

3.1 Aesthetics

This section identifies and evaluates issues related to visual resources in the project area.

The *Existing Conditions* discussion below describes the current setting of the project area. The purpose of this information is to establish the existing environmental context against which the reader can then understand the environmental changes caused by the proposed Initial and Full Repower. The environmental setting information is intended to be directly or indirectly relevant to the subsequent discussion of impacts. For example, the setting identifies groups of people who have views of the project area because the Initial and Full Repower could change their views and experiences.

The environmental changes associated with the Initial and Full Repower are discussed under Section 3.1.3, *Environmental Impacts*. This section identifies impacts, describes how they would occur, and prescribes mitigation measures to reduce significant impacts, if necessary.

3.1.1 Concepts and Terminology

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

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 include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally, 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 (U.S. 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 (FHWA), employing the concepts of vividness, intactness, and unity (Federal Highway Administration 1988; Jones et. al. 1975), 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, and 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 based on the relative degree of vividness, intactness, and unity, as modified by its visual sensitivity. High-quality views are highly vivid, 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.

Visual Exposure and Sensitivity

The measure of the quality of a view must be 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 must be broken into distance zones of 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 from the foreground zone to 3–5 miles from the viewer, and the background zone from the middleground to infinity (Litton 1968).

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 (U.S. Forest Service 1995; Federal Highway Administration 1988; U.S. Soil Conservation Service 1978). Commuters and non-recreational travelers have generally 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 made 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.

3.1.2 Existing Conditions

Regulatory Setting

Aesthetic values are protected indirectly through a variety of federal, state, and local laws and programs. The federal government does not explicitly regulate visual quality but recognizes its importance and preserves aesthetic values through the National Park, National Wildlife Refuge, National Monument, and National Scenic Byway Systems. At the state level, aesthetic values are preserved through the establishment of state parks and preserves, and through the California Scenic Highway Program. In addition, although local jurisdictions are not required to address visual resources as a separate topic in their general plans, several of the required general plan elements—including land use, conservation, and open space—relate indirectly to the aesthetic issues faced by communities as they manage their growth. General plans may also contain additional elements on topics of concern to the local community; common themes that bear on aesthetics and visual resources include recreation and parks, community design, and heritage or cultural resources.

State

I-580 from the San Joaquin County line to I-205 (Post Miles 0.0 to 0.393), which is a 0.4 mile long segment, is a State-designated scenic highway in the California Department of Transportation's (Caltrans') Scenic Highway Program (California Department of Transportation 2012). The I-580 intersection with I-205 falls nearly 0.5 mile east of the Griffith parcels (APNs 99B-7875-1-2 and 99B-7875-1-3).

Local

Alameda County General Plan

The Alameda County General Plan (1966) (General Plan) contains the following aesthetic-related policies.

Open Space Element

The following principles from the General Plan may apply to the Initial and Full Repower phases.

- **Include Natural Ridgelines and Slope Areas:** Natural ridgelines, and slopes in excess of twenty-five percent in grade, should be left as open space to eliminate mass grading.
- **Consolidate and Locate Utility Lines to Avoid Scenic Areas:** Wherever feasible, power and pipe utility lines should be consolidated to prevent further severance of open space lands. Utility lines and aqueducts in open space areas should be located so as to avoid areas of outstanding beauty.
- **Natural Resources within Open Space Areas Should be Permanently Protected:** Within open space areas, either publicly or privately owned, removal of mature trees should not be permitted without the permission of the local authority. Alteration of streambeds or bodies of water and

adjacent vegetation should be permitted only as a means of erosion-control or flood control, as permitted by the adopted plans of regional or local jurisdictions, and in such a manner as to enhance water courses, scenic shorelines, and wetlands within the county.

Scenic Route Element

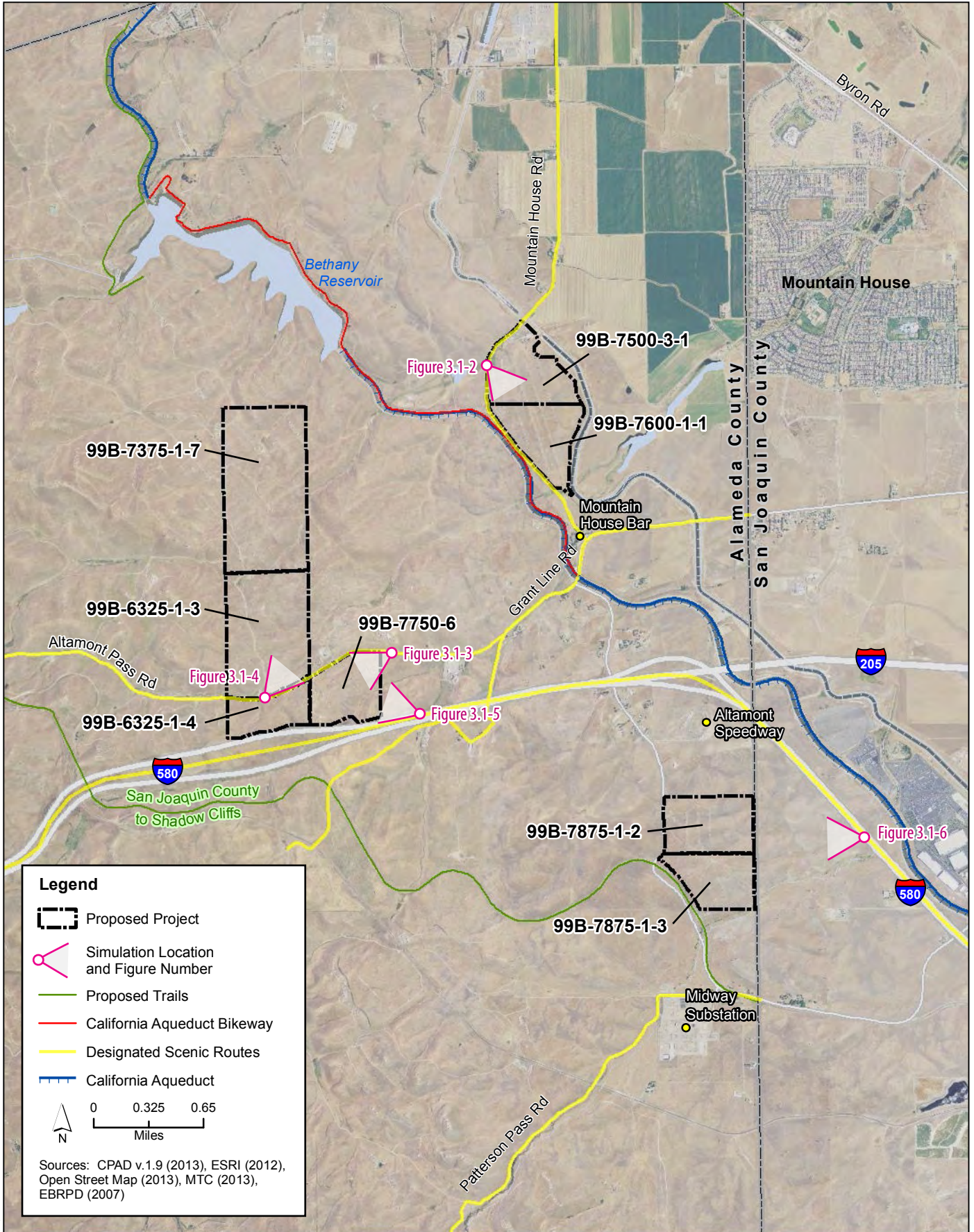
The Scenic Route Element of the General Plan provides a continuous, countywide scenic route system and is intended to serve as a guide for local jurisdictions for development of city-scale scenic route systems and as a guide for development to protect and enhance the scenic values along designated scenic routes (Alameda County 1966).

Four of these designated routes traverse or are adjacent to the project area (see Figure 3.1-1). The type of route, as categorized by Alameda County, is also included in the list below (Alameda County 1966).

- I-580 (Freeways and Expressways)
- Altamont Pass Road (Major Thoroughfares)
- Grant Line Road (Major Thoroughfares)
- Mountain House Road (Major Thoroughfares)
- Patterson Pass Road (Major Thoroughfares)

In addition, the following principles from the General Plan may apply to the Initial and Full Repower phases.

- **Provide for Normal Uses of Land and Protect Against Unsightly Features:** In both urban and rural areas, normally permitted uses of land should be allowed in scenic corridors, except that panoramic views and vistas should be preserved and enhanced through supplementing normal zoning regulations with special height, area, and sideyard regulations; through providing architectural and site design review; through prohibition and removal of billboards, signs not relevant to the main use of the property, obtrusive signs, automobile wrecking and junk yards, and similar unsightly development or use of land. Design and location of all signs should be regulated to prevent conglomerations of unsightly signs along roadsides.
- **Locate Transmission Towers and Lines Outside of Scenic Route Corridors When Feasible:** New overhead transmission towers and lines should not be located within scenic corridors when it is feasible to locate them elsewhere.
- **Underground Utility Distribution Lines When Feasible; Make Overhead Lines Inconspicuous:** New, relocated or existing utility distribution lines should be placed underground whenever feasible. When it is not feasible to place lines underground, they should be located so as to be inconspicuous from the scenic route. Poles of an improved design should be used wherever possible. Combined or adjacent rights-of-way and common poles should be used wherever feasible.
- **Establish Architectural and Site Design Review:** Architectural and site design review by the appropriate local jurisdiction should be provided for each site and for all new or altered structures so that particular consideration will be given to appearances that will enhance scenic qualities from the scenic routes. Originality in landscape and construction design should be encouraged. Such designs should be in keeping with cityscape and natural skyline and reflect the density, movement and activities of the population.



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**Figure 3.1-1
Aesthetics Environmental Setting**

- **Use Landscaping to Increase Scenic Qualities of Scenic Route Corridors:** Landscaping should be designed and maintained in scenic route corridors to provide added visual interest, to frame scenic views, and to screen unsightly views.
- **Provide and Encourage Continuing Maintenance of Scenic Route Corridors:** Continuing maintenance of scenic route corridors that the public owns or has rights to should be provided. Private owners of areas within the scenic route corridor should be encouraged to provide maintenance of landscape and structures as a means of improving the scenic quality of the scenic route.
- **Encourage Owners of Large Holdings to Protect and Enhance Areas of Scenic Values:** Public agencies and private individuals having control of large holdings should be encouraged to protect and enhance natural resources within their properties. Cooperation should also be sought with owners of smaller lots and within community improvement and conservation groups.
- **Control Tree Removal:** No mature trees should be removed without permission of the local jurisdiction as a means of preserving the scenic quality of the county.
- **Control Alteration of Streambeds and Bodies of Water:** Alteration of streambeds or bodies of water and adjacent vegetation should be permitted only with approval of the local jurisdiction, as a means of preserving the natural scenic quality of the stream courses, bodies of water, vegetation and wildlife in the county. Development along edges of streams, canals, reservoirs, and other bodies of water should be designed and treated so as to result in naturalistic, architectural, or sculptural forms.
- **Preserve and Enhance Natural Scenic Qualities in Areas Beyond the Scenic Corridor:** Views from scenic routes will comprise essentially all of the remainder of the county beyond the limits of the scenic corridor: the corridor is intended to establish a framework for the observation of the views beyond. Therefore, in all areas in the county extending beyond the scenic route corridors, scenic qualities should be preserved through retaining the general character of natural slopes and natural formations, and through preservation and enhancement of water areas, watercourses, vegetation and wildlife habitats. Development of lands adjacent to scenic route corridors should not obstruct views of scenic areas and development should be visually compatible with the natural scenic qualities.
- **Provide for Normal Uses of Land but Limit Overhead Utilities and Outdoor Advertising Structures:** In both developed and undeveloped areas, outdoor advertising structures, utility and communication towers, poles, and wires should be located only where they will not detract from significant scenic views. All other structures and use of land should be permitted as specified in the local zoning ordinance as supplemented by special height regulations.

The following development standards may apply to the Initial and Full Repower phases.

- Alteration to natural or artificial land contours should not be permitted without a grading permit issued by the local jurisdiction as a means of preserving and enhancing the natural topography and vegetation in developable areas. Mass grading should not be permitted. The following criteria should be applied in the review of grading permits in developable areas:
 - As a means of preserving natural *ridge skylines* within the county, no major ridgeline should be altered to the extent that an artificial ridgeline results.
 - Access roads should be located and designed to keep grading to a minimum.
 - Natural ground contours in slope areas over 10% should not be altered more than 5% overall, except in such slope areas where large stands of mature vegetation, scenic natural formations or natural watercourses exist, where grading should be limited so as to preserve the natural features.

- Any contour altered by grading should be restored by means of land sculpturing in such a manner as to minimize run-off and erosion problems, and should be planted with low maintenance, fire resistant plant materials that are compatible with the existing environment.

East County Area Plan

The project area falls within the East County Area Plan (ECAP), a portion of the Alameda County General Plan. The following goals and policies of the ECAP may be applicable to the Initial and Full Repower phases. Goals in the ECAP are intended to be general statements of a condition Alameda County wants to achieve, and the associated policies are the focused statements of how the County will achieve these goals (Alameda County 1994).

Sensitive Viewsheds

Goal: To preserve unique visual resources and protect sensitive viewsheds.

Policy 106: Structures may not be located on ridgelines or hilltops or where they will project above a ridgeline or hilltop as viewed from public roads, trails, parks and other public viewpoints unless there is no other site on the parcel for the structure or on a contiguous parcel in common ownership on or subsequent to the date this ordinance becomes effective. New parcels may not be created that have no building site other than a ridgeline or hilltop, or that would cause a structure to protrude above a ridgeline or hilltop, unless there is no other possible configuration.

Policy 107: The County shall permit no structure (e.g., housing unit, barn, or other building with four walls) that projects above a visually-sensitive major ridgeline.

Policy 108: To the extent possible, including by clustering if necessary, structures shall be located on that part of a parcel or on contiguous parcels in common ownership on or subsequent to the date this ordinance becomes effective, where the development is least visible to persons on public roads, trails, parks and other public viewpoints. This policy does not apply to agricultural structures to the extent it is necessary for agricultural purposes that they be located in more visible areas.

Policy 113: The County shall review development proposed adjacent to or near public parklands to ensure that views from parks and trails are maintained.

Policy 114: The County shall require the use of landscaping in both rural and urban areas to enhance the scenic quality of the area and to screen undesirable views. Choice of plants should be based on compatibility with surrounding vegetation, drought-tolerance, and suitability to site conditions; and in rural areas, habitat value and fire retardance.

Policy 115: In all cases appropriate building materials, landscaping and screening shall be required to minimize the visual impact of development. Development shall blend with and be subordinate to the environment and character of the area where located, so as to be as unobtrusive as possible and not detract from the natural, open space or visual qualities of the area. To the maximum extent practicable, all exterior lighting must be located, designed and shielded so as to confine direct rays to the parcel where the lighting is located.

Policy 116: To the maximum extent possible, development shall be located and designed to conform with rather than change natural landforms. The alteration of natural topography, vegetation, and other characteristics by grading, excavating, filling or other development activity shall be minimized. To the extent feasible, access roads shall be consolidated and located where they are least visible from public view points.

Policy 117: The County shall require that where grading is necessary, the off-site visibility of cut and fill slopes and drainage improvements is minimized. Graded slopes shall be designed to simulate natural contours and support vegetation to blend with surrounding undisturbed slopes.

Policy 118: The County shall require that grading avoid areas containing large stands of mature, healthy vegetation, scenic natural formations, or natural watercourses.

Policy 119: The County shall require that access roads be sited and designed to minimize grading.

Policy 120: The County shall require that utility lines be placed underground whenever feasible. When located above ground, utility lines and supporting structures shall be sited to minimize their visual impact.

Windfarms

Goal: To maximize the production of wind generated energy.

Policy 169: The County shall allow for continued operation, new development, redevelopment, and expansion of existing and planned windfarm facilities within the limits of environmental constraints.

Policy 170: The County shall protect nearby existing uses from potential traffic, noise, dust, visual, and other impacts generated by the construction and operation of windfarm facilities.

Streets and Highways

Goal: To complete County-planned street and highway improvements that are attractively designed to integrate pedestrian and vehicle use.

Policy 198: The County shall allow reductions in roadways widths in areas of complex topography, sensitive resources, or scenic value.

Scenic Highways

Goal: To preserve and enhance views within scenic corridors.

Policy 215: The County shall manage development and conservation of land within East County scenic highway corridors to maintain and enhance scenic values.

Alameda County Windfarm Standard Conditions

Color Treatment: All wind turbines, blades, towers, and structures shall be treated so as to blend with the surroundings except as modified by the Zoning Administrator to allow any turbine to be painted as mitigation for bird collisions.

Environmental Setting

Regional Character

The project area is in rural, unincorporated Alameda County. The topography is generally characterized by grass-covered, rounded hills and smooth contours, with occasional steep slopes and ridges. A broad, flat expanse of the San Joaquin Valley lies to the northeast and east, and the Sacramento-San Joaquin Delta lies northeast of the project area. The San Joaquin Valley is dominated by agricultural lands. The remainder of the surrounding area is characterized by grass-covered, rounded hills and smooth contours, with occasional steep slopes and ridges, and much of this land serves as cattle grazing land.

The Bethany Reservoir State Recreation Area (Bethany SRA) lies approximately 0.5 mile north of the closest point of the project area. The city of Tracy lies approximately 4.8 miles east of the closest point of the project area. The area south of the project parcels is largely undeveloped, and the city of Livermore lies approximately 5.5 miles southwest of the closest point of the project area.

In general, the project area is mostly undeveloped. However, agricultural, industrial, and rural residential land uses are scattered throughout the region. Wind turbines and associated infrastructure are a dominant and established semi-industrial visual feature within and surrounding the project area. Refer to Figures 3.1-1 through 3.1-6.

Vicinity Character

The project vicinity is defined as the area within 0.5 mile of the project parcels.

The overall project vicinity is characterized by rolling, grassy terrain with strings of turbines and associated infrastructure, consisting of substations, transmission lines, access roads, meteorological towers, and transformers. In addition, there are streams that traverse each of the project parcels. There are approximately 300 Kenetech model KCS-56 100kw wind turbines, consisting of lattice towers 90 to 100 feet tall, currently on the project parcels. In addition to the turbines and associated infrastructure, the project vicinity is dotted with residences, businesses, and stock ponds.

The California Aqueduct lies east and west of the Castello (APN 99B-7500-3-1) and Arnaudo (APN 99B-7600-1-1) parcels and continues north and east of the project parcels. The Bethany Reservoir SRA and associated infrastructure are located approximately 0.3 mile north of the Ralph 2 parcel (APN 99B-7375-1-7) and approximately 1 mile west of the Castello parcel. In addition, the San Joaquin County to Shadow Cliffs Regional Trail passes south of the Pombo parcel (APN 99B-7750-6-0) just south of I-580, and the California Aqueduct Bikeway runs along the California Aqueduct just west of the Arnaudo parcel (see Figure 3.1-1) (East Bay Regional Park District 2007).

Brushy Peak Regional Preserve is a regional park managed by the East Bay Regional Park District, located generally on the western side of the Altamont Hills, north of I-580. It has a system of day-use trails with views to the west, east and south, but it lies about 4 miles west of the nearest project parcel, beyond intervening Altamont Hills.

Approximately 15.4 miles of I-580 in San Joaquin and Alameda Counties, from I-5 to I-205, is a state scenic highway. A portion of the State-designated scenic highway segment of I-580 lies just outside the project vicinity of the Griffith South and Griffith North parcels (APN 99B-7875-1-3 and APN 99B-7875-1-2) (Figure 3.1-1) approximately 0.6 mile north and east of these parcels (California Department of Transportation 2012). In addition, several Alameda County-designated scenic routes traverse the project vicinity: I-580, Altamont Pass Road, Grant Line Road, Mountain House Road, and Patterson Pass Road (Alameda County 1966). Views from these roadways include the existing turbines and infrastructure associated with the project area.

Existing Viewer Groups and Viewer Responses

Sensitive visual receptors in the project vicinity could include residents near the project area, travelers on nearby roadways, employees at nearby businesses, and recreationists at area facilities.

Residents

There are a few residences scattered throughout the project vicinity. These residences tend to be mostly single-family, rural homes on large plots of land. The views of most residents in the project area consist of smooth, grass-covered, rolling hills and turbine strings characteristic of the project area. Normally, residents are expected to have the highest sensitivity to visual changes due to their familiarity with the view, their investment in the area, and their sense of ownership of the view. However, residents who occupy parcels leased for wind generation facilities would be expected to



Figure 3.1-2
Existing and Simulated Views from Mountain House Road—
Southbound, Looking Southeast



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Figure 3.1-3
Existing and Simulated Views from Altamont Pass Road—
Westbound, Looking Southwest



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Figure 3.1-4
Existing and Simulated Views from Altamont Pass Road—
Eastbound, Looking Northeast



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Figure 3.1-5
Existing and Simulated Views from Interstate 580—
Westbound, Looking Northwest



Figure 3.1-6
Existing and Simulated Views from Interstate 580—
Northbound, Looking West

have low sensitivity to change because these landowners have agreed to lease the project parcels for wind energy generation purposes and would therefore be more accepting of related visual changes. As discussed in Section 2.2.2, *Project Area, Existing Conditions and Land Uses*, the existing facilities are constructed entirely on private land, leased under long-term agreements with the landowners, and the proposed facilities would occupy the same parcels. Therefore, the visual sensitivity of these residents to the Sand Hill Wind Project is considered low. However, there are residents outside these parcels who would have views of the project parcels, such as the cluster of rural residences along Patterson Pass and Midway Roads, just east of the Midway Substation. These residents are considered highly sensitive.

Businesses

There are a few businesses/industrial uses scattered throughout the project vicinity. Businesses in the project area and vicinity are mostly agriculture-related. In addition, there is an off-road specialties store off of Altamont Pass Road and the Mountain House Bar off of Grant Line Road. The businesses near the project area are in close proximity to turbine strings, and their views consist of smooth, grass-covered, rolling hills and turbine strings characteristic of the project area and the larger APWRA. Employees at nearby businesses would be engaged in work-related activities and would similarly be expected to be less sensitive to visual changes than nearby residents. Therefore, businesses are considered to have low visual sensitivity.

Roadway Users

Motorists use roadways in the project vicinity and may use the roadways for commuting and hauling or for more recreational uses, such as sightseeing on scenic roadways. Roadways traversing the project vicinity range from high-speed interstate to lower-speed, two-lane local roadways that wind through the rolling landscape. Views from project vicinity roads consist of smooth, grass-covered, rolling hills mostly dominated by turbine strings. While more numerous than residents, motorists would generally be less sensitive to visual changes in the project area because of the shorter duration of their exposure to the views and the focus of their attention on driving activities. Therefore, motorists are considered to have moderate visual sensitivity.

Recreationists

While the project parcels do not support any recreational facilities, potentially sensitive receptors could include individuals engaging in recreational activities at nearby facilities. Recreationists include cyclists on regional trails and local roadways, users of recreational areas, and visitors to the Altamont Speedway. Viewers using recreation trails and recreation areas are considered to have high visual sensitivity because recreationists tend to highly value views in designated recreation areas and could be exposed to these views for extended periods (e.g., hiking along regional trails or cycling along the California Aqueduct Bikeway). Views seen by recreationists may or may not include turbine strings, depending on the viewer's position in the landscape relative to areas with turbines and presence or absence of intervening topography or other features that may limit views. However, recreationists are expected to place the highest value on ridges or hilltops that are not presently developed with turbines, transmission towers and lines, telecommunications towers or other semi-industrial components of the built environment. Visitors of the Altamont Speedway would have low visual sensitivity because they are spectators focused on watching the races.

3.1.3 Environmental Impacts

This section describes the CEQA impact analysis relating to visual resources for the Initial and Full Repower phases. It describes the methods used to determine the potential impacts and lists the criteria used to conclude whether an impact would be significant. 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 where applicable.

Methods for Analysis

Using the concepts and terminology described at the beginning of this section, and criteria for determining significance described below, analysis of the visual effects of the project are based on the following.

- Evaluation of regional visual context.
- Review of project construction drawings.
- Evaluation of existing conditions against visual simulations prepared for the Initial Repower.
- Review of the Initial and Full Repower phases in regard to compliance with state and local ordinances and regulations and professional standards pertaining to visual quality.

The shrouded turbines are simulated at approximately 153 feet tall, which is equal to a 120-foot hub height plus a shroud radius of 33 feet. This is assumed to be the approximate height of most turbines, although turbines could be up to a total of 190 feet tall. Visual simulations were not prepared for the Full Repower because information on the siting of turbines under the Full Repower is not available and, while the Full Repower is anticipated, it is not a part of the current CUP application.

Determination of Significance

Based on Appendix G of the State CEQA Guidelines, a proposed project would normally be required to determine if it would have any of the following potential significant effects.

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a 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 daytime or nighttime views in the area.

Impacts and Mitigation Measures

This section describes impacts expected to occur with implementation of the Initial Repower, and provides mitigation measures, where applicable.

Initial Repower

Impact AESTH-1: Temporary visual impacts caused by construction activities (less than significant with mitigation)

Construction of the Initial Repower would create temporary changes in views of and from the project area. Refer to Section 2.5, *Project Decommissioning and Construction Activities and Facilities*, for information about decommissioning and construction activities. Decommissioning and construction activities associated with the Initial Repower are expected to begin in 2014 and would last 6 to 9 months. Construction activities would occur between 7:00 a.m. and 7:00 p.m. Monday through Friday and between 8:00 a.m. and 6:00 p.m. on Saturdays and Sundays. Decommissioning and construction activities would create views of heavy equipment and associated vehicles, within the viewshed of residents, businesses, recreation areas, State-designated scenic highways (I-580), and Alameda County-designated scenic routes. Refer to the *Vicinity Character* discussion above for a detailed description of these land uses in the project vicinity. In addition, high-voltage lighting used for nighttime construction could be a nuisance to nearby residents. Construction would also require crane pads and laydown areas for off-loading turbine components.

Principal viewer groups of construction activities include motorists along State-scenic highways and County-designated scenic routes, nearby residences, recreationists using the recreation areas and trails, and employees of nearby businesses. While motorists in the area would be moderately sensitive to changes in views, they have intermittent and short-term visual access to the project area as they are passing by, so they would not be negatively affected by temporary construction activities. Residents with views of project parcels are considered highly sensitive viewers, and residents who own and reside on project parcels are considered to have low visual sensitivity. Both these groups could be adversely affected by construction activities because they would have prolonged views of construction activities and are not accustomed to construction activities in the area. Recreationists are considered to be highly sensitive because they could have prolonged views of construction activities when using regional trails or the California Aqueduct Bikeway, and they value the views from these recreation facilities and would not be accustomed to construction activities in the area. Therefore, recreationists could be adversely affected. Employees of businesses would not be greatly affected by construction activities because they would be mostly focused on their work, rather than construction activities.

Construction impacts would be temporary and short-term, and decommissioning and construction activities would occur in a manner consistent with Alameda County requirements for work days and hours. However, viewers in the project vicinity (residents and recreationists) could perceive impacts from the use of high-voltage lighting used for nighttime construction as significant.

Therefore, the visual impact that would result from construction activities would be potentially significant. Implementation of Mitigation Measure AESTH-1 would reduce this impact to a less-than-significant level.

Mitigation Measure AESTH-1: Limit construction to daylight hours

Construction activities will not continue past daylight hours (which varies according to season) or on weekends. This would reduce the amount of construction activities experienced by viewer groups because most construction activities would occur during business hours (when most viewer groups are likely at work) and would eliminate the need to introduce high-wattage lighting sources to operate in the dark.

Impact AESTH-2: Have a substantial adverse effect on a scenic vista (significant and unavoidable)

There are no designated scenic vistas in the project area. However, a number of scenic vistas are available from local roadways and regional trails, out and over the project area. The area consists of wide-open views of the rolling, grass-covered, rural landscape dotted with existing turbines. Refer to Figures 3.1-2 through 3.1-6 for visual simulations of the proposed turbines compared to existing conditions. As shown in Figures 3.1-2 through 3.1-6, the new, shrouded turbine design detracts from the natural landscape more than the existing open-blade design. Existing turbines range from 105 feet tall to just over 140 feet tall to the top of the blade-swept area (see Figure 2-8). The shrouded turbines shown in the simulation are approximately 153 feet tall; select turbines could be up to 190 feet tall, but in all cases would be less than 200 feet. Therefore, the shrouded turbines could range from 37 to 85 feet taller than the existing turbines. In addition, the existing turbines consist of both lattice steel and steel monopole towers that have a smaller surface area compared to the wider and taller shrouded turbines. Both the existing turbines and the proposed shrouded turbines rotate horizontally to face the wind. However, the large, round structure of the proposed turbine shrouds would be very prominent and noticeable elevated, new elements of the built environment, whereas the spinning blades of the smaller existing turbines are not as noticeable above the height of the turbine tower because the individual blades are thin and long in comparison to the more substantial structure of the shrouds. In addition, the appearance of the existing turbine blades is further reduced as blades spin faster and individual blades blur, compared to a shroud structure that is a fixed visual element with interior blades that spin. The larger shroud structure is clearly noticeable in the visual simulation and in Figure 2-8. The increase in height and surface area makes the new turbines more visually prominent than existing turbines against the rolling, grassy terrain. As seen in the visual simulation, the eye is drawn to the large, shrouded turbines, which may be expected to add a new and noticeable disruption of the view of the skyline above the rolling hills. Where select shrouded turbines are up to 190 feet tall, this effect would be more pronounced.

Viewer sensitivity to changes resulting from the Initial Repower is based on viewer response. The shrouded turbines would have a combination of effects on the area's visual quality and rural character. From one perspective, the shrouded turbines could be seen as a visual intrusion, characterized by tall metal structures that would interfere with the natural aesthetic value of the landscape or increase the visual prominence of turbines in the landscape when compared to existing turbines. From another perspective, shrouded turbines could be seen as having their own aesthetic quality, distinguishing them from other nonagricultural land uses. Although industrial in form and purpose, shrouded turbines are essentially "farming" the wind for energy, are more efficient than the existing turbines, and may be perceived positively for reducing avian mortality. In addition, the form of the shrouded turbines and the motion of the spinning blades could evoke a pleasant visual experience. In addition, positive visual perception may result from the perceived environmental benefits associated with green energy production through wind turbines. However, considering that moderately- and highly-visually sensitive viewers (motorists, residents, and recreationists, respectively) would be exposed to these changes to existing scenic vistas and have the potential to view changes negatively, impacts associated with the Initial Repower are considered significant and unavoidable. The Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions* would reduce this impact, but not to a less-than-significant level. Accordingly, the impact on scenic vistas in the project area would remain significant and unavoidable.

Impact AESTH-3: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway (significant and unavoidable)

As discussed in the *Vicinity Character* section, I-580 from the San Joaquin County line to I-205, a 0.4 mile long segment, is a State-designated scenic highway (California Department of Transportation 2012). As shown in Figure 3.1-1, the project area includes this segment of I-580. The closest proposed turbines to this segment are on the Griffith parcels (APN 99B-7875-1-3 and APN 99B-7875-1-2 and are approximately 0.7 mile south. The turbines are not easily visible from I-580 in Alameda County (see Figure 3.1-6) due to topography in some areas and distance in others. The most dominant artificial features from this road segment in Alameda County are the large towers associated with power lines and the tall, stadium-type lighting associated with the Altamont Speedway. Although the Initial Repower is not in San Joaquin County, existing turbines on the Griffith parcels are more visible from I-580 in San Joaquin County. As for the segment in Alameda County, the large towers associated with power lines are the most dominant anthropogenic feature visible from the State-designated scenic portion of I-580 near the project area. Implementation of the Initial Repower would not change that, but the shrouded turbines would be more visually prominent than existing turbines because of their taller height and larger surface area, as described under Impact AESTH-2 (see Figure 3.1-6).

In addition to State-designated scenic highways, there are five Alameda County-designated scenic routes in the project area: I-580, Altamont Pass Road, Grant Line Road, Mountain House Road, and Patterson Pass Road (see Figure 3.1-1). As shown in Figures 3.1-2 through 3.1-5, motorists on these roads are accustomed to seeing wind turbines along these routes. However, the new, shrouded turbine design detracts from the natural landscape more than the existing open-blade design. The increase in surface area makes the new turbines more visually prominent against the rolling, grassy terrain. As seen in the visual simulations (Figures 3.1-2 through 3.1-6), the large, shrouded turbines could substantially disrupt the view of the skyline above the rolling hills.

Consistent with the assessment described under Impact AESTH-2, viewers may perceive shrouded turbines positively or negatively. Impacts associated with the Initial Repower on Alameda County-designated scenic routes would be significant and unavoidable considering that viewers have the potential to perceive visual changes negatively. The Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions* would reduce this impact, but not to a less-than-significant level. Accordingly, the impact on scenic resources in the project area would be significant and unavoidable.

Impact AESTH-4: Substantially degrade the existing visual character or quality of the site and its surroundings (significant and unavoidable)

The Initial Repower would be primarily visible to recreationists, area residents, motorists, and employees of the businesses (see *Vicinity Character* section for details).

As discussed in the *Vicinity Character* section, the project area is mostly characterized by grass-covered, rounded hills and smooth contours, and strings of turbines and associated infrastructure are the most visually distinct artificial features throughout most the project area. However, as shown in Figures 3.1-2 through 3.1-5, the new, shrouded turbine design would detract from the natural landscape more than the existing open-blade design. As described under Impact AESTH-2, their taller height and larger surface area would make the shrouded turbines more visually prominent against the rolling, grassy terrain. The eye is drawn to the large, shrouded turbines,

which have a space-age feel and are less compatible with the existing rural landscape than the open-blade turbine design. Under existing conditions, the visual experience is dominated by existing turbine towers, which may be less visually distracting than the large, shrouded turbines. See Figure 3.1-1 for the designated scenic routes and recreation areas from which the Initial Repower would be visible. The area also has several high-tension power lines and towers and telecommunications facilities that have been in place for several decades, which have effectively “fractured” the integrity of the Altamont Hills as an area of exceptional beauty. While the addition of the shrouded turbines to an area with little existing human-built infrastructure could be so adverse as to make them entirely unacceptable, in the context of the existing visual character of the eastern Altamont Hills, the shrouded turbines may be considered acceptable as new elements of the human-altered landscape.

As described under Impact AESTH-2, viewers may perceive shrouded turbines positively or negatively. Because viewers have the potential to perceive visual changes negatively, the new, shrouded turbines would substantially degrade the existing visual character of the project area, and impacts associated with the Initial Repower are considered significant and unavoidable. The Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions* would reduce this impact, but not to a less-than-significant level. Accordingly, the impact on visual character and quality of the project area would be significant and unavoidable.

Impact AESTH-5: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area (less than significant)

As discussed in the project description, the shrouded turbines are not expected to require FAA marking or lighting because they would be less than 200 feet tall. Therefore, the Initial Repower would not create a new source of substantial light in the project area that would affect nighttime views.

Generally, turbines are painted white. The bright white paint of the turbines would create a new substantial source of glare because the new, shrouded turbines have more surface area than existing turbines. This impact would be significant. However, the proposed project would comply with the Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions*, which would reduce this impact to a less-than-significant level. No mitigation is required.

Full Repower

As discussed in Section 2.4, *Project Overview*, the Initial Repower phase analyzed above would involve the decommissioning and replacement of approximately 4 MW of generating capacity, and the subsequent Full Repower phase would involve repowering of the remaining wind farm facilities with up to 300 new shrouded turbines. The Full Repower includes an additional parcel, 99B-6325-1-4, south of Altamont Pass Road (refer to Figure 2-2).

Impact AESTH-1[F]: Temporary visual impacts caused by construction activities (less than significant with mitigation)

Construction and decommissioning activities associated with repowering of the remaining 320–330 existing 1980s-‘90s-era wind turbines are expected to be the same as those for the Initial Repower, although on a substantially larger scale, and would create temporary changes in views of and from the project area. In addition, while the parcels that surround it are currently developed with lattice steel and monopole turbines, parcel 99B-6325-1-4 is not currently developed with any turbines. Refer to Sections 2.5.1 and 2.5.2 for a detailed description of construction and decommissioning

activities. Principal viewer groups of construction activities include motorists along State-scenic highways and County-designated scenic routes, nearby residences, recreationists using the recreation areas and trails, and employees of nearby businesses. Decommissioning and construction activities would create views of heavy equipment and associated vehicles, within their. Parcel 99B-6325-1-4 is bordered by Altamont Pass Road and I-580, so motorists on these designated scenic routes would see construction activities taking place on this parcel. Refer to the *Vicinity Character* discussion above for a detailed description of these land uses in the project vicinity. In addition, high-voltage lighting used for nighttime construction could be a nuisance to nearby residents. Construction would also require crane pads and laydown areas for off-loading turbine components.

Construction impacts would be temporary and short-term, and decommissioning and construction activities would occur in a manner consistent with Alameda County requirements for work days and hours. However, viewers in the project vicinity (residents and recreationists) could perceive impacts from the use of high-voltage lighting used for nighttime construction as significant if construction occurs past daylight hours, which vary according to season. These impacts on viewers would be similar to those described for the Initial Repower. However, as noted in Chapter 2, *Project Description*, the duration of construction activities for the Full Repower would be longer than for the Initial Repower: 9 months instead of 6 months. The visual impact that would result from construction under the Full Repower would be potentially significant. Implementation of Mitigation Measure AESTH-1 identified for the Initial Repower, would reduce impacts associated with Full Repower construction to less than significant.

Mitigation Measure AESTH-1: Limit construction to daylight hours

Please refer to discussion of Mitigation Measure AESTH-1 under *Initial Repower*, Impact AESTH-1.

Impact AESTH-2[F]: Have a substantial adverse effect on a scenic vista (significant and unavoidable)

As for the Initial Repower, the Applicant would comply with the Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions*, for the Full Repower phase. However, the Full Repower would result in significant impacts on scenic vistas from local roadways and regional trails, out and over the project area. Refer to Figures 3.1-2 through 3.1-6 for visual simulations of the proposed Initial Repower turbines compared to existing conditions. As shown in Figures 3.1-2 through 3.1-6, the new, shrouded turbine design detracts from the natural landscape more than the existing open-blade design. As discussed for the Initial Repower, the increase in height and surface area of the shrouded turbines and prominence of the shroud compared to existing blades makes the new turbines more visually conspicuous against the rolling, grassy terrain. For the Full Repower, the resulting impacts would be substantially more intense than for the Initial Repower. The Full Repower would introduce approximately 300 more new, shrouded turbines, which constitutes a greater than seven-fold increase in magnitude or concentration beyond the 40-turbine Initial Repower. In addition, parcel 99B-6325-1-4 is not currently developed with any turbines and constructing shrouded turbines on this parcel, which is bordered by Altamont Pass Road and I-580, would compound the visual presence of turbines in the project area. In addition, the Full Repower would include the erection of additional met towers and may involve the construction of a new O&M building on one of the parcels. Although the visual novelty of shrouded turbines would likely decrease as some viewers become accustomed over time to the Initial Repower, a visual change of this magnitude would almost certainly be perceived negatively by viewers. As described under Initial Repower Impact AESTH-2, viewer sensitivity to changes resulting from the Full Repower, as with the Initial Repower, could be seen as a

visual intrusion or perceived positively for reducing avian mortality and being a green energy source. Because motorists, residents, and recreationists would be moderately and highly sensitive to visual changes to existing scenic vistas and these viewers have the potential to view changes negatively, impacts on scenic vistas associated with the Full Repower would be significant and unavoidable. The Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions* would reduce this impact, but not to a less-than-significant level. Accordingly, the impact on scenic vistas in the project area would remain significant and unavoidable.

Impact AESTH-3[F]: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway (significant and unavoidable)

I-580 from the San Joaquin County line to I-205, a 0.4 mile long segment, is a State-designated scenic highway (California Department of Transportation 2012) and there are five Alameda County-designated scenic routes in the project area: I-580, Altamont Pass Road, Grant Line Road, Mountain House Road, and Patterson Pass Road (see Figure 3.1-1). As described above for the Initial Repower, even with implementation of the Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions*, the Full Repower would result in significant impacts on designated scenic routes. Although motorists on these roads are used to seeing wind turbines along these routes, the new, shrouded design could disrupt existing views of the natural landscape more than the existing open-blade design. In addition, parcel 99B-6325-1-4 is not currently developed with any turbines and constructing shrouded turbines on this parcel, which is bordered by Altamont Pass Road and I-580, would compound the visual presence of turbines along scenic routes in the project vicinity. The increase in height and surface area of the shrouded turbines and prominence of the shroud compared to existing blades makes the new turbines more visually conspicuous against the rolling, grassy terrain. As described under Initial Repower Impact AESTH-2 and Full Repower Impact AESTH-2[F], viewers may perceive shrouded turbines positively or negatively. With the Full Repower installation of a total of 340 shrouded turbines, many viewers could be overwhelmed by the massive array of large, shrouded turbines, which may greatly disrupt the view of the skyline above the rolling hills, far more than under the Initial Repower. Therefore, the addition of 300 new shrouded turbines under the Full Repower would result in a significant impact on scenic resources in the project vicinity. The Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions* would reduce this impact, but not to a less-than-significant level. Accordingly, the impact on scenic resources in the project area would be significant and unavoidable.

Impact AESTH-4[F]: Substantially degrade the existing visual character or quality of the site and its surroundings (significant and unavoidable)

As for the Initial Repower, the Full Repower would be primarily visible to recreationists, area residents, motorists, and employees of nearby businesses (see *Vicinity Character* section for details). In addition, parcel 99B-6325-1-4 is not currently developed with any turbines and constructing shrouded turbines on this parcel, which is bordered by Altamont Pass Road and I-580, would compound the visual presence of turbines in the project area. As described under Initial Repower Impact AESTH-2 and Full Repower Impact AESTH-2[F], viewers may perceive shrouded turbines positively or negatively. Because viewers have the potential to perceive visual changes negatively, the new, shrouded turbines would substantially degrade the existing visual character of the project area, and impacts associated with the Full Repower would be significant. The Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions* would reduce this impact, but not to a less-than-significant level. Accordingly, the impact would be significant and unavoidable.

Impact AESTH-5[F]: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area (less than significant with mitigation)

The shrouded turbines under the Full Repower would be less than 200 feet tall and would not be expected to require FAA lighting. Therefore, the turbines installed under the Full Repower would not create a new source of substantial light in the project area that would affect nighttime views. In addition, as discussed for the Initial Repower, the turbines would be subject to the Color Treatment standard condition of the *Alameda County Windfarm Standard Conditions* and the turbines would be painted a color that would result in less-than-significant impacts related to a new source of glare (i.e., they would not be painted bright white).

The Full Repower phase would involve development of a new O&M building. Nighttime exterior and interior lighting would introduce a new source of light into the project area and would be significant. Mitigation Measure AESTH-5[F] would reduce this impact on local light and glare to a less-than-significant level. Therefore, under the Full Repower, the impact on local visual conditions due to a new source of light and glare from the O&M building would be less than significant with mitigation.

Mitigation Measure AESTH-5[F]: Minimize exterior and interior lighting fixtures to those needed to ensure safety and security

The exterior and interior lighting for the O&M building will be limited and designed to meet appropriate safety and security requirements. These conditions will be in compliance with International Dark-Sky Association approved fixtures. Specific conditions applied to the exterior and interior lighting may involve, but not be limited to, one or more of the following.

- Lights will be shielded and directed downward or toward the specific area requiring illumination.
- Continuous lighting will be avoided, unless necessary for worker safety.
- Light fixtures will be activated by motion sensors.
- Lights used will be the most energy-efficient type appropriate for the specific use.
- The design will involve the minimum number of lights and minimum brightness level needed to ensure worker safety.
- Interior lighting will use low-intensity fixtures and the use of interior lights will be minimized to those necessary to ensure safety and security.
- Use of harsh mercury vapor or low-pressure sodium bulbs will be prohibited.

3.1.4 References Cited

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