

3.1 Aesthetics and Visual Resources

This section discusses visual resources in the project area, the impacts on the visual resources that would result from the proposed project, and the mitigation measures that would reduce these impacts.

3.1.1 Existing Conditions

Environmental Setting

Concepts and Terminology

Identifying a project area's visual resources and conditions involves the three steps listed below.

1. Objective identification of the visual features (visual resources) of the landscape.
2. Assessment of the character and quality of those resources relative to overall regional visual character.
3. Determination of the importance to people, or sensitivity, of views of visual resources in the landscape.

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area (Federal Highway Administration 1988). Scenic quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area (U.S. Bureau of Land Management 1980). Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public's concern for a particular viewshed. These terms and criteria are described in detail below.

Visual Character

Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features are those associated with landscaped areas and development, such as roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally and even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features (USDA Forest Service 1995; Federal Highway Administration 1988). The appearance of the landscape is described in terms of the dominance of each of these components.

Visual Quality

Visual quality is evaluated using the well-established approach to visual analysis adopted by Federal Highway Administration, employing the concepts of vividness, intactness, and unity (Jones et. al. 1975; Federal Highway Administration 1988), which are described below.

- Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, as well as in natural settings.
- Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

Visual quality is evaluated on the basis of the relative degree of vividness, intactness, and unity, as modified by its visual sensitivity. High-quality views are highly vivid, are relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

Viewer Exposure and Sensitivity

The measure of the quality of a view is tempered by the overall sensitivity of the viewer. Viewer sensitivity or concern is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

The importance of a view is related in part to the position of the viewer to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (Federal Highway Administration 1988). To identify the importance of views of a resource, a viewshed is assigned to three distance zones: foreground, middleground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic regions or types of terrain, the standard foreground zone is 0.25–0.5 mile from the viewer, the middleground zone is from the foreground zone to 3–5 miles from the viewer, and the background zone is from the middleground to infinity (USDA Forest Service 1995).

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure, people engaging in recreational activities such as hiking, biking, or camping, and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (USDA Forest Service 1995; U.S. Soil Conservation Service 1978; Federal Highway Administration 1988). Commuters and nonrecreational travelers generally have fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they are generally considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be based in a regional frame of reference (U.S. Soil Conservation Service 1978). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each

setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

Regional Landscape Character

The project area is located in an unincorporated area of eastern Shasta County, California, approximately 7 miles west of Burney and 35 miles east of Redding. The project region, as discussed in this section, is the area within 30 miles of the project area. The region primarily consists of timber production, rangeland, open space/recreation, and rural land uses, with the urban core of Redding located on the far western edge of the region. The region includes many notable recreation areas and resources such as McArthur-Burney Falls Memorial and Ahjumawi Lava Springs State Parks, Lassen Volcanic National Park, Whiskeytown-Shasta-Trinity National Recreation Area, and the Pacific Crest National Scenic Trail.

The project area is located on the ridgeline of Hatchet Mountain, which is situated at the southern end of the Cascade Range. The project region lies in a transitional zone that is largely characterized by the rolling and mountainous terrain of the Cascade Range and the northern extent of the Sierra Nevada. Small valleys nestled within the mountain ranges are typical of the region. At lower elevations, the rolling portions of the region are dominated by oak woodland, often used as rangeland. The mountainous portions of the region support pine, mixed conifer, and fir forests. Much of the mountainous areas are densely vegetated, except at the sites of rock outcroppings, forest burn scars, timber harvest clearcuts, and developed communities. Water features in the project region include Shasta, Big, Fall River, and Dry Lakes; Lakes Britton and Margaret; the Pit, McCloud, and Fall Rivers; McArthur-Burney Falls; and numerous creeks and small lakes and reservoirs.

Whether in the foothills, mountains, or valleys, expansive views of the region are often available to viewers. From these vantages, forested and higher, snowcapped peaks can be seen stretching from the foreground to the horizon line, many miles in the background. From valleys, the grassy foothills and forested mountains can be seen in the middleground and background, framing the valley. Background views are sometimes limited to the foothills and mountains immediately surrounding the viewer, because these features and vegetation block the line of sight to features beyond that point. The focal range of views from the mountains and valleys often varies with atmospheric and weather conditions. These views also change seasonally, when the dark forested mountains turn white with snow or the browned rangelands turn green with rain.

A mix of natural, agricultural, and rural landscapes characterize the project region. The landscape pattern is influenced by the terrain, with major roadways winding through the foothills, mountains, and valleys to connect small cities, towns, and communities. The visual quality of the project region and the area immediately surrounding the project area is high in vividness, intactness, and unity.

Local Study Area Landscape Character

The project vicinity is defined as the area within 0.5 mile of the project area and is mostly comprised of Hatchet Mountain. The majority of the vicinity is characterized by forested land, which extends in all directions. State Route 299 is a moderately winding, east–west two-lane highway with shoulders that crosses the southern portion of the project vicinity at Hatchet Ridge Summit. Coniferous forest lines both sides of the roadway. The only public views of the project area within the project vicinity are from State Route 299; however, the ridge cannot be seen from most stretches of the highway because the vegetation and topography adjacent to the roadway preclude views toward the ridge.

The project area is accessed via Bunchgrass Lookout Road, a private dirt road that is primarily used by the landowners (Sierra Pacific Industries and Fruit Growers Supply Co.), as well as by PG&E, Verizon, Jefferson Public Radio, and American Tower to access their facilities on the ridge. These facilities are artificial features that are within a natural landscape; they comprise small structures, screened by vegetation, and two clusters of cell towers that are visible on clear days from eastbound State Route 299 west of the project area and from Burney, but not readily discernable from public vantage points on cloudy or overcast days due to viewers' distance from the site and because the materials and light, skeletal form of the towers do not create a substantial visual massing. Other artificial features include a transmission line and wooden power line poles that ascend and cross Hatchet Mountain, following the ridge for a portion of their alignment. The cleared easement width makes the alignment up the side of the mountain visible to viewers traveling west on State Route 299 from Burney, but the transmission line itself is not very visible. Like the aforementioned infrastructure, the transmission lines and wooden utility poles are not visible from public vantage points due to distance from the viewers and because the materials and light, skeletal form of the features do not create a substantial visual massing.

Because the land is in private ownership, there are no public views from the site. Private views from the site vary by location on the ridge, but often offer sweeping foreground to background panoramas in most directions and include Mounts Lassen and Shasta, the Trinity Alps, adjacent valleys and waterbodies, and nearby communities. These expansive views are due largely to the August 1999 Fountain Fire and would be blocked or screened under normal forested conditions. Presently, much of the ridge appears to be fairly open, lacking the dense forest canopy typical of the region. Rock outcroppings and cobbles and evidence of forest burn scars and past timber harvests are present. Natural recruitment and reforestation measures are contributing to revegetation of areas of the ridge that were burned; these areas are characterized by herbaceous and brush layers and saplings to young trees that vary in height from 1 foot to approximately 15 feet. Trees along State Route 299, outside the burn area, exceed heights of 60 feet.

Land uses in the vicinity are primarily natural and agricultural, mainly limited to timber production. Development in the project vicinity is limited because of the terrain and the predominance of timber harvesting. The community of Burney is located east of the project site, outside the project vicinity as defined above.

The visual quality of the project vicinity is high in vividness, intactness, and unity because of the dominance of the natural environment, visual contrast between the forested mountain slopes and snow, seasonal variety in views, presence of open space areas from the burn, limited presence of artificial, built elements in the landscape, and commonality of the visual character in the surrounding region.

Existing Viewer Groups and Viewer Response

Key viewpoints, shown in Figure 3.1-1, have been chosen for their representation of the landscape within which they are located and viewers affected.

Nearby Communities

Round Mountain, 17 miles west of the project area, and Montgomery Creek, 14 miles west, are nearby communities that have limited views toward the project site. Burney is the closest community to the project site, located 7 miles east of it, with direct views of the project site.

Residents

Round Mountain and Montgomery Creek are rural forested communities characterized by small groupings of residents along State Route 299, with other residents located on large parcels along smaller local roads that connect to State Route 299. These communities have a history that is strongly influenced by the lumber industry. Background views of the project site from Round Mountain are dependent on the viewer's location in the community (Figure 3.1-2, Photo 1).

Views from Montgomery Creek are obscured by the community's proximity to the base of a ridge that confines views to the foreground (Figure 3.1-2, Photo 2), but background views of Hatchet Mountain can be seen from certain locations along roadway corridors and from residences, businesses, and public facilities (e.g., local schools). However, the majority of views are limited to the immediate foreground and middleground because they are obstructed by the built environment, topographic relief, and the surrounding forest. Viewers in this community are accustomed to seeing clear-cut scars, in addition to natural burn scars, because surrounding private and public lands are still actively managed for timber production. Viewer sensitivity in these two communities is moderate because of distance from and limited views of the project area.

Burney is more densely populated than Round Mountain and Montgomery Creek, and buildings are closer together, with commercial development being concentrated along the State Route 299/Main Street corridor and residential development radiating out from this commercial center. The forest has been thinned here to accommodate the community, and viewers on the outskirts of these locations are likely to have views of the project site. These views, however, may be screened by the surrounding forest. Views in forested areas are presented by clearings or open space fields that are interspersed through the valley. Infrastructure such as utility lines and poles are common vertical elements that detract from the overall visual quality of views from the community; in conjunction with existing buildings, these elements also act to obscure views (Figure 3.1-3, Photo 3). Burney's history, like that of Round Mountain and Montgomery Creek, is strongly influenced by the timber industry, and viewers in this community are accustomed to seeing some clear-cut scars, in addition to natural burn scars. However, residents of Burney are likely to perceive Hatchet Mountain as an open space amenity, because scenic resources play an integral role in the area's local economy by encouraging tourism and recreation. Residents have a higher sense of ownership of such places and are aware of changes to these features; therefore, viewer sensitivity for residents in Burney is high.

Businesses

Businesses with views of the project site include those located along and just off the State Route 299/ Main Street corridor, as well as timber-harvesting and cogeneration energy production operations, such as Sierra Pacific Industries and Burney Forest Power, located between Hatchet Mountain and Burney. Commercial development along State Route 299/Main Street directly abut and are oriented facing the roadway (Figure 3.1-3, Photo 4). Because of orientation and the presence of neighboring businesses or residences that may block views, many businesses do not have direct views of the project site; accordingly, most views of Hatchet Ridge are seen by patrons entering or exiting these businesses (Figure 3.1-4, Photo 5). Businesses are likely to be less sensitive to visual changes at the project site, because they are more focused on operational tasks and less focused on the greater surrounding visual environment. However, like residents of Burney, people involved with businesses are likely to perceive Hatchet Mountain as a scenic resource that plays an integral role in the area's local economy by encouraging tourism and recreation; consequently, businesses would be moderately sensitive to visual changes.

Sierra Pacific Industries' timber-harvesting operations are managed from a main facility that includes administrative offices and a small log sawmill and cogeneration plant. Workers are often at harvest locations or engaged in the sawmill or cogeneration plant operations and are not focused on views of the project area (Figure 3.1-4, Photo 6). Workers in the Burney Forest Power cogeneration plant would also be focused on the task at hand and would not on views of the project site. Viewers from each of these businesses would have low sensitivity to visual changes.

Recreationists

Recreationists constitute another large viewer group of the proposed project. The greater area surrounding the project site supports many notable recreation areas and resources such as McArthur-Burney Falls Memorial and Ahjumawi Lava Springs State Parks, Lassen Volcanic National Park, and the Pacific Crest National Scenic Trail, in addition to recreational uses occurring on private properties. These areas provide active and passive recreation opportunities such as hiking, whitewater rafting, mountain biking, hunting, fishing, birding, and camping.

Recreationists comprise both nearby residents and visitors to the area, with visitors to the area making up the larger of the two subsets. Recreationists' views of the project site vary and may range from quick and fleeting glimpses toward Hatchet Mountain to longer exposure times. Recreational activities occurring at ground-level location, such as McArthur-Burney Falls Memorial State Park (Figure 3.1-5, Photos 7 and 8) and the Pacific Crest Trail, often do not have views of the project site, because views are obscured by topographic relief and dense forest vegetation. Primary views toward the project site may be present from higher elevations, such as background views from Mount Lassen, but distance and atmospheric conditions preclude discernment of fine visual details. Recreationists are more likely to regard the natural and built surroundings as a holistic visual experience and, in general, do not have prolonged visual exposure to the project site. Accordingly, recreationists would have moderate sensitivity to changes occurring as a result of the proposed project.

Roadway Travelers

Travelers on State Route 299 constitute one of the largest viewer groups of the proposed project area. State Route 299 is used for local traffic and recreation access and as a timber haul route. Speeds range from 25 to 55 mph depending on proximity to development and curvature and condition of the roadway.

As described in *Local Study Area Landscape Character*, State Route 299 is a moderately winding, east-west two-lane highway with shoulders that crosses the southern portion of the project vicinity at Hatchet Ridge Summit (Figure 3.1-6, Photos 9 and 10.) Coniferous forest lines both sides of the roadway. The only public views of the project area within the project vicinity are from State Route 299; however, the ridge cannot be seen from most stretches of the highway because vegetation and topography adjacent to the roadway preclude views toward the ridge. Viewers who travel State Route 299 generally possess moderate visual sensitivity to their surroundings. Roadway characteristics vary from straight to tight, winding curves; from smooth to rougher surfaces; from fully or partially shaded to fully exposed surface; from dense to open canopy cover on either side of the roadway; and from level to steep roadway gradients (Figure 3.1-7, Photos 11 and 12, and Figure 3.1-8, Photo 13). While roadway conditions may often require extra attention and focus, they may also limit speeds to a level that allows viewers to observe their surroundings and experience the passing landscape and changing views. Travelers move through the area at varying speeds: normal highway speeds differ depending on the

traveler's familiarity with the route and roadway conditions (presence/absence of snow). Single views typically are of short duration, except on straighter stretches where views last longer.

State Route 89 from its intersection with State Route 36 (south of Mount Lassen) to Interstate 5 (south of Mount Shasta) is part of the Volcanic Legacy Scenic Byway and is included in the Federal Highway Administration National Scenic Byways Program (see *Federal and State* below) (Federal Highway Administration 2007). Travelers along this route include recreational, local, and commercial traffic. The portion of the route near the project area is at a lower elevation than the ridge, and the roadway is relatively flat and straight with dense forest on either side (Figure 3.1-9, Photos 14 and 15). Views of the project area from the Scenic Byway are mostly obscured by this vegetation, and background views of ridgelines are only briefly viewed in passing through vegetation (Figure 3.1-10, Photo 16). Electrical transmission lines cross portions of the Volcanic Legacy Scenic Byway in this area, creating a vertical, artificial element that detracts from the overall quality of views, yet opens the forest canopy to provide quick, fleeting views for travelers on the roadway (Figure 3.1-10, Photo 16).

Viewers who frequently travel these routes generally possess moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on the passing views but on the roadway, roadway signs, and surrounding traffic. Viewers who travel these routes because they are part of the Volcanic Legacy Scenic Byway generally possess moderately high visual sensitivity to their surroundings because they are likely to respond to the natural environment with a high regard and as a holistic visual experience.

Regulatory Setting

Federal and State

State Route 89 from its intersection with State Route 36 (south of Mount Lassen) to I-5, south of Mount Shasta, is part of the Volcanic Legacy Scenic Byway. State Route 299 runs generally northeast-southwest and intersects this portion of State Route 89 approximately 4.8 miles northeast of Burney and 9.8 miles northeast of the project area. The Volcanic Legacy Scenic Byway is designated as an All-American Road under the Federal Highway Administration National Scenic Byways Program (Federal Highway Administration 2007). Although recognized for their scenic qualities by the Federal Highway Administration, these designated byways fall under jurisdiction of the local county, state (Caltrans), or U.S. Forest Service (if on Forest Service lands) and are, therefore, not protected under federal law (Steele pers. comm.).

There are no roadways in or near the project area that are designated in federal or state plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds. Therefore, federal and state guidelines do not apply. However, State Route 89, located 15 miles east of the project area, is designated as an *Eligible State Scenic Highway*.

Local

The project area is under the jurisdiction of Shasta County. Land use changes and development are subject to county policies, including visual resource and aesthetic policies, design guidelines, and ordinances. These are discussed below.

Shasta County General Plan

The County General Plan (September, 2004) contains the following aesthetic-related policies that would apply to the proposed project.

Scenic Highway Policies

Figure SH-1 in the Scenic Highway Element of the General Plan designates Hatchet Ridge Summit as a “Gateway or location that marks the entrance to a community of geographic area.” In addition, Figure SH-1 shows State Route 299 from Bella Vista east to the Hatchet Ridge Summit gateway as a “corridor in which the natural environment is dominant” and State Route 299 from the Hatchet Ridge Summit gateway to Burney as a “corridor in which natural and man-made environment contrast.” Accordingly, the objectives and policies listed below apply to the proposed project.

Objectives:

SH-1 Protection of the natural scenery along the official scenic highways of Shasta County from new development which would diminish the aesthetic value of the scenic corridor.

SH-2 New development along scenic corridors of the official scenic highway should be designed to relate to the dominant character of the corridor (natural or natural and man-made contrast) or of a particular segment of the corridor. Relationships shall be achieved in part through regulations concerning building form, site location, and density of new development.

SH-3 Recognition that the management practices of agriculture, timber, and other resource-based industries which may cause some degradation of the visual quality of the scenic corridor are inevitable but their impacts are temporary.

Policies:

SH-a To protect the value of the natural and scenic character of the official scenic highway corridors and the County gateways dominated by the natural environment, the following provisions, along with the County development standards, shall govern new development:

- setback requirements
- regulations of building form, material, and color
- landscaping with native vegetation, where possible
- minimizing grading and cut and fill activities
- requiring use of adequate erosion and sediment control programs
- siting of new structures to minimize visual impacts from highway
- regulation of the type, size, and location of advertising signs
- utility lines shall be underground wherever possible; where undergrounding is not practical, lines should be sited in a manner which minimizes their visual intrusion.

SH-b The type, size, design, and placement of signs within an official corridor shall be compatible with the visual character of the immediate surroundings. The County’s sign regulations should be redrafted for the following locations:

- timberlands and forest areas
- croplands and grazing lands
- rural community centers
- urban and town centers
- recreational uses

Shasta County Zoning Ordinance

Section 17.84.050, *Lighting*, of the County Zoning Ordinance (as amended through July 2003) contains the following aesthetic-related policy that would apply to the proposed project.

All lighting, exterior and interior, shall be designed and located so as to confine direct lighting to the premises. A light source shall not shine upon or illuminate directly on any surface other than the area required to be lighted. No lighting shall be of the type or in a location such that constitutes a hazard to vehicular traffic, either on private property or on abutting streets.

3.1.2 Impact Analysis

This section describes the analysis relating to impacts on visual resources for the proposed project. It describes the methods used to determine the project's impacts and the thresholds of significance of those impacts. Because evaluating visual impacts is inherently subjective, federal and professional standards of visual assessment methodology have been used to determine potential impacts on aesthetic values of the project area. Measures to mitigate (avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion. In addition, for the purpose of this analysis, impacts on private views (e.g., residential viewers) will be discussed but not included as a threshold for determining significance. The threshold for determining significance is based on public views.

Methodology

Using the criteria for determining significance described above, impact analysis of the visual effects of the project employed the procedures listed below.

- A GIS viewshed analysis to identify a preliminary list of vantage points from which the project area could be visible; also used to prepare visual simulations. Because the GIS analysis does not include features such as vegetation or structures, it was used as a starting point to help guide the field observation described in the next item and is not in itself of substantial utility in discussing visual impacts.
- Direct field observation from vantage points, including neighboring buildings, property, and roadways (conducted April 25, 2007).
- Photographic documentation of key views of and from the project site, as well as regional visual context.
- Review of project construction drawings.

- Review of the project in regard to compliance with state and local ordinances and regulations and professional standards pertaining to visual quality.

Thresholds of Significance

The determination of whether the proposed project would have a significant effect on visual resources was developed in accordance with the State CEQA Guidelines. The proposed project may have a significant effect on visual resources under CEQA if it would result in one or more of the conditions listed below.

- Cause a substantial, demonstrable negative aesthetic effect on a scenic vista or view open to the public.
- Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a state scenic highway.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare that would adversely affect day or nighttime public views.

According to professional standards, a project may also be considered to have a significant impact if it would substantially result in any of the conditions listed below.

- Conflict with local guidelines or goals related to visual quality.
- Alter the existing natural viewsheds, including changes in natural terrain.
- Alter the existing visual quality of the region or eliminate visual resources.
- Increase light and glare in the project vicinity.
- Result in backscatter light into the nighttime sky.
- Result in a reduction of sunlight or introduction of shadows in community areas.
- Obstruct or permanently reduce visually important features.
- Result in long-term (that is, persisting for 2 years or more) adverse visual changes or contrasts to the existing landscape as viewed from areas with high visual sensitivity.

Impacts and Mitigation Measures

Impacts that would occur as a result of the proposed project include temporary changes in views as a result of construction; potential glare and light impacts; and visual impacts resulting from topography and grade changes, removal of vegetation, and introduction of wind turbines into the project area. These impacts would potentially affect visual resources in the project area. Specific project impacts have been illustrated through the use of photo simulations. Photos from three vantage points have been selected to represent as accurately as possible (a) existing conditions and (b) proposed conditions. These locations are shown in Figure 3.1-1.

Although State Route 89 in the project vicinity is part of the Volcanic Legacy Scenic Byway, it enjoys no prominent or semi-prominent views of the project area because the roadway is relatively flat, straight, and at a lower elevation than Hatchet Ridge with dense forest on either side of the roadway. These characteristics combine to obscure background views of Hatchet Ridge. Because the project area and project features would not be visible from Highway 89, the project would not damage scenic resources along this route. There would be no impact.

The proposed project is generally consistent with and would not conflict with local visual policies, listed above in *Regulatory Setting*.

Impact AES-1: Temporary visual changes as a result of construction (less than significant)

Construction of the proposed project would create temporary changes in views of the project area. Construction activities would introduce heavy equipment and associated vehicles, including bulldozers, excavators, and trucks, but these would not be seen from any public vantage. Cranes would be used to erect the towers, and viewer groups would be able to see the turbines being raised by the cranes. Travelers on State Route 299 would not be accustomed to seeing construction activities of the cranes erecting the turbines; however, much of their focus is on driving and roadway conditions, and their sensitivity to such impacts would be moderately low. Recreationists would not be affected by construction activities because they are not in the immediate area, nor do they have views of the project site where they could discern construction activities. The nearby communities of Round Mountain and Montgomery Creek would not be affected by construction because their distance from the site would render cranes and turbine erection indiscernible. Viewers in the nearby community of Burney would be slightly affected by construction activities because of their awareness of the proposed project; however, impacts on these viewer groups are not considered adverse because construction would take 6–12 months, and they would only experience a short-term change in the visual character. No mitigation is proposed.

Impact AES-2: Adverse effects on a scenic vista by degrading the visual character of the project area and its surroundings (significant and unavoidable)

As described in Chapter 2, *Project Description*, the proposed project involves installing wind turbines along the ridgeline of Hatchet Mountain. It would introduce large, vertical, artificial structures with revolving turbine blades into the viewshed and would change the ridgeline from one that is predominantly natural to one with distinct artificial features that would be highly visible to Burney residents and businesses, roadway travelers, and recreationists in or on the outskirts of Burney. Between 42 and 68 turbines, with hub height of either 65 or 80 meters would be installed along a 6.5-mile alignment along the ridgeline. Relative to baseline conditions, these turbines would substantially alter the existing visual character and quality of views toward the ridge regardless of the number or height of the turbines. As shown in the simulation for Viewpoint 1 (Figure 3.1-11), at such distances the turbines would not be very noticeable and would not affect the existing visual character. Moreover, movement of the turbines from this vantage would not be very noticeable due to distance. However, as shown in simulations for Viewpoints 2 and 3 (Figures 3.1-12 and 3.1-13, respectively), from closer vantage points (e.g., Burney) the turbines become prominent visual features on the ridgeline and alter the visual character and quality for all viewer groups. In addition to the size, movement of the turbines would likely draw more focused viewer attention toward the structures than would stationary structures of equal size and visual mass.

The safety measures proposed to ameliorate the potential to present an air traffic hazard to aircraft because of the proposed project's proximity to several airports in the region are described in Chapter 2, *Project Description*. The FAA Advisory Circular AC 70/7460-1K (Federal Aviation Administration 2007) includes marking standards for wind turbines as shown below.

The bright white or light off-white paint most often found on wind turbines has been shown to be most effective, and if used, no lights are required during the daytime. However, if darker paint is used, wind turbine marking should be supplemented with daytime lighting, as required. [133. Marking Standards, page 33]

This impact is considered significant and unavoidable. No mitigation measures could reduce the significance of this impact; accordingly, no mitigation is feasible. .

Impact AES-3: Potential Damage to Scenic Resources Along a Scenic Highway (less than significant)

While State Route 89 through the project vicinity is part of the Volcanic Legacy Scenic Byway, there are no prominent or semi-prominent views of the project area, because the roadway is relatively flat, straight, and at a lower elevation with dense forest on either side of the roadway, which factors all contribute to obscure background views of Hatchet Mountain. Because the project area and project features would not be visible from State route 89, the project would not damage scenic resources along this route. There would be no adverse impact on federal or state scenic routes.

State Route 299 in Shasta County is not a designated scenic highway, but the County General Plan designates Hatchet Ridge Summit as a "Gateway or location that marks the entrance to a community of geographic area," State Route 299 from Bella Vista east to the Hatchet Ridge Summit gateway as a "corridor in which the natural environment is dominant," and State Route 299 from the Hatchet Ridge Summit gateway to Burney as a "corridor in which natural and man-made environment contrast." Hatchet Ridge Summit would not be affected because the proposed project would not be visible from the summit due to dense coniferous vegetation limiting views toward the project area to the foreground. As discussed in Impact AES-2, on State Route 299 from Bella Vista east to the Hatchet Ridge Summit, the presence of the turbines would increase the presence of artificial elements into the viewshed where the natural environment dominates and would be more obvious as roadway users approach the project area. As discussed in Impact AES-2, on State Route 299 from Burney to the Hatchet Ridge Summit, the turbines would be visually more prominent and further increase the contrast between the natural and artificial visual environment. The changes visible from State Route 299 would be significant and unavoidable regardless of the actual number of turbines and their capacity.

Impact AES-4: Permanent changes in light and glare (less than significant with mitigation)

Nighttime Light

Safety lighting in accordance with FAA Advisory Circular AC 70/7460-1K (Federal Aviation Administration 2007) is required on turbines 200 feet or taller to reduce potential hazards to aircraft traveling to nearby airports. These regulations require either a single incandescent or rapid discharge flashing red light located on each of the end turbines in a line and on interior turbines so that no lighted turbine is 0.5 mile or more from the nearest lighted turbine. As described in *Existing Viewer Groups and Viewer Responses*, Burney is densely populated, and residential and commercial buildings are located close together. Orientation of buildings and the presence of neighboring businesses and residences limit views to the immediate surroundings for

most viewers within Burney, precluding views of the project site. In addition, the surrounding forest and existing vegetation within Burney further act to limit views toward the project site. Because of these factors, most views of Hatchet Ridge are seen by business patrons or residents while entering or exiting buildings and only from building locations along roadway corridors with views toward the project site or from locations on the western outskirts of the community where the forest has been thinned and are most likely to have views of the project site. The residential and business views toward the project site are minimal, and most of these viewers are often focused on their immediate surroundings. For those that do have views of the site, safety light intensity and the number of lights being installed (regardless of the number and size of turbines) would not be sufficient to create a source of light pollution that would cause viewers to redirect their attention from their immediate surroundings toward the project site. Accordingly, the safety lights would not adversely affect residents and businesses.

The largest viewer groups with nighttime views of the site are roadway users traveling toward the project area on State Route 299. However, the number of travelers on the roadway decreases significantly during the night. In the fall and winter, earlier nightfall is conducive to more nighttime viewers than during the spring and summer months. However, roadway users are generally more focused on their immediate surroundings and roadway conditions than on more distant views, with more intense focus paid to driving in dark than in daylight conditions. Safety light intensity and the number of lights being installed would not adversely affect roadway users, especially when combined with a roadway user's mobility through a landscape that offers and hides views of the project area.

As discussed in Chapter 2, *Project Description*, the operations and maintenance facility would be painted in neutral earth-toned colors with a nonreflective roof, and any site lighting would be directed to minimize light scatter. Distance from all viewer groups, position in the landscape and surrounding vegetation, and measures to minimize light scatter would make this small light source indiscernible to all viewer groups.

No other nighttime lights are proposed as part of this project, and safety lighting on the turbines at each end of the line of turbines and every 0.5 mile along the turbine string would not create a source of light pollution. Consequently, there would be no change in intensity or location of nighttime light and the project would not result in a change in light and glare. Implementation of Mitigation Measure AES-2 would reduce this impact to a less-than-significant level.

Daytime and Nighttime Glare

The proposed turbines along Hatchet Ridge would be painted off-white to light grey in accordance with FAA requirements; no reflective surfaces are proposed. These colored surfaces would blend with the sky during the day, would not be visible at night because of minimal safety lighting, and would not cause reflective daytime or nighttime glare. There would be no adverse impact.

Mitigation Measure AES-1: Use rapid-discharge flashing red safety lighting

As discussed in Chapter 2, *Project Description*, studies have suggested that use of a flashing red light reduces the visual impacts on neighboring communities. Accordingly, a rapid-discharge flashing red light will be used rather than a single incandescent light to comply with FAA regulations.