the project site. Tree canopy generally ranges from moderate to dense, although some open lands (including some irrigated pasture) are present in the southern portion of the project site. Several major electric transmission corridors traverse the project site, and converge at the PG&E Cottonwood Substation just south of the project site; these corridors have been partially cleared of trees.

The majority of lands immediately adjacent to the project site are essentially undeveloped. The principal exceptions are the Amberwood Mobile Home Park, which abuts the southernmost leg of the project site, and the PG&E Cottonwood Substation on Trefoil Lane.

With respect to public viewsheds, the project site is a significant foreground visual feature as viewed from Balls Ferry Road near Trefoil Lane and Locust Road near Vantage Drive. The project site is a mid-ground visual feature from other portions of these roads, as well as from Jim Dandy Drive. The project site is a background visual feature at more distant locations to the south and east. The site is not visible from Interstate 5 to the west, from the Anderson area to the north, or from Panorama Point Road to the northwest.

With respect to off-site facilities, improvements at the wastewater treatment plant will not be visible to sensitive receptors. The new water tank on Vantage Drive will be prominently visible from a few residences in that neighborhood (as are the two existing water tanks); the new water tank would not be visible from Interstate 5, and would be barely perceptible to viewers on Locust Road approaching from the north.

REGULATORY SETTING

An overview of existing and proposed *Shasta County General Plan* land use classifications and *Shasta County Zoning Plan* designations for the project site is provided in Section 3.4 Panorama Planned Development Regulatory Setting. A discussion of the California Scenic Highway Program, as well as objectives and policies in the *Shasta County General Plan* that are pertinent to the aesthetics evaluation for the project, is included below.

California Scenic Highway Program

The California Scenic Highway Program is administered by the California Department of Transportation (Caltrans). The goal of the program is to preserve and protect scenic highway corridors from change that would affect the aesthetic value of the land adjacent to highways. The program is not applicable to the subject site, as no scenic highways have been designated in the vicinity (Caltrans, 2008).

Shasta County General Plan

Objectives

- DR-1 Promote a visually appealing developed environment in urban, suburban, town center, mixed use, and rural residential settings.
- DR-2 Provide the County's communities the opportunity to develop their individual and local character, as reflected by citizens involved in their planning process.

Policies

There are no specific *Shasta County General Plan* policies that relate to aesthetics.

4.1.2 THRESHOLDS OF SIGNIFICANCE

Criteria for determining the significance of impacts related to visual resources were based on the Environmental Checklist Form in Appendix G of the State CEQA Guidelines (Cal. Code Regs., Title 14, Section 15000 et seq.). An impact related to visual resource is considered significant if it would:

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

4.1.3 ENVIRONMENTAL IMPACTS AND MITIGATION

Impact AES-4.1-1 Impact Scenic Resources within a State Scenic Highway (*No Impact*)

No State Scenic Highways are designated in the project vicinity at this time. The closest State Scenic Highway is State Route 151, which leads from the City of Shasta Lake to Shasta Dam, approximately 20 miles north of the proposed project site. The proposed project would not adversely affect scenic resources visible from a State Scenic Highway.

There is no impact with regard to scenic resources within a State Scenic Highway.

Impact AES-4.1-2 Impact Scenic Vistas (*Less-than-Significant Impact with Mitigation Incorporated*)

ENPLAN completed a visual impact simulation that consisted of three phases: (1) a digital model of the site and project features was constructed; the model was used to identify areas likely to be visually affected by the proposed project, undergoing a change in appearance; (2) affected areas within the project site were photographed with a digital camera; and (3) renderings of the digital model were produced to match the photographs, and the two images were used to create an illustration of post-development views of the project site, which are contrasted with the pre-development views.

The digital model of the site was primarily constructed using high-resolution LiDAR data. LiDAR is a technology that uses a laser mounted on an airplane to measure the shape of the ground and features upon it. Filtered “bare-earth” LiDAR data was first used to construct the base surface model of the local topography. The 2005 National Aerial Imagery Program (NAIP) aerial imagery was then draped over the elevation base to provide a preliminary simulation of the site. To better capture the effects of vegetative screening, LiDAR “first-return” data was used to develop an elevation model of the tree canopy in the project vicinity, and the elevation model was then analyzed with a “highest point” algorithm to find the locations and heights of trees. The tree locations were verified by comparing them against the draped aerial imagery. Three-dimensional tree symbols were then populated into the model and scaled to match the heights of the existing, on-site trees.

Using the site plan supplied by the project engineer, the virtual trees within the proposed construction areas were removed from the model. It was assumed that as a worst-case scenario, all vegetation within lots would be removed during the construction of the project. Models of five different homes (based on information provided by the project applicant) with building footprints of 1,200 to 2,800 square feet were constructed and placed on the lots in the digital model. All homes were assumed to be one or two stories tall. It was assumed that the greatest visual impact would come from taller homes, which are more likely to be seen above screening vegetation. It should be noted that the exact architectural design of the homes was not provided by the project

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applicant, and the designs shown are merely architectural illustrations. Fences and vegetation were added along selected property lines.

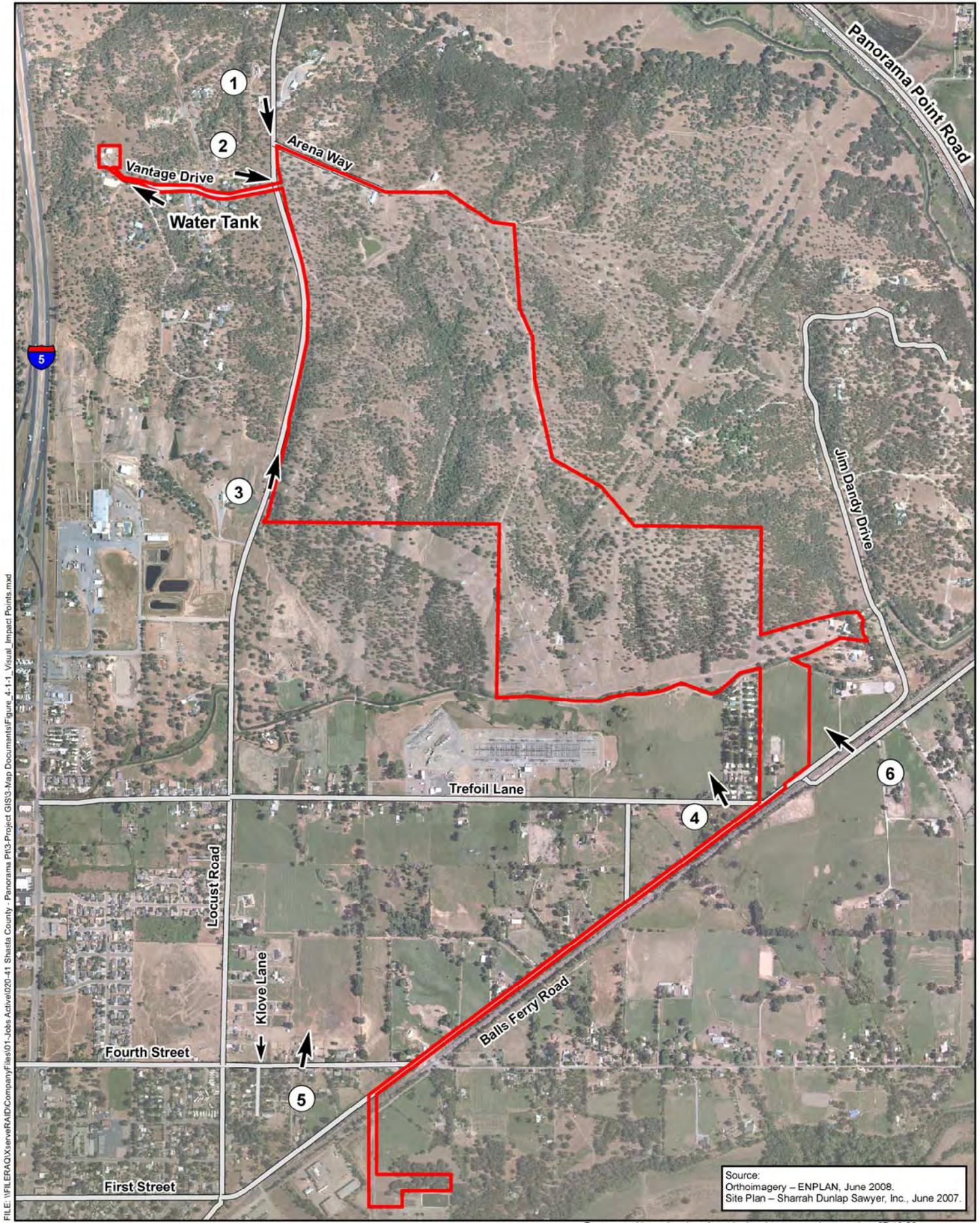
With the model populated with trees, buildings, and other features, it was then possible to observe the simulated project site from any vantage point. Illustrations were created from six vantage points (Figure 4.1.1: Visual Impact Simulation Perspective View Points): (1) facing southeast along Locust Road towards Arena Way; (2) from Vantage Drive facing east across Locust Road; (3) facing north on Locust Road near Cattleman Drive; (4) from Trefoil Lane and Balls Ferry Road, facing northwest; (5) from Fourth Street east of Klove Lane, facing north; and (6) from Jim Dandy Drive northeast of Trefoil Lane, facing northwest. These points were selected as the project site is most visible from Locust Road, Trefoil Lane, Balls Ferry Road, and Jim Dandy Drive. Visibility was also checked using line-of-sight simulations on the digital elevation model. A field crew travelled to publicly accessible areas along these roads and took digital photographs of the areas most likely to show visual change.

With the photographs as a guide, digital simulations of each photo were created from the digital model and rendered into digital images. In order to incorporate and better visualize the anticipated architectural and volumetric designs, the digital model views were detailed with hand illustrations. These illustrations are composited into the original digital photograph (Figure 4.1.2(1)-(6)). This provided both before and after views of areas that are likely to be visually affected by construction of the project.

The project would include improvements to the Cottonwood Water District system, including construction of a one-million-gallon tank on County property off of Vantage Drive (APN 090-390-002). A digital simulation of the proposed water tank was prepared to show both before and after views of the proposed water tank site (Figure 4.1.3: Water Tank Perspective View). The new tank will be similar to the existing tanks; the water tanks can be seen from Vantage Drive, but are barely visible from Locust Road. Considering the existing visual character of the water tank site, aesthetic impacts related to the construction of the new tank are considered to be less than significant.

Based on the visual simulations, impacts resulting from implementation of the project may be significant. As part of its design review process for each phase of development, Shasta County will require the applicant to submit a detailed landscaping plan (including specific details with regard to fencing design and location, vegetative screening type and location, a maintenance plan, designation of ownership for open space lands, and identification of the funding source for maintenance). Implementation of the landscaping plan as approved by Shasta County would reduce potentially significant visual impacts to a less-than-significant level. In accordance with mitigation presented in Section 4.11: Noise, fencing serving as a noise barrier would not exceed 6 feet in height, but could be placed on an earthen berm where additional noise buffering is needed.

Mitigation is necessary for the above potentially significant impact.



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Source:
 Orthoimagery - ENPLAN, June 2008.
 Site Plan - Sharrah Dunlap Sawyer, Inc., June 2007.

Feature and boundary locations depicted are approximate only. 07.16.09



Figure 4.1.1

Visual Impact Simulation Perspective View Points



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Current View



Proposed Project Perspective View

Figure 4.1.2(1) ENPLAN
View Point 1—From Locust Road facing southeast toward Arena Way

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Current View



Proposed Project Perspective View

Figure 4.1.2(2)
View Point 2—From Vantage Drive facing east across Locust Road

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Current View



Proposed Project Perspective View

Figure 4.1.2(3) ENPLAN
View Point 3—Facing north on Locust Road near Cattleman Drive

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Current View



Proposed Project Perspective View

Figure 4.1.2(4) ENPLAN
View Point 4—Facing northwest from Trefoil Lane and Balls Ferry Road

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Current View



Proposed Project Perspective View

Figure 4.1.2(5) ENPLAN
View Point 5—Facing north from Fourth Street east of Klove Lane

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Current View



Proposed Project Perspective View

Figure 4.1.2(6) ENPLAN
View Point 6—Facing northwest from Jim Dandy Drive northeast of Trefoil Lane

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Current View



Proposed Project Perspective View

Figure 4.1.3
Water Tank Perspective View

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MM AES-4.1-2. A landscaping plan (including specific details with regard to fencing design and location, vegetative screening type and location, a maintenance plan, designation of ownership for open space lands, and identification of the funding source for maintenance) for each phase of development shall be prepared by the applicant, for review and approval by the Shasta County Resource Management Department director. The applicant shall be responsible for implementing the plan, including establishing financing mechanisms for on-going maintenance.

Implementation of this mitigation measure would reduce potentially significant visual impacts to a less-than-significant level.

Impact AES-4.1-3 Impact Existing Visual Character of the Site (*Less-than-Significant Impact with Mitigation Incorporated*)

See analysis under Impact AES-4.1-2.

Mitigation is necessary for this potentially significant impact. See MM-AES 4.1-2 above.

Implementation of this mitigation measure would reduce potentially significant visual impacts to a less-than-significant level.

Impact AES-4.1-4 Increased Nighttime Lighting Impacts (*Less-than-Significant Impact with Mitigation Incorporated*)

The project site is in a rural area and dark night skies have been identified by neighboring residents as a characteristic of the area that they would like to retain. Two types of nighttime lighting impacts are related to this project: sky glow and light trespass. Sky glow is the release of light upwards, and can color or brighten the night sky and reduce the visibility of stars and other astronomical objects. Light trespass is the entry of unwanted light onto one's property from outside sources.

In accordance with Shasta County requirements, street intersections will be lit using 70-watt (6,400 lumen) High Pressure Sodium lamps. The luminaries will use a full cut-off, flat lens design that only projects light below the horizontal. This prevents light from the street lamps from directly reaching the sky; however, some light from the street lamps would reflect off the ground surface towards the sky. Project plans call for a 4-foot vegetated strip and trees between the sidewalk and the roadway, which would help scatter and absorb some of the reflected light.

To assess the significance of sky glow generated by a specific development, outdoor lighting standards developed by the International Dark-Sky Association (IDA) are used in this analysis². For rural residential areas, designated as Zone E2 by the Commission Internationale de l'Éclairage (CIE, 2000)³, the IDA specifies a total maximum outdoor

² The IDA standards were developed by astronomers to preserve their ability to observe celestial objects, and are the only known standards for analyzing nighttime light pollution.

³ The CIE is an international commission related to the science of lighting. The CIE has developed standards that describe types of lighting "Zones," and how much of light is able to escape upwards. The IDA has used those

lighting of up to 10,000 lumens per acre (IDA, 2000). As the lighting design for any future housing on the project site is not specified, an approximate amount of 2,700 lumens of skyglow per home is assumed. This number is derived from research by Garstang (2000) at 1,000 lumens per person⁴, and 2000 Census data of 2.7 persons per household for the Cottonwood, California zip code. The proposed Planned Development of 430 homes and 37 street lights on the 307-acre project site would result in approximately 4,553 lumens per acre. This is consistent with IDA maximum lumens for rural residential outdoor lighting. In addition, this is consistent with the IDA's stricter 5000 lumens per acre requirement for Zone E1, which covers "areas with intrinsically dark landscapes." Nonetheless, to ensure that the potential for sky glow is minimized, exterior lighting should be directed downward, building and landscape materials should be non-reflective, and the total wattage of streetlights should be limited.

Light trespass would be generated primarily by home lighting and car headlights. Much of the proposed development would be on ridge tops that are shielded from view from the low-lying, surrounding areas by the top edge of the ridge's face. Existing oak woodland also provides vegetative screening, which limits the amount of light escaping to surrounding residents. The potential for light trespass would occur between adjoining lots within the proposed development, where proposed lots will abut existing residences, and where the main site roads exit across from existing residents. The potential for light trespass between lots can be controlled by requiring that exterior lighting be directed downward and away from adjacent properties. With regard to light trespass from vehicle headlights, the principal area of concern is in the vicinity of Vantage Drive, where cars entering Locust Road from Arena Way would sweep their headlights across homes located there. However, the potential impact from light trespass at this location is not significant as the existing homes are 300 feet or more away from Locust Road and are shielded by existing vegetation.

Mitigation is necessary for this potentially significant impact.

MM AES-4.1-4. Outdoor lighting shall be designed to minimize the generation of light pollution through implementation of the following:

- All exterior lighting shall be directed downwards and away from adjacent properties and rights-of-way;
- Lighting shall be shielded such that the element is not directly visible, and lighting shall not spill across property lines;
- Building materials, landscaping materials (i.e., wood chips), and paint shall be non-reflective;

standards to develop recommendations with regard to the amount of outdoor lighting that can be emitted, while still adhering to the CIE lighting Zones.

⁴ Research completed by Garstang included derivation of data collected at observatories near cities. The value of 1,000 lumens per person has been used in many industry papers since the publication of *Light pollution at Mount Wilson: The effects of population growth and air pollution* (Garstang, 2000).

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- Street light intensity shall not exceed that which is included in the applicant's proposal.

Specific details with regard to outdoor lighting shall be determined during the County's design review process, and shall be included in the landscaping plan developed as part of MM AES-4.1-2.

The above mitigation measure would reduce potentially significant visual impacts to a less-than-significant level.

4.1.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the above mitigation measures, the project's aesthetic impacts would be reduced to a less-than-significant level.

End of Section.

